

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **UPP1076**

		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )				
1.	<u>Quercus virginiana</u>	5	<input checked="" type="checkbox"/> 100.0%	FACU
2.	_____	0	<input type="checkbox"/> 0.0%	_____
3.	_____	0	<input type="checkbox"/> 0.0%	_____
4.	_____	0	<input type="checkbox"/> 0.0%	_____
5.	_____	0	<input type="checkbox"/> 0.0%	_____
6.	_____	0	<input type="checkbox"/> 0.0%	_____
7.	_____	0	<input type="checkbox"/> 0.0%	_____
8.	_____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>2.5</u> 20% of Total Cover: <u>1</u>		5	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )				
1.	_____	0	<input type="checkbox"/> 0.0%	_____
2.	_____	0	<input type="checkbox"/> 0.0%	_____
3.	_____	0	<input type="checkbox"/> 0.0%	_____
4.	_____	0	<input type="checkbox"/> 0.0%	_____
5.	_____	0	<input type="checkbox"/> 0.0%	_____
6.	_____	0	<input type="checkbox"/> 0.0%	_____
7.	_____	0	<input type="checkbox"/> 0.0%	_____
8.	_____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>		0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )				
1.	<u>Quercus virginiana</u>	35	<input checked="" type="checkbox"/> 77.8%	FACU
2.	<u>Ilex vomitoria</u>	10	<input checked="" type="checkbox"/> 22.2%	FAC
3.	_____	0	<input type="checkbox"/> 0.0%	_____
4.	_____	0	<input type="checkbox"/> 0.0%	_____
5.	_____	0	<input type="checkbox"/> 0.0%	_____
6.	_____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>23</u> 20% of Total Cover: <u>9</u>		45	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )				
1.	<u>Schizachyrium scoparium</u>	20	<input checked="" type="checkbox"/> 50.0%	FACU
2.	<u>Andropogon virginicus</u>	20	<input checked="" type="checkbox"/> 50.0%	FAC
3.	_____	0	<input type="checkbox"/> 0.0%	_____
4.	_____	0	<input type="checkbox"/> 0.0%	_____
5.	_____	0	<input type="checkbox"/> 0.0%	_____
6.	_____	0	<input type="checkbox"/> 0.0%	_____
7.	_____	0	<input type="checkbox"/> 0.0%	_____
8.	_____	0	<input type="checkbox"/> 0.0%	_____
9.	_____	0	<input type="checkbox"/> 0.0%	_____
10.	_____	0	<input type="checkbox"/> 0.0%	_____
11.	_____	0	<input type="checkbox"/> 0.0%	_____
12.	_____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>20</u> 20% of Total Cover: <u>8</u>		40	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )				
1.	_____	0	<input type="checkbox"/> 0.0%	_____
2.	_____	0	<input type="checkbox"/> 0.0%	_____
3.	_____	0	<input type="checkbox"/> 0.0%	_____
4.	_____	0	<input type="checkbox"/> 0.0%	_____
5.	_____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>		0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That are OBL, FACW, or FAC: 50.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species <u>0</u>	x 1 =	<u>0</u>
FACW species <u>0</u>	x 2 =	<u>0</u>
FAC species <u>30</u>	x 3 =	<u>90</u>
FACU species <u>60</u>	x 4 =	<u>240</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
<b>Column Totals:</b> <u>65</u>	(A)	<u>245</u> (B)
Prevalence Index = B/A=		<u>3.769</u>

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
  - 2 - Dominance Test is > 50%
  - 3 - Prevalence Index is ≤ 3.0<sup>1</sup>
  - Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)
- <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

**Hydrophytic Vegetation Present ?**      Yes     No

Remarks: (If observed, list morphological adaptations below).

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: UPP1076

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Location <sup>2</sup>		
0 - 4	10YR	3/1	100				Sandy Loam	
4 - 16	10YR	4/2	100				Sand	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** Aransas      **Sampling Date:** 2/13/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** UPP1077  
**Investigator(s):** B. Bringham & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Flat      **Slope:** 0 % 0.0 °  
**Subregion (LRR):** LRR T      **Lat:** 27.919744      **Long:** -97.139365      **Datum:** NAD 83  
**Soil Map Unit Name:** Galveston-Mustang complex, 0 to 3 percent slopes, occasionally flooded (GM)      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present?      Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are not present. This is not a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	
<u>Primary Indicators (Minimum of one required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (Minimum of 2 required)</u> <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:	
Remarks:	

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **UPP1077**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. <u>Quercus virginiana</u>	25 <input checked="" type="checkbox"/>	100.0%	FACU
2. _____	0 <input type="checkbox"/>	0.0%	
3. _____	0 <input type="checkbox"/>	0.0%	
4. _____	0 <input type="checkbox"/>	0.0%	
5. _____	0 <input type="checkbox"/>	0.0%	
6. _____	0 <input type="checkbox"/>	0.0%	
7. _____	0 <input type="checkbox"/>	0.0%	
8. _____	0 <input type="checkbox"/>	0.0%	
50% of Total Cover: <u>13</u> 20% of Total Cover: <u>5</u>	25	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	
2. _____	0 <input type="checkbox"/>	0.0%	
3. _____	0 <input type="checkbox"/>	0.0%	
4. _____	0 <input type="checkbox"/>	0.0%	
5. _____	0 <input type="checkbox"/>	0.0%	
6. _____	0 <input type="checkbox"/>	0.0%	
7. _____	0 <input type="checkbox"/>	0.0%	
8. _____	0 <input type="checkbox"/>	0.0%	
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	
2. _____	0 <input type="checkbox"/>	0.0%	
3. _____	0 <input type="checkbox"/>	0.0%	
4. _____	0 <input type="checkbox"/>	0.0%	
5. _____	0 <input type="checkbox"/>	0.0%	
6. _____	0 <input type="checkbox"/>	0.0%	
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Panicum virgatum</u>	65 <input checked="" type="checkbox"/>	72.2%	FAC
2. <u>Cynodon dactylon</u>	10 <input type="checkbox"/>	11.1%	FACU
3. <u>Schizachyrium scoparium</u>	10 <input type="checkbox"/>	11.1%	FACU
4. <u>Phlox drummondii</u>	5 <input type="checkbox"/>	5.6%	UPL
5. _____	0 <input type="checkbox"/>	0.0%	
6. _____	0 <input type="checkbox"/>	0.0%	
7. _____	0 <input type="checkbox"/>	0.0%	
8. _____	0 <input type="checkbox"/>	0.0%	
9. _____	0 <input type="checkbox"/>	0.0%	
10. _____	0 <input type="checkbox"/>	0.0%	
11. _____	0 <input type="checkbox"/>	0.0%	
12. _____	0 <input type="checkbox"/>	0.0%	
50% of Total Cover: <u>45</u> 20% of Total Cover: <u>18</u>	90	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	
2. _____	0 <input type="checkbox"/>	0.0%	
3. _____	0 <input type="checkbox"/>	0.0%	
4. _____	0 <input type="checkbox"/>	0.0%	
5. _____	0 <input type="checkbox"/>	0.0%	
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That are OBL, FACW, or FAC: 40.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 65 x 3 = 195

FACU species 45 x 4 = 180

UPL species 5 x 5 = 25

Column Totals: 90 (A) 330 (B)

Prevalence Index = B/A = 3.667

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

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**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: UPP1077

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	5/2	100				Sand	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes     No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** Aransas      **Sampling Date:** 2/14/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** UPP1078  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Convex      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.919203      **Long:** -97.137403      **Datum:** NAD 83  
**Soil Map Unit Name:** Galveston-Mustang complex, 0 to 3 percent slopes, occasionally flooded (GM)      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present?      Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are not present. This is not a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	
<u>Primary Indicators (Minimum of one required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (Minimum of 2 required)</u> <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:	
Remarks:	



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **UPP1078**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Rubus trivialis</u>	30 <input checked="" type="checkbox"/>	33.3%	FACU
2. <u>Panicum virgatum</u>	30 <input checked="" type="checkbox"/>	33.3%	FAC
3. <u>Helianthus arborescens</u>	20 <input checked="" type="checkbox"/>	22.2%	UPL
4. <u>Schizachyrium scoparium</u>	10 <input type="checkbox"/>	11.1%	FACU
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 45      20% of Total Cover: 18	90	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That are OBL, FACW, or FAC: 50.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 30 x 3 = 90

FACU species 40 x 4 = 160

UPL species 20 x 5 = 100

Column Totals: 115 (A)      400 (B)

Prevalence Index = B/A = 3.478

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

---

**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: UPP1078

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	3/1	100				Sandy Loam	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** Aransas      **Sampling Date:** 2/14/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** UPP1079  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Convex      **Slope:** 2 % 1.1 °  
**Subregion (LRR):** LRR T      **Lat:** 27.912091      **Long:** -97.137594      **Datum:** NAD 83  
**Soil Map Unit Name:** Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponde      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation and wetland hydrology are not present. This is not a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **UPP1079**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. <u>Quercus virginiana</u>	15 <input checked="" type="checkbox"/>	75.0%	FACU
2. <u>Leucaena leucocephala</u>	5 <input checked="" type="checkbox"/>	25.0%	FACU
3. _____	0 <input type="checkbox"/>	0.0%	
4. _____	0 <input type="checkbox"/>	0.0%	
5. _____	0 <input type="checkbox"/>	0.0%	
6. _____	0 <input type="checkbox"/>	0.0%	
7. _____	0 <input type="checkbox"/>	0.0%	
8. _____	0 <input type="checkbox"/>	0.0%	
50% of Total Cover: <u>10</u> 20% of Total Cover: <u>4</u>	<u>20</u>	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	
2. _____	0 <input type="checkbox"/>	0.0%	
3. _____	0 <input type="checkbox"/>	0.0%	
4. _____	0 <input type="checkbox"/>	0.0%	
5. _____	0 <input type="checkbox"/>	0.0%	
6. _____	0 <input type="checkbox"/>	0.0%	
7. _____	0 <input type="checkbox"/>	0.0%	
8. _____	0 <input type="checkbox"/>	0.0%	
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. <u>Schinus terebinthifolia</u>	90 <input checked="" type="checkbox"/>	100.0%	FAC
2. _____	0 <input type="checkbox"/>	0.0%	
3. _____	0 <input type="checkbox"/>	0.0%	
4. _____	0 <input type="checkbox"/>	0.0%	
5. _____	0 <input type="checkbox"/>	0.0%	
6. _____	0 <input type="checkbox"/>	0.0%	
50% of Total Cover: <u>45</u> 20% of Total Cover: <u>18</u>	<u>90</u>	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	
2. _____	0 <input type="checkbox"/>	0.0%	
3. _____	0 <input type="checkbox"/>	0.0%	
4. _____	0 <input type="checkbox"/>	0.0%	
5. _____	0 <input type="checkbox"/>	0.0%	
6. _____	0 <input type="checkbox"/>	0.0%	
7. _____	0 <input type="checkbox"/>	0.0%	
8. _____	0 <input type="checkbox"/>	0.0%	
9. _____	0 <input type="checkbox"/>	0.0%	
10. _____	0 <input type="checkbox"/>	0.0%	
11. _____	0 <input type="checkbox"/>	0.0%	
12. _____	0 <input type="checkbox"/>	0.0%	
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	
2. _____	0 <input type="checkbox"/>	0.0%	
3. _____	0 <input type="checkbox"/>	0.0%	
4. _____	0 <input type="checkbox"/>	0.0%	
5. _____	0 <input type="checkbox"/>	0.0%	
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, ro FAC: 1 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 33.3% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species <u>0</u>	x 1 =	<u>0</u>
FACW species <u>0</u>	x 2 =	<u>0</u>
FAC species <u>90</u>	x 3 =	<u>270</u>
FACU species <u>20</u>	x 4 =	<u>80</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
<b>Colum Totals:</b> <u>90</u>	(A)	<u>350</u> (B)

Prevalence Index = B/A = 3.889

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

**Hydrophytic Vegetation Present ?**      Yes     No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: UPP1079

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	5/1	100				Sand	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes     No

Remarks:



## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** Aransas      **Sampling Date:** 2/14/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** UPP1080  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Convex      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.909703      **Long:** -97.139587      **Datum:** NAD 83  
**Soil Map Unit Name:** Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponde      **NWI Classification:** PEM1A

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

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

Hydrophytic Vegetation Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation and wetland hydrology are not present. This is not a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **UPP1080**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Schizachyrium scoparium</u>	55 <input checked="" type="checkbox"/>	64.7%	FACU
2. <u>Rubus trivialis</u>	20 <input checked="" type="checkbox"/>	23.5%	FACU
3. <u>Helianthus arborescens</u>	10 <input type="checkbox"/>	11.8%	UPL
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 43      20% of Total Cover: 17	85	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That are OBL, FACW, or FAC: 33.3% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 75 x 4 = 300

UPL species 10 x 5 = 50

Column Totals: 110 (A)      350 (B)

Prevalence Index = B/A = 3.182

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

---

**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: UPP1080

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	5/1	100				Sand	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes     No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/14/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** UPP1081  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Concave      **Slope:** 3 % 1.7 °  
**Subregion (LRR):** LRR T      **Lat:** 27.908878      **Long:** -97.139943      **Datum:** NAD 83  
**Soil Map Unit Name:** Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponde      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydric soil is not present. This is not a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **UPP1081**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. <u>Baccharis halimifolia</u>	5 <input checked="" type="checkbox"/>	100.0%	FAC
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 2.5      20% of Total Cover: 1	5	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Rubus trivialis</u>	40 <input checked="" type="checkbox"/>	41.7%	FACU
2. <u>Smilax bona-nox</u>	30 <input checked="" type="checkbox"/>	31.3%	FAC
3. <u>Campsis radicans</u>	25 <input checked="" type="checkbox"/>	26.0%	FAC
4. <u>Andropogonglomeratus</u>	1 <input type="checkbox"/>	1.0%	FACW
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 48      20% of Total Cover: 19	96	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 0.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL species 0 x 1 = 0

FACW species 1 x 2 = 2

FAC species 60 x 3 = 180

FACU species 40 x 4 = 160

UPL species 0 x 5 = 0

Column Totals: 85 (A) 350 (B)

Prevalence Index = B/A = 4,118

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

---

**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: UPP1081

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	4/1	100				Sandy Loam	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- Polyvalue Below Surface (S8) (LRR S, T, U)
  - Thin Dark Surface (S9) (LRR S, T, U)
  - Loamy Mucky Mineral (F1) (LRR O)
  - Loamy Gleyed Matrix (F2)
  - Depleted Matrix (F3)
  - Redox Dark Surface (F6)
  - Depleted Dark Surface (F7)
  - Redox Depressions (F8)
  - Marl (F10) (LRR U)
  - Depleted Ochric (F11) (MLRA 151)
  - Iron-Manganese Masses (F12) (LRR O, P, T)
  - Umbric Surface (F13) (LRR P, T, U)
  - Delta Ochric (F17) (MLRA 151)
  - Reduced Vertic (F18) (MLRA 150A, 150B)
  - Piedmont Floodplain Soils (F19) (MLRA 149A)
  - Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
- 1 cm Muck (A9) (LRR O)
  - 2 cm Muck (A10) (LRR S)
  - Reduced Vertic (F18) (outside MLRA 150A,B)
  - Piedmont Floodplain Soils (F19) (LRR P, S, T)
  - Anomalous Bright Loamy Soils (F20) (MLRA 153B)
  - Red Parent Material (TF2)
  - Very Shallow Dark Surface (TF12)
  - Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes     No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/15/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** UPP1082  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Convex      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.908005      **Long:** -97.140555      **Datum:** NAD 83  
**Soil Map Unit Name:** Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponde      **NWI Classification:** PEM1A

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Wetland hydrology is not present. This is not a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **UPP1082**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Hydrocotyle umbellata</u>	35 <input checked="" type="checkbox"/>	35.0%	OBL
2. <u>Schizachyrium scoparium</u>	25 <input checked="" type="checkbox"/>	25.0%	FACU
3. <u>Spartina patens</u>	25 <input checked="" type="checkbox"/>	25.0%	FACW
4. <u>Ambrosia artemisiifolia</u>	10 <input type="checkbox"/>	10.0%	FACU
5. <u>Helianthus arborescens</u>	5 <input type="checkbox"/>	5.0%	UPL
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 50      20% of Total Cover: 20	100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That are OBL, FACW, or FAC: 75.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species <u>35</u>	x 1 =	<u>35</u>
FACW species <u>25</u>	x 2 =	<u>50</u>
FAC species <u>0</u>	x 3 =	<u>0</u>
FACU species <u>35</u>	x 4 =	<u>140</u>
UPL species <u>5</u>	x 5 =	<u>25</u>
<b>Column Totals:</b> <u>100</u> (A)		<u>250</u> (B)

Prevalence Index = B/A = 2.500

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: UPP1082

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	5/1	100				Sand	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes     No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/15/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** UPP1083  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Concave      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.907103      **Long:** -97.140829      **Datum:** NAD 83  
**Soil Map Unit Name:** Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponde      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydric soil is not present. This is not a wetland.	

## HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **UPP1083**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Chloracantha spinosa</u>	35 <input checked="" type="checkbox"/>	35.0%	FACW
2. <u>Vitis mustanensis</u>	15 <input checked="" type="checkbox"/>	15.0%	UPL
3. <u>Hydrocotyle umbellata</u>	15 <input checked="" type="checkbox"/>	15.0%	OBL
4. <u>Panicum virgatum</u>	15 <input checked="" type="checkbox"/>	15.0%	FAC
5. <u>Ambrosia artemisiifolia</u>	10 <input type="checkbox"/>	10.0%	FACU
6. <u>Sesbania drummondii</u>	10 <input type="checkbox"/>	10.0%	FACW
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 50      20% of Total Cover: 20	100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That are OBL, FACW, or FAC: 66.7% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species	<u>15</u>	x 1 = <u>15</u>
FACW species	<u>45</u>	x 2 = <u>90</u>
FAC species	<u>15</u>	x 3 = <u>45</u>
FACU species	<u>10</u>	x 4 = <u>40</u>
UPL species	<u>15</u>	x 5 = <u>75</u>
<b>Column Totals:</b>	<u>100</u> (A)	<u>265</u> (B)

Prevalence Index = B/A = 2.650

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

---

**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: UPP1083

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	4/1	100				Sand	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/15/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** UPP1084  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Concave      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.906626      **Long:** -97.141096      **Datum:** NAD 83  
**Soil Map Unit Name:** Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponde      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present?      Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydric soil and wetland hydrology are not present. This is not a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **UPP1084**

		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )				
1.	<u>Celtis laevigata</u>	30	<input checked="" type="checkbox"/> 100.0%	FACW
2.	_____	0	<input type="checkbox"/> 0.0%	_____
3.	_____	0	<input type="checkbox"/> 0.0%	_____
4.	_____	0	<input type="checkbox"/> 0.0%	_____
5.	_____	0	<input type="checkbox"/> 0.0%	_____
6.	_____	0	<input type="checkbox"/> 0.0%	_____
7.	_____	0	<input type="checkbox"/> 0.0%	_____
8.	_____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>15</u> 20% of Total Cover: <u>6</u>		30	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )				
1.	_____	0	<input type="checkbox"/> 0.0%	_____
2.	_____	0	<input type="checkbox"/> 0.0%	_____
3.	_____	0	<input type="checkbox"/> 0.0%	_____
4.	_____	0	<input type="checkbox"/> 0.0%	_____
5.	_____	0	<input type="checkbox"/> 0.0%	_____
6.	_____	0	<input type="checkbox"/> 0.0%	_____
7.	_____	0	<input type="checkbox"/> 0.0%	_____
8.	_____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>		0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )				
1.	<u>Schinus terebinthifolia</u>	20	<input checked="" type="checkbox"/> 100.0%	FAC
2.	_____	0	<input type="checkbox"/> 0.0%	_____
3.	_____	0	<input type="checkbox"/> 0.0%	_____
4.	_____	0	<input type="checkbox"/> 0.0%	_____
5.	_____	0	<input type="checkbox"/> 0.0%	_____
6.	_____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>10</u> 20% of Total Cover: <u>4</u>		20	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )				
1.	<u>Panicum virgatum</u>	40	<input checked="" type="checkbox"/> 53.3%	FAC
2.	<u>Leucaena leucocephala</u>	25	<input checked="" type="checkbox"/> 33.3%	FACU
3.	<u>Solanum triquetrum</u>	10	<input type="checkbox"/> 13.3%	UPL
4.	_____	0	<input type="checkbox"/> 0.0%	_____
5.	_____	0	<input type="checkbox"/> 0.0%	_____
6.	_____	0	<input type="checkbox"/> 0.0%	_____
7.	_____	0	<input type="checkbox"/> 0.0%	_____
8.	_____	0	<input type="checkbox"/> 0.0%	_____
9.	_____	0	<input type="checkbox"/> 0.0%	_____
10.	_____	0	<input type="checkbox"/> 0.0%	_____
11.	_____	0	<input type="checkbox"/> 0.0%	_____
12.	_____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>38</u> 20% of Total Cover: <u>15</u>		75	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )				
1.	_____	0	<input type="checkbox"/> 0.0%	_____
2.	_____	0	<input type="checkbox"/> 0.0%	_____
3.	_____	0	<input type="checkbox"/> 0.0%	_____
4.	_____	0	<input type="checkbox"/> 0.0%	_____
5.	_____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>		0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, ro FAC: 3 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 75.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species	<u>0</u>	x 1 = <u>0</u>
FACW species	<u>30</u>	x 2 = <u>60</u>
FAC species	<u>60</u>	x 3 = <u>180</u>
FACU species	<u>25</u>	x 4 = <u>100</u>
UPL species	<u>10</u>	x 5 = <u>50</u>
<b>Column Totals:</b>	<u>125</u> (A)	<u>390</u> (B)

Prevalence Index = B/A = 3.120

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
  - 2 - Dominance Test is > 50%
  - 3 - Prevalence Index is ≤ 3.0<sup>1</sup>
  - Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)
- <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

**Hydrophytic Vegetation Present ?**      Yes     No

Remarks: (If observed, list morphological adaptations below).

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: UPP1084

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	7.5YR	2.5/2	100				Sandy Clay	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes     No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/25/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** UPP1085  
**Investigator(s):** B. Bringhurst & R. Conley      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Flat      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.902403      **Long:** -97.142679      **Datum:** NAD 83  
**Soil Map Unit Name:** Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponde      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Wetland hydrology is not present. This is not a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **UPP1085**

		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )				
1.	<u>Populus deltoides</u>	5	<input checked="" type="checkbox"/> 100.0%	FAC
2.	_____	0	<input type="checkbox"/> 0.0%	_____
3.	_____	0	<input type="checkbox"/> 0.0%	_____
4.	_____	0	<input type="checkbox"/> 0.0%	_____
5.	_____	0	<input type="checkbox"/> 0.0%	_____
6.	_____	0	<input type="checkbox"/> 0.0%	_____
7.	_____	0	<input type="checkbox"/> 0.0%	_____
8.	_____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>2.5</u> 20% of Total Cover: <u>1</u>		5	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )				
1.	_____	0	<input type="checkbox"/> 0.0%	_____
2.	_____	0	<input type="checkbox"/> 0.0%	_____
3.	_____	0	<input type="checkbox"/> 0.0%	_____
4.	_____	0	<input type="checkbox"/> 0.0%	_____
5.	_____	0	<input type="checkbox"/> 0.0%	_____
6.	_____	0	<input type="checkbox"/> 0.0%	_____
7.	_____	0	<input type="checkbox"/> 0.0%	_____
8.	_____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>		0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )				
1.	<u>Schinus terebinthifolia</u>	10	<input checked="" type="checkbox"/> 100.0%	FAC
2.	_____	0	<input type="checkbox"/> 0.0%	_____
3.	_____	0	<input type="checkbox"/> 0.0%	_____
4.	_____	0	<input type="checkbox"/> 0.0%	_____
5.	_____	0	<input type="checkbox"/> 0.0%	_____
6.	_____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>5</u> 20% of Total Cover: <u>2</u>		10	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )				
1.	<u>Panicum virgatum</u>	80	<input checked="" type="checkbox"/> 80.0%	FAC
2.	<u>Leucaena leucocephala</u>	10	<input type="checkbox"/> 10.0%	FACU
3.	<u>Hydrocotyle umbellata</u>	5	<input type="checkbox"/> 5.0%	OBL
4.	<u>Helianthus arborescens</u>	5	<input type="checkbox"/> 5.0%	UPL
5.	_____	0	<input type="checkbox"/> 0.0%	_____
6.	_____	0	<input type="checkbox"/> 0.0%	_____
7.	_____	0	<input type="checkbox"/> 0.0%	_____
8.	_____	0	<input type="checkbox"/> 0.0%	_____
9.	_____	0	<input type="checkbox"/> 0.0%	_____
10.	_____	0	<input type="checkbox"/> 0.0%	_____
11.	_____	0	<input type="checkbox"/> 0.0%	_____
12.	_____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>50</u> 20% of Total Cover: <u>20</u>		100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )				
1.	_____	0	<input type="checkbox"/> 0.0%	_____
2.	_____	0	<input type="checkbox"/> 0.0%	_____
3.	_____	0	<input type="checkbox"/> 0.0%	_____
4.	_____	0	<input type="checkbox"/> 0.0%	_____
5.	_____	0	<input type="checkbox"/> 0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>		0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That are OBL, FACW, or FAC: 75.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL species 5 x 1 = 5

FACW species 0 x 2 = 0

FAC species 95 x 3 = 285

FACU species 10 x 4 = 40

UPL species 5 x 5 = 25

Column Totals: 115 (A)    355 (B)

Prevalence Index = B/A = 3.087

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

---

**Hydrophytic Vegetation Present ?**      Yes     No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: UPP1085

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	5/1	100				Sandy Loam	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/25/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** UPP1086  
**Investigator(s):** B. Bringhurst & R. Conley      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Concave      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.903601      **Long:** -97.142602      **Datum:** NAD 83  
**Soil Map Unit Name:** Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present?      Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are not present. This is not a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **UPP1086**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. <u>Prosopis glandulosa</u>	10 <input checked="" type="checkbox"/>	100.0%	UPL
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 5      20% of Total Cover: 2	10	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Cynodon dactylon</u>	30 <input checked="" type="checkbox"/>	30.0%	FACU
2. <u>Parietaria pensylvanica</u>	20 <input checked="" type="checkbox"/>	20.0%	FACU
3. <u>Medicago lupulina</u>	15 <input type="checkbox"/>	15.0%	UPL
4. <u>Geranium carolinianum</u>	15 <input type="checkbox"/>	15.0%	UPL
5. <u>Eleocharis montevidensis</u>	15 <input type="checkbox"/>	15.0%	FACW
6. <u>Sesbania vesicaria</u>	5 <input type="checkbox"/>	5.0%	FAC
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 50      20% of Total Cover: 20	100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That are OBL, FACW, or FAC: 100.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL species 0 x 1 = 0

FACW species 15 x 2 = 30

FAC species 5 x 3 = 15

FACU species 50 x 4 = 200

UPL species 40 x 5 = 200

Column Totals: 110 (A)      445 (B)

Prevalence Index = B/A = 4,045

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

---

**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: UPP1086

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	3/1	100				Sandy Clay Loam	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/6/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1001\_UP  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Toeslope      **Local relief (concave, convex, none):** Flat      **Slope:** 3 % 1.7 °  
**Subregion (LRR):** LRR T      **Lat:** 27.93172      **Long:** -97.269357      **Datum:** NAD 83  
**Soil Map Unit Name:** Banquete clay, 0 to 1 percent slopes (Ec)      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present?      Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are not present. This is not a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1001\_UP**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. <u>Vachellia farnesiana</u>	10 <input checked="" type="checkbox"/>	66.7%	FACU
2. <u>Lvsimachia arvensis</u>	3 <input checked="" type="checkbox"/>	20.0%	FACU
3. <u>Geranium carolinianum</u>	2 <input type="checkbox"/>	13.3%	UPL
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 7.5      20% of Total Cover: 3	15	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Andropogon aeerarii</u>	90 <input checked="" type="checkbox"/>	94.7%	FAC
2. <u>Bothriochloa ischaemum var. songarica</u>	5 <input type="checkbox"/>	5.3%	UPL
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 48      20% of Total Cover: 19	95	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, ro FAC: 0 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 0.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 90 x 3 = 270

FACU species 13 x 4 = 52

UPL species 7 x 5 = 35

Column Totals: 110 (A) 445 (B)

Prevalence Index = B/A = 4,045

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1001\_UP

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	4/1	100				Silty Clay	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/6/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1001\_WET\_PEM  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A T N/A R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Concave      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.932004      **Long:** -97.26915      **Datum:** NAD 83  
**Soil Map Unit Name:** Banquete clay, 0 to 1 percent slopes (Ec)      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present?    Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?    Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?    Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?    Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>1</u> Water Table Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)    Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1001\_WET\_PEM**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Andropogon aeerdii</u>	70 <input checked="" type="checkbox"/>	70.0%	FAC
2. <u>Eleocharis montevidensis</u>	15 <input type="checkbox"/>	15.0%	FACW
3. <u>Cyperus virens</u>	5 <input type="checkbox"/>	5.0%	FACW
4. <u>Eleocharis minima</u>	5 <input type="checkbox"/>	5.0%	OBL
5. <u>Ludwigia palustris</u>	3 <input type="checkbox"/>	3.0%	OBL
6. <u>Marsilea vestita</u>	2 <input type="checkbox"/>	2.0%	OBL
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 50      20% of Total Cover: 20	100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, ro FAC: 1 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 33.3% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species	<u>10</u>	x 1 = <u>10</u>
FACW species	<u>20</u>	x 2 = <u>40</u>
FAC species	<u>70</u>	x 3 = <u>210</u>
FACU species	<u>0</u>	x 4 = <u>0</u>
UPL species	<u>0</u>	x 5 = <u>0</u>
<b>Column Totals:</b>	<u>110</u> (A)	<u>357</u> (B)

Prevalence Index = B/A = 3.245

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

---

**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1001\_WET\_PEM

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	5/1	100				Silty Clay	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/6/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1002\_UP  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Flat      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.928521      **Long:** -97.211026      **Datum:** NAD 83  
**Soil Map Unit Name:** Calallen sandy clay loam, 0 to 1 percent slopes (Os)      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation and hydric soil are not present. This is not a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>2</u>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1002\_UP**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. <u>Prosopis glandulosa</u>	5 <input checked="" type="checkbox"/>	100.0%	UPL
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 2.5	20% of Total Cover: 1	5	= Total Cover
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Andropogon aeerarii</u>	50 <input checked="" type="checkbox"/>	58.8%	FAC
2. <u>Eleocharis montevidensis</u>	10 <input type="checkbox"/>	11.8%	FACW
3. <u>Cynodon dactylon</u>	10 <input type="checkbox"/>	11.8%	FACU
4. <u>Bothriochloa ischaemum var. songarica</u>	10 <input type="checkbox"/>	11.8%	UPL
5. <u>Opuntia lindheimeri</u>	5 <input type="checkbox"/>	5.9%	UPL
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 43	20% of Total Cover: 17	85	= Total Cover
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That are OBL, FACW, or FAC: 100.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL species 0 x 1 = 0

FACW species 10 x 2 = 20

FAC species 50 x 3 = 150

FACU species 10 x 4 = 40

UPL species 20 x 5 = 100

Column Totals: 90 (A) 310 (B)

Prevalence Index = B/A = 3.444

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

---

**Hydrophytic Vegetation Present ?** Yes  No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1002\_UP

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	3/1	100				Silty Clay	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/6/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1002\_WET\_PEM  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Concave      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.92867      **Long:** -97.210408      **Datum:** NAD 83  
**Soil Map Unit Name:** Calallen sandy clay loam, 0 to 1 percent slopes (Os)      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>1</u> Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1002\_WET\_PEM**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Eleocharis montevidensis</u>	60 <input checked="" type="checkbox"/>	60.0%	FACW
2. <u>Ludwigia peploides</u>	20 <input checked="" type="checkbox"/>	20.0%	OBL
3. <u>Andropogon aegardii</u>	15 <input type="checkbox"/>	15.0%	FAC
4. <u>Marsilea macropoda</u>	5 <input type="checkbox"/>	5.0%	OBL
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 50      20% of Total Cover: 20	100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That are OBL, FACW, or FAC: 50.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species <u>25</u>	x 1 =	<u>25</u>
FACW species <u>60</u>	x 2 =	<u>120</u>
FAC species <u>15</u>	x 3 =	<u>45</u>
FACU species <u>0</u>	x 4 =	<u>0</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
<b>Column Totals:</b> <u>90</u>	(A)	<u>310</u> (B)

Prevalence Index = B/A = 3.444

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1002\_WET\_PEM

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

Depth (inches)	Matrix			Redox Features			Location <sup>2</sup>	Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type <sup>1</sup>			
0 - 16	10YR	4/1	97	10YR	4/6	3	C	PL	Clay

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1003\_UP  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Convex      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.929003      **Long:** -97.207223      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present?      Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
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Remarks:  
Hydrophytic vegetation, hydric soil, and wetland hydrology are not present. This is not a wetland.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	
<u>Primary Indicators (Minimum of one required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (Minimum of 2 required)</u> <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
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Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1003\_UP**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Bothriochloa ischaemum</u>	30 <input checked="" type="checkbox"/>	30.0%	UPL
2. <u>Astragalus nuttallianus</u>	25 <input checked="" type="checkbox"/>	25.0%	UPL
3. <u>Cynodon dactylon</u>	25 <input checked="" type="checkbox"/>	25.0%	FACU
4. <u>Andropogon gerardii</u>	15 <input type="checkbox"/>	15.0%	FAC
5. <u>Medicago lupulina</u>	5 <input type="checkbox"/>	5.0%	UPL
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 50      20% of Total Cover: 20	100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 0.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 15 x 3 = 45

FACU species 25 x 4 = 100

UPL species 60 x 5 = 300

Column Totals: 100 (A)      445 (B)

Prevalence Index = B/A = 4.450

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**Hydrophytic Vegetation Indicators:**

**1 - Rapid Test for Hydrophytic Vegetation**

**2 - Dominance Test is > 50%**

**3 - Prevalence Index is ≤ 3.0<sup>1</sup>**

**Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)**

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

---

**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1003\_UP

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 6	10YR	3/1	100				Silty Clay	gravel

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: gravel  
 Depth (inches): 6

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1003\_WET\_PEM  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A T N/A R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Concave      **Slope:** 2 % 1.1 °  
**Subregion (LRR):** LRR T      **Lat:** 27.929029      **Long:** -97.207356      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present?    Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?    Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?    Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)    Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1003\_WET\_PEM**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Borrhichia frutescens</u>	25 <input checked="" type="checkbox"/>	25.0%	OBL
2. <u>Panicum viraatum</u>	20 <input checked="" type="checkbox"/>	20.0%	FAC
3. <u>Andropogon aequalis</u>	15 <input checked="" type="checkbox"/>	15.0%	FAC
4. <u>Spartina patens</u>	15 <input checked="" type="checkbox"/>	15.0%	FACW
5. <u>Cyperus enterianus</u>	10 <input type="checkbox"/>	10.0%	FACW
6. <u>Cyperus virens</u>	10 <input type="checkbox"/>	10.0%	FACW
7. <u>Paspalum dilcatulum</u>	5 <input type="checkbox"/>	5.0%	FAC
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 50      20% of Total Cover: 20	100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 0.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species	<u>25</u> x 1 =	<u>25</u>
FACW species	<u>35</u> x 2 =	<u>70</u>
FAC species	<u>40</u> x 3 =	<u>120</u>
FACU species	<u>0</u> x 4 =	<u>0</u>
UPL species	<u>0</u> x 5 =	<u>0</u>
<b>Column Totals:</b>	<u>100</u> (A)	<u>445</u> (B)

Prevalence Index = B/A = 4.450

---

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

---

**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1003\_WET\_PEM

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

Depth (inches)	Matrix			Redox Features			Texture	Remarks	
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Location <sup>2</sup>			
0 - 16	10YR	4/1	97	10YR	5/6	3	C	PL	Clay

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1004\_UP  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Convex      **Slope:** 2 %      1.1 °  
**Subregion (LRR):** LRR T      **Lat:** 27.928589      **Long:** -97.206789      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present?      Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are not present. This is not a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1004\_UP**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Cynodon dactylon</u>	55 <input checked="" type="checkbox"/>	55.0%	FACU
2. <u>Bothriochloa ischaemum var. songarica</u>	20 <input checked="" type="checkbox"/>	20.0%	UPL
3. <u>Astragalus nuttallianus</u>	20 <input checked="" type="checkbox"/>	20.0%	UPL
4. <u>Medicago lupulina</u>	5 <input type="checkbox"/>	5.0%	UPL
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 50      20% of Total Cover: 20	100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That are OBL, FACW, or FAC: 100.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species <u>0</u>	x 1 =	<u>0</u>
FACW species <u>0</u>	x 2 =	<u>0</u>
FAC species <u>0</u>	x 3 =	<u>0</u>
FACU species <u>55</u>	x 4 =	<u>220</u>
UPL species <u>45</u>	x 5 =	<u>225</u>
<b>Column Totals:</b> <u>100</u>	(A)	<u>445</u> (B)

Prevalence Index = B/A = 4.450

---

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

---

**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1004\_UP

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	4/1	100				Silty Clay	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes     No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1004\_WET\_PEM  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Concave      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.928621      **Long:** -97.20687      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>2</u> Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1004\_WET\_PEM**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1.	0	0.0%	
2.	0	0.0%	
3.	0	0.0%	
4.	0	0.0%	
5.	0	0.0%	
6.	0	0.0%	
7.	0	0.0%	
8.	0	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1.	0	0.0%	
2.	0	0.0%	
3.	0	0.0%	
4.	0	0.0%	
5.	0	0.0%	
6.	0	0.0%	
7.	0	0.0%	
8.	0	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover
<b>Shrub Stratum</b> (Plot Size : 30 )			
1.	0	0.0%	
2.	0	0.0%	
3.	0	0.0%	
4.	0	0.0%	
5.	0	0.0%	
6.	0	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <i>Eleocharis montevidensis</i>	70	70.0%	FACW
2. <i>Cynodon dactylon</i>	20	20.0%	FACU
3. <i>Marsilea macropoda</i>	5	5.0%	OBL
4. <i>Cyperus virens</i>	3	3.0%	FACW
5. <i>Borrchia frutescens</i>	2	2.0%	OBL
6.	0	0.0%	
7.	0	0.0%	
8.	0	0.0%	
9.	0	0.0%	
10.	0	0.0%	
11.	0	0.0%	
12.	0	0.0%	
50% of Total Cover: 50	20% of Total Cover: 20	100	= Total Cover
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1.	0	0.0%	
2.	0	0.0%	
3.	0	0.0%	
4.	0	0.0%	
5.	0	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 0.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species	<u>7</u>	x 1 = <u>7</u>
FACW species	<u>73</u>	x 2 = <u>146</u>
FAC species	<u>0</u>	x 3 = <u>0</u>
FACU species	<u>20</u>	x 4 = <u>80</u>
UPL species	<u>0</u>	x 5 = <u>0</u>
<b>Column Totals:</b>	<u>100</u> (A)	<u>445</u> (B)

Prevalence Index = B/A = 4.450

---

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

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**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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**Hydrophytic Vegetation Present ?** Yes  No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1004\_WET\_PEM

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

Depth (inches)	Matrix			Redox Features			Location <sup>2</sup>	Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type <sup>1</sup>			
0 - 16	10YR	4/1	97	10YR	5/6	3	C	PL	Silty Clay

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1005\_UP  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Convex      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.928836      **Long:** -97.205185      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Hydrophytic vegetation is not present. This is not a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<u>Secondary Indicators (Minimum of 2 required)</u> <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>2</u>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:		
Remarks:		

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1005\_UP**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Panicum virgaatum</u>	35 <input checked="" type="checkbox"/>	35.0%	FAC
2. <u>Bothriochloa ischaemum var. songarica</u>	30 <input checked="" type="checkbox"/>	30.0%	UPL
3. <u>Cynodon dactylon</u>	20 <input checked="" type="checkbox"/>	20.0%	FACU
4. <u>Chloris cucullata</u>	10 <input type="checkbox"/>	10.0%	UPL
5. <u>Cyperus virens</u>	5 <input type="checkbox"/>	5.0%	FACW
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 50      20% of Total Cover: 20	100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That are OBL, FACW, or FAC: 50.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL species 0 x 1 = 0

FACW species 5 x 2 = 10

FAC species 35 x 3 = 105

FACU species 20 x 4 = 80

UPL species 40 x 5 = 200

Column Totals: 100 (A) 233 (B)

Prevalence Index = B/A = 2.330

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

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**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

---

**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1005\_UP

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

Depth (inches)	Matrix			Redox Features				Location <sup>2</sup>	Texture	Remarks
	Color (moist)	%	%	Color (moist)	%	Type <sup>1</sup>				
0 - 16	10YR	4/1	97	10YR	5/6	3	C	PL	Silty Clay	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1005\_WET\_PEM  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Concave      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.929164      **Long:** -97.205505      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1005\_WET\_PEM**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Cyperus enterianus</u>	55 <input checked="" type="checkbox"/>	55.0%	FACW
2. <u>Spartina patens</u>	15 <input type="checkbox"/>	15.0%	FACW
3. <u>Andropogon gerardii</u>	15 <input type="checkbox"/>	15.0%	FAC
4. <u>Panicum virgatum</u>	10 <input type="checkbox"/>	10.0%	FAC
5. <u>Cyperus virens</u>	5 <input type="checkbox"/>	5.0%	FACW
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 50      20% of Total Cover: 20	100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That are OBL, FACW, or FAC: 33.3% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species	<u>0</u>	x 1 = <u>0</u>
FACW species	<u>75</u>	x 2 = <u>150</u>
FAC species	<u>25</u>	x 3 = <u>75</u>
FACU species	<u>0</u>	x 4 = <u>0</u>
UPL species	<u>0</u>	x 5 = <u>0</u>
<b>Column Totals:</b>	<u>100</u> (A)	<u>395</u> (B)

Prevalence Index = B/A = 3.950

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1005\_WET\_PEM

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

Depth (inches)	Matrix			Redox Features			Location <sup>2</sup>	Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type <sup>1</sup>			
0 - 16	10YR	4/1	97	10YR	5/6	3	C	PL	Silty Clay

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1006\_UP  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Convex      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.928975      **Long:** -97.202012      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present?      Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are not present. This is not a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1006\_UP**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Chloris cucullata</u>	30 <input checked="" type="checkbox"/>	37.5%	UPL
2. <u>Andropogon aequalis</u>	20 <input checked="" type="checkbox"/>	25.0%	FAC
3. <u>Medicago lupulina</u>	15 <input type="checkbox"/>	18.8%	UPL
4. <u>Lysimachia arvensis</u>	10 <input type="checkbox"/>	12.5%	FACU
5. <u>Taraxacum officinale</u>	5 <input type="checkbox"/>	6.3%	FACU
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 40      20% of Total Cover: 16	80	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That are OBL, FACW, or FAC: 50.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 20 x 3 = 60

FACU species 15 x 4 = 60

UPL species 45 x 5 = 225

Column Totals: 80 (A) 345 (B)

Prevalence Index = B/A = 4.313

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

---

**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1006\_UP

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	5/2	100				Silty Clay	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- Polyvalue Below Surface (S8) (LRR S, T, U)
  - Thin Dark Surface (S9) (LRR S, T, U)
  - Loamy Mucky Mineral (F1) (LRR O)
  - Loamy Gleyed Matrix (F2)
  - Depleted Matrix (F3)
  - Redox Dark Surface (F6)
  - Depleted Dark Surface (F7)
  - Redox Depressions (F8)
  - Marl (F10) (LRR U)
  - Depleted Ochric (F11) (MLRA 151)
  - Iron-Manganese Masses (F12) (LRR O, P, T)
  - Umbric Surface (F13) (LRR P, T, U)
  - Delta Ochric (F17) (MLRA 151)
  - Reduced Vertic (F18) (MLRA 150A, 150B)
  - Piedmont Floodplain Soils (F19) (MLRA 149A)
  - Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
- 1 cm Muck (A9) (LRR O)
  - 2 cm Muck (A10) (LRR S)
  - Reduced Vertic (F18) (outside MLRA 150A,B)
  - Piedmont Floodplain Soils (F19) (LRR P, S, T)
  - Anomalous Bright Loamy Soils (F20) (MLRA 153B)
  - Red Parent Material (TF2)
  - Very Shallow Dark Surface (TF12)
  - Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes     No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1006\_WET\_PEM\_A  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Flat      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.929192      **Long:** -97.203075      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>2</u>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: WP1006\_WET\_PEM\_A

		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : <u>30</u> )				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="checkbox"/>	0.0%
4.	_____	0	<input type="checkbox"/>	0.0%
5.	_____	0	<input type="checkbox"/>	0.0%
6.	_____	0	<input type="checkbox"/>	0.0%
7.	_____	0	<input type="checkbox"/>	0.0%
8.	_____	0	<input type="checkbox"/>	0.0%
50% of Total Cover: <u>0</u>	20% of Total Cover: <u>0</u>	0	= Total Cover	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : <u>30</u> )				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="checkbox"/>	0.0%
4.	_____	0	<input type="checkbox"/>	0.0%
5.	_____	0	<input type="checkbox"/>	0.0%
6.	_____	0	<input type="checkbox"/>	0.0%
7.	_____	0	<input type="checkbox"/>	0.0%
8.	_____	0	<input type="checkbox"/>	0.0%
50% of Total Cover: <u>0</u>	20% of Total Cover: <u>0</u>	0	= Total Cover	
<b>Shrub Stratum</b> (Plot Size : <u>30</u> )				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="checkbox"/>	0.0%
4.	_____	0	<input type="checkbox"/>	0.0%
5.	_____	0	<input type="checkbox"/>	0.0%
6.	_____	0	<input type="checkbox"/>	0.0%
50% of Total Cover: <u>0</u>	20% of Total Cover: <u>0</u>	0	= Total Cover	
<b>Herb Stratum</b> (Plot Size : <u>30</u> )				
1.	<u>Paspalum blicatulum</u>	30	<input checked="" type="checkbox"/>	37.5% <u>FAC</u>
2.	<u>Monanthochloe littoralis</u>	20	<input checked="" type="checkbox"/>	25.0% <u>OBL</u>
3.	<u>Acourtia wrightii</u>	10	<input type="checkbox"/>	12.5% <u>UPL</u>
4.	<u>Borrchia frutescens</u>	10	<input type="checkbox"/>	12.5% <u>OBL</u>
5.	<u>Tamarix chinensis</u>	10	<input type="checkbox"/>	12.5% <u>FACW</u>
6.	_____	0	<input type="checkbox"/>	0.0%
7.	_____	0	<input type="checkbox"/>	0.0%
8.	_____	0	<input type="checkbox"/>	0.0%
9.	_____	0	<input type="checkbox"/>	0.0%
10.	_____	0	<input type="checkbox"/>	0.0%
11.	_____	0	<input type="checkbox"/>	0.0%
12.	_____	0	<input type="checkbox"/>	0.0%
50% of Total Cover: <u>40</u>	20% of Total Cover: <u>16</u>	80	= Total Cover	
<b>Woody Vine Stratum</b> (Plot Size : <u>30</u> )				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="checkbox"/>	0.0%
4.	_____	0	<input type="checkbox"/>	0.0%
5.	_____	0	<input type="checkbox"/>	0.0%
50% of Total Cover: <u>0</u>	20% of Total Cover: <u>0</u>	0	= Total Cover	

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, ro FAC: 1 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 50.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>30</u>	x 1 = <u>30</u>
FACW species <u>10</u>	x 2 = <u>20</u>
FAC species <u>30</u>	x 3 = <u>90</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>10</u>	x 5 = <u>50</u>
<b>Column Totals:</b> <u>80</u> (A)	<u>345</u> (B)

Prevalence Index = B/A = 4.313

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1006\_WET\_PEM\_A

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	6/1	100				Sandy Clay	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1006\_WET\_PEM\_B  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Concave      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.929151      **Long:** -97.202886      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input checked="" type="radio"/> No <input type="radio"/>
--	--

Remarks:  
Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b>	
<u>Primary Indicators (Minimum of one required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (Minimum of 2 required)</u> <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

<b>Field Observations:</b> Surface Water Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>2</u> Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>
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Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1006\_WET\_PEM\_B**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. <u>Tamarix chinensis</u>	3 <input checked="" type="checkbox"/>	100.0%	<u>FACW</u>
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 1.5      20% of Total Cover: 0.6	3	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Paspalum blicatulum</u>	65 <input checked="" type="checkbox"/>	65.0%	<u>FAC</u>
2. <u>Cyperus virens</u>	20 <input checked="" type="checkbox"/>	20.0%	<u>FACW</u>
3. <u>Rumex crispus</u>	15 <input type="checkbox"/>	15.0%	<u>FAC</u>
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 50      20% of Total Cover: 20	100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That are OBL, FACW, or FAC: 100.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species <u>0</u>	x 1 =	<u>0</u>
FACW species <u>23</u>	x 2 =	<u>46</u>
FAC species <u>80</u>	x 3 =	<u>240</u>
FACU species <u>0</u>	x 4 =	<u>0</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
<b>Column Totals:</b> <u>103</u>	(A)	<u>286</u> (B)

Prevalence Index = B/A = 2.777

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

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**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1006\_WET\_PEM\_B

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

Depth (inches)	Matrix			Redox Features			Location <sup>2</sup>	Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type <sup>1</sup>			
0 - 16	10YR	4/1	97	10YR	5/6	3	C	PL	Silty Clay

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1006\_WET\_PEM\_C  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Flat      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.929542      **Long:** -97.202681      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: WP1006\_WET\_PEM\_C

		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : <u>30</u> )				
1. _____	0	<input type="checkbox"/>	0.0%	_____
2. _____	0	<input type="checkbox"/>	0.0%	_____
3. _____	0	<input type="checkbox"/>	0.0%	_____
4. _____	0	<input type="checkbox"/>	0.0%	_____
5. _____	0	<input type="checkbox"/>	0.0%	_____
6. _____	0	<input type="checkbox"/>	0.0%	_____
7. _____	0	<input type="checkbox"/>	0.0%	_____
8. _____	0	<input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	0		= Total Cover	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : <u>30</u> )				
1. _____	0	<input type="checkbox"/>	0.0%	_____
2. _____	0	<input type="checkbox"/>	0.0%	_____
3. _____	0	<input type="checkbox"/>	0.0%	_____
4. _____	0	<input type="checkbox"/>	0.0%	_____
5. _____	0	<input type="checkbox"/>	0.0%	_____
6. _____	0	<input type="checkbox"/>	0.0%	_____
7. _____	0	<input type="checkbox"/>	0.0%	_____
8. _____	0	<input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	0		= Total Cover	
<b>Shrub Stratum</b> (Plot Size : <u>30</u> )				
1. _____	0	<input type="checkbox"/>	0.0%	_____
2. _____	0	<input type="checkbox"/>	0.0%	_____
3. _____	0	<input type="checkbox"/>	0.0%	_____
4. _____	0	<input type="checkbox"/>	0.0%	_____
5. _____	0	<input type="checkbox"/>	0.0%	_____
6. _____	0	<input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	0		= Total Cover	
<b>Herb Stratum</b> (Plot Size : <u>30</u> )				
1. <u>Distichlis spicata</u>	25	<input checked="" type="checkbox"/>	50.0%	<u>OBL</u>
2. <u>Paspalum plicatulum</u>	15	<input checked="" type="checkbox"/>	30.0%	<u>FAC</u>
3. <u>Batis maritima</u>	5	<input type="checkbox"/>	10.0%	<u>OBL</u>
4. <u>Rumex crispus</u>	5	<input type="checkbox"/>	10.0%	<u>FAC</u>
5. _____	0	<input type="checkbox"/>	0.0%	_____
6. _____	0	<input type="checkbox"/>	0.0%	_____
7. _____	0	<input type="checkbox"/>	0.0%	_____
8. _____	0	<input type="checkbox"/>	0.0%	_____
9. _____	0	<input type="checkbox"/>	0.0%	_____
10. _____	0	<input type="checkbox"/>	0.0%	_____
11. _____	0	<input type="checkbox"/>	0.0%	_____
12. _____	0	<input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>25</u> 20% of Total Cover: <u>10</u>	50		= Total Cover	
<b>Woody Vine Stratum</b> (Plot Size : <u>30</u> )				
1. _____	0	<input type="checkbox"/>	0.0%	_____
2. _____	0	<input type="checkbox"/>	0.0%	_____
3. _____	0	<input type="checkbox"/>	0.0%	_____
4. _____	0	<input type="checkbox"/>	0.0%	_____
5. _____	0	<input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	0		= Total Cover	

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, ro FAC: 3 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 100.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>30</u>	x 1 = <u>30</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>20</u>	x 3 = <u>60</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
<b>Column Totals:</b> <u>50</u> (A)	<u>90</u> (B)

Prevalence Index = B/A = 1,800

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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**Hydrophytic Vegetation Present ?**      Yes     No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1006\_WET\_PEM\_C

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

Depth (inches)	Matrix			Redox Features			Location <sup>2</sup>	Texture	Remarks
	Color (moist)	%	%	Color (moist)	%	Type <sup>1</sup>			
0 - 16	10YR	5/2	97	10YR	4/6	3	C	PL	Silty Clay

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1006\_WET\_PEM\_D  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Concave      **Slope:** 0 % 0.0 °  
**Subregion (LRR):** LRR T      **Lat:** 27.929525      **Long:** -97.202535      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input checked="" type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>2</u> Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: WP1006\_WET\_PEM\_D

		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : <u>30</u> )				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="checkbox"/>	0.0%
4.	_____	0	<input type="checkbox"/>	0.0%
5.	_____	0	<input type="checkbox"/>	0.0%
6.	_____	0	<input type="checkbox"/>	0.0%
7.	_____	0	<input type="checkbox"/>	0.0%
8.	_____	0	<input type="checkbox"/>	0.0%
50% of Total Cover: <u>0</u>	20% of Total Cover: <u>0</u>	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : <u>30</u> )				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="checkbox"/>	0.0%
4.	_____	0	<input type="checkbox"/>	0.0%
5.	_____	0	<input type="checkbox"/>	0.0%
6.	_____	0	<input type="checkbox"/>	0.0%
7.	_____	0	<input type="checkbox"/>	0.0%
8.	_____	0	<input type="checkbox"/>	0.0%
50% of Total Cover: <u>0</u>	20% of Total Cover: <u>0</u>	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : <u>30</u> )				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="checkbox"/>	0.0%
4.	_____	0	<input type="checkbox"/>	0.0%
5.	_____	0	<input type="checkbox"/>	0.0%
6.	_____	0	<input type="checkbox"/>	0.0%
50% of Total Cover: <u>0</u>	20% of Total Cover: <u>0</u>	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : <u>30</u> )				
1.	<u>Tamarix chinensis</u>	25	<input checked="" type="checkbox"/>	45.5% <u>FACW</u>
2.	<u>Paspalum plicatulum</u>	20	<input checked="" type="checkbox"/>	36.4% <u>FAC</u>
3.	<u>Rumex crispus</u>	10	<input type="checkbox"/>	18.2% <u>FAC</u>
4.	_____	0	<input type="checkbox"/>	0.0%
5.	_____	0	<input type="checkbox"/>	0.0%
6.	_____	0	<input type="checkbox"/>	0.0%
7.	_____	0	<input type="checkbox"/>	0.0%
8.	_____	0	<input type="checkbox"/>	0.0%
9.	_____	0	<input type="checkbox"/>	0.0%
10.	_____	0	<input type="checkbox"/>	0.0%
11.	_____	0	<input type="checkbox"/>	0.0%
12.	_____	0	<input type="checkbox"/>	0.0%
50% of Total Cover: <u>28</u>	20% of Total Cover: <u>11</u>	55	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : <u>30</u> )				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="checkbox"/>	0.0%
4.	_____	0	<input type="checkbox"/>	0.0%
5.	_____	0	<input type="checkbox"/>	0.0%
50% of Total Cover: <u>0</u>	20% of Total Cover: <u>0</u>	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, ro FAC: 2 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 100.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>25</u>	x 2 = <u>50</u>
FAC species <u>30</u>	x 3 = <u>90</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
<b>Column Totals:</b> <u>55</u> (A)	<u>140</u> (B)

Prevalence Index = B/A = 2.545

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

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**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

---

**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1006\_WET\_PEM\_D

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	6/1	100				Silty Clay	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes     No

Remarks:



## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1007\_UP  
**Investigator(s):** B. Bringham & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Flat      **Slope:** 0 % 0.0 °  
**Subregion (LRR):** LRR T      **Lat:** 27.929431      **Long:** -97.200516      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present?      Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are not present. This is not a wetland.	

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): <u>4</u>		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1007\_UP**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Chloris cucullata</u>	50 <input checked="" type="checkbox"/>	60.2%	UPL
2. <u>Andropogon aeerardii</u>	20 <input checked="" type="checkbox"/>	24.1%	FAC
3. <u>Lvsimachia arvensis</u>	5 <input type="checkbox"/>	6.0%	FACU
4. <u>Monanthochloe littoralis</u>	5 <input type="checkbox"/>	6.0%	OBL
5. <u>Batis maritima</u>	3 <input type="checkbox"/>	3.6%	OBL
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 42      20% of Total Cover: 17	83	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, ro FAC: 2 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 100.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species <u>8</u>	x 1 =	<u>8</u>
FACW species <u>0</u>	x 2 =	<u>0</u>
FAC species <u>20</u>	x 3 =	<u>60</u>
FACU species <u>5</u>	x 4 =	<u>20</u>
UPL species <u>50</u>	x 5 =	<u>250</u>
<b>Colum Totals:</b> <u>83</u>	(A)	<u>338</u> (B)

Prevalence Index = B/A = 4,072

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

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**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1007\_UP

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	4/1	100				Silty Clay	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1007\_WET\_PEM  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A T N/A R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Concave      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.929447      **Long:** -97.20073      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** None

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

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

Hydrophytic Vegetation Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present?    Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?    Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?    Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?    Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>2</u> Water Table Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)    Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1007\_WET\_PEM**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Distichlis spicata</u>	25 <input checked="" type="checkbox"/>	35.7%	OBL
2. <u>Paspalum plicatulum</u>	20 <input checked="" type="checkbox"/>	28.6%	FAC
3. <u>Tamarix chinensis</u>	20 <input checked="" type="checkbox"/>	28.6%	FACW
4. <u>Batis maritima</u>	5 <input type="checkbox"/>	7.1%	OBL
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 35      20% of Total Cover: 14	70	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, ro FAC: 1 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 50.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species	<u>30</u>	x 1 = <u>30</u>
FACW species	<u>20</u>	x 2 = <u>40</u>
FAC species	<u>20</u>	x 3 = <u>60</u>
FACU species	<u>0</u>	x 4 = <u>0</u>
UPL species	<u>0</u>	x 5 = <u>0</u>
<b>Column Totals:</b>	<u>83</u> (A)	<u>338</u> (B)

Prevalence Index = B/A = 4,072

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

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**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

---

**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1007\_WET\_PEM

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	5/1	100				Silty Clay	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1008\_UP  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Flat      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.929547      **Long:** -97.197264      **Datum:** NAD 83  
**Soil Map Unit Name:** Aransas clay, saline (As)      **NWI Classification:** PEM1A

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation and hydric soil are not present. This is not a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1008\_UP**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. <u>Prosopis glandulosa</u>	20 <input checked="" type="checkbox"/>	57.1%	UPL
2. <u>Celtis pallida</u>	10 <input checked="" type="checkbox"/>	28.6%	UPL
3. <u>Forestiera angustifolia</u>	5 <input type="checkbox"/>	14.3%	UPL
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 18      20% of Total Cover: 7	35	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Bothriochloa ischaemum var. sonarica</u>	20 <input checked="" type="checkbox"/>	44.4%	UPL
2. <u>Andropogon aequalis</u>	15 <input checked="" type="checkbox"/>	33.3%	FAC
3. <u>Spartina patens</u>	5 <input type="checkbox"/>	11.1%	FACW
4. <u>Lysimachia arvensis</u>	5 <input type="checkbox"/>	11.1%	FACU
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 23      20% of Total Cover: 9	45	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That are OBL, FACW, or FAC: 100.0% (A/B)

**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL species 0 x 1 = 0

FACW species 5 x 2 = 10

FAC species 15 x 3 = 45

FACU species 5 x 4 = 20

UPL species 55 x 5 = 275

Column Totals: 80 (A) 350 (B)

Prevalence Index = B/A = 4.375

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1008\_UP

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	4/1	100				Silty Clay	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1008\_WET\_PEM  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Flat      **Slope:** 0 % 0.0 °  
**Subregion (LRR):** LRR T      **Lat:** 27.929369      **Long:** -97.197471      **Datum:** NAD 83  
**Soil Map Unit Name:** Aransas clay, saline (As)      **NWI Classification:** PEM1A

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

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

Hydrophytic Vegetation Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>1</u> Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1008\_WET\_PEM**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Eleocharis montevidensis</u>	90 <input checked="" type="checkbox"/>	90.0%	FACW
2. <u>Spartina patens</u>	10 <input type="checkbox"/>	10.0%	FACW
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 50      20% of Total Cover: 20	100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That are OBL, FACW, or FAC: 25.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL species 0 x 1 = 0

FACW species 100 x 2 = 200

FAC species 0 x 3 = 0

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column Totals: 80 (A) 350 (B)

Prevalence Index = B/A = 4.375

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

---

**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1008\_WET\_PEM

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	5/1	100				Silty Clay	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes     No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1009\_UP  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Flat      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.9296      **Long:** -97.19653      **Datum:** NAD 83  
**Soil Map Unit Name:** Aransas clay, saline (As)      **NWI Classification:** PEM1A

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation and hydric soil are not present. This is not a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<u>Secondary Indicators (Minimum of 2 required)</u> <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:		
Remarks:		



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1009\_UP**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1.	0	0.0%	
2.	0	0.0%	
3.	0	0.0%	
4.	0	0.0%	
5.	0	0.0%	
6.	0	0.0%	
7.	0	0.0%	
8.	0	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1.	0	0.0%	
2.	0	0.0%	
3.	0	0.0%	
4.	0	0.0%	
5.	0	0.0%	
6.	0	0.0%	
7.	0	0.0%	
8.	0	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. <i>Prosopis glandulosa</i>	20	100.0%	UPL
2.	0	0.0%	
3.	0	0.0%	
4.	0	0.0%	
5.	0	0.0%	
6.	0	0.0%	
50% of Total Cover: 10	20% of Total Cover: 4	20	= Total Cover
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <i>Spartina patens</i>	30	40.0%	FACW
2. <i>Cynodon dactylon</i>	20	26.7%	FACU
3. <i>Eleocharis montevidensis</i>	10	13.3%	FACW
4. <i>Bothriochloa ischaemum var. songarica</i>	10	13.3%	UPL
5. <i>Taraxacum officinale</i>	5	6.7%	FACU
6.	0	0.0%	
7.	0	0.0%	
8.	0	0.0%	
9.	0	0.0%	
10.	0	0.0%	
11.	0	0.0%	
12.	0	0.0%	
50% of Total Cover: 38	20% of Total Cover: 15	75	= Total Cover
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1.	0	0.0%	
2.	0	0.0%	
3.	0	0.0%	
4.	0	0.0%	
5.	0	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That are OBL, FACW, or FAC: 33.3% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of: 95 Multiply by: (A)

OBL species 0 x 1 = 0

FACW species 40 x 2 = 80

FAC species 0 x 3 = 0

FACU species 25 x 4 = 100

UPL species 30 x 5 = 150

Column Totals: 95 (A) 330 (B)

Prevalence Index = B/A = 3.474

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

---

**Hydrophytic Vegetation Present ?** Yes  No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1009\_UP

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	4/1	100				Silty Clay	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes     No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1009\_WET\_PEM  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Flat      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.929905      **Long:** -97.196342      **Datum:** NAD 83  
**Soil Map Unit Name:** Aransas clay, saline (As)      **NWI Classification:** PEM1A

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

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

Hydrophytic Vegetation Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>1</u> Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1009\_WET\_PEM**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Spartina patens</u>	70 <input checked="" type="checkbox"/>	70.0%	FACW
2. <u>Ludwigia palustris</u>	10 <input type="checkbox"/>	10.0%	OBL
3. <u>Eleocharis minima</u>	5 <input type="checkbox"/>	5.0%	OBL
4. <u>Paspalum dlicatulum</u>	5 <input type="checkbox"/>	5.0%	FAC
5. <u>Marsilea macrospora</u>	5 <input type="checkbox"/>	5.0%	OBL
6. <u>Eleocharis montevidensis</u>	5 <input type="checkbox"/>	5.0%	FACW
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 50      20% of Total Cover: 20	100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, ro FAC: 1 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 33.3% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species <u>20</u>	x 1 =	<u>20</u>
FACW species <u>75</u>	x 2 =	<u>150</u>
FAC species <u>5</u>	x 3 =	<u>15</u>
FACU species <u>0</u>	x 4 =	<u>0</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
<b>Column Totals:</b> <u>95</u>	(A)	<u>330</u> (B)

Prevalence Index = B/A = 3.474

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1009\_WET\_PEM

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	5/1	100				Clay	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1010\_UP  
**Investigator(s):** B. Bringham & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Flat      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.930899      **Long:** -97.191252      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** PEM1A

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Wetland hydrology is not present. This is not a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1010\_UP**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. <u>Prosopis glandulosa</u>	15 <input checked="" type="checkbox"/>	42.9%	UPL
2. <u>Baccharis halimifolia</u>	10 <input checked="" type="checkbox"/>	28.6%	FAC
3. <u>Forestiera angustifolia</u>	5 <input type="checkbox"/>	14.3%	UPL
4. <u>Zanthoxylum fagara</u>	5 <input type="checkbox"/>	14.3%	FACU
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 18      20% of Total Cover: 7	35	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Spartina patens</u>	50 <input checked="" type="checkbox"/>	62.5%	FACW
2. <u>Andropogon aequalis</u>	15 <input type="checkbox"/>	18.8%	FAC
3. <u>Lysimachia arvensis</u>	5 <input type="checkbox"/>	6.3%	FACU
4. <u>Helenium amarum</u>	5 <input type="checkbox"/>	6.3%	FACU
5. <u>Geranium carolinianum</u>	5 <input type="checkbox"/>	6.3%	UPL
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 40      20% of Total Cover: 16	80	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

Percent of Dominant Species That are OBL, FACW, or FAC: 66.7% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by: \_\_\_\_\_

OBL species 0 x 1 = 0

FACW species 50 x 2 = 100

FAC species 25 x 3 = 75

FACU species 15 x 4 = 60

UPL species 25 x 5 = 125

Column Totals: 115 (A)      360 (B)

Prevalence Index = B/A = 3.130

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

---

**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1010\_UP

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

Depth (inches)	Matrix			Redox Features			Location <sup>2</sup>	Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type <sup>1</sup>			
0 - 16	10YR	3/1	97	10YR	5/6	3	C	PL, M	Sandy Clay

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1010\_WET\_PEM  
**Investigator(s):** B. Bringham & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Concave      **Slope:** 2 % 1.1 °  
**Subregion (LRR):** LRR T      **Lat:** 27.930892      **Long:** -97.190491      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** PEM1A

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>1</u> Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			

**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1010\_WET\_PEM**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. <u>Baccharis halimifolia</u>	5 <input checked="" type="checkbox"/>	100.0%	FAC
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 2.5      20% of Total Cover: 1	5	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Spartina patens</u>	85 <input checked="" type="checkbox"/>	85.0%	FACW
2. <u>Borrhichia frutescens</u>	5 <input type="checkbox"/>	5.0%	OBL
3. <u>Ludwigia palustris</u>	5 <input type="checkbox"/>	5.0%	OBL
4. <u>Paspalum plicatulum</u>	5 <input type="checkbox"/>	5.0%	FAC
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 50      20% of Total Cover: 20	100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, ro FAC: 2 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 66.7% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species	<u>10</u>	x 1 = <u>10</u>
FACW species	<u>85</u>	x 2 = <u>170</u>
FAC species	<u>10</u>	x 3 = <u>30</u>
FACU species	<u>0</u>	x 4 = <u>0</u>
UPL species	<u>0</u>	x 5 = <u>0</u>
<b>Column Totals:</b>	<u>105</u> (A)	<u>210</u> (B)

Prevalence Index = B/A = 2,000

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

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**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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**Hydrophytic Vegetation Present ?**      Yes       No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1010\_WET\_PEM

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

Depth (inches)	Matrix			Redox Features			Location <sup>2</sup>	Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type <sup>1</sup>			
0 - 16	10YR	4/1	97	10YR	4/6	3	C	PL	Silty Clay

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



# WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1011\_UP  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Flat      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.930915      **Long:** -97.191769      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** PEM1A

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation and hydric soil are not present. This is not a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)		<u>Secondary Indicators (Minimum of 2 required)</u> <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:		
Remarks:		



**VEGETATION (Five/Four Strata) - Use scientific names of plants.**

Sampling Point: **WP1011\_UP**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1.	0	0.0%	
2.	0	0.0%	
3.	0	0.0%	
4.	0	0.0%	
5.	0	0.0%	
6.	0	0.0%	
7.	0	0.0%	
8.	0	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1.	0	0.0%	
2.	0	0.0%	
3.	0	0.0%	
4.	0	0.0%	
5.	0	0.0%	
6.	0	0.0%	
7.	0	0.0%	
8.	0	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. <i>Prosopis glandulosa</i>	15	60.0%	UPL
2. <i>Celtis pallida</i>	10	40.0%	UPL
3.	0	0.0%	
4.	0	0.0%	
5.	0	0.0%	
6.	0	0.0%	
50% of Total Cover: 13	20% of Total Cover: 5	25	= Total Cover
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <i>Chloris cucullata</i>	40	44.4%	UPL
2. <i>Opuntia lindheimeri</i>	10	11.1%	UPL
3. <i>Panicum virgatum</i>	10	11.1%	FAC
4. <i>Prosopis glandulosa</i>	10	11.1%	UPL
5. <i>Lvsimachia arvensis</i>	10	11.1%	FACU
6. <i>Oenothera speciosa</i>	5	5.6%	UPL
7. <i>Borrchia frutescens</i>	5	5.6%	OBL
8.	0	0.0%	
9.	0	0.0%	
10.	0	0.0%	
11.	0	0.0%	
12.	0	0.0%	
50% of Total Cover: 45	20% of Total Cover: 18	90	= Total Cover
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1.	0	0.0%	
2.	0	0.0%	
3.	0	0.0%	
4.	0	0.0%	
5.	0	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, ro FAC: 2 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 100.0% (A/B)

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species	5	x 1 = 5
FACW species	0	x 2 = 0
FAC species	10	x 3 = 30
FACU species	10	x 4 = 40
UPL species	90	x 5 = 450
<b>Column Totals:</b>	<b>115</b> (A)	<b>525</b> (B)

Prevalence Index = B/A = 4,565

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0<sup>1</sup>

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

**<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or**

---

**Definition of Vegetation Strata:**

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1m) tall.

Shrub - Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

---

**Hydrophytic Vegetation Present ?** Yes  No

Remarks: (If observed, list morphological adaptations below).

\*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

**SOIL**

Sampling Point: WP1011\_UP

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	4/1	100				Silty Clay	

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

**Hydric Soil Indicators:**

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- Organic Bodies (A6) (LRR P, T, U)
- 5 cm Mucky Mineral (A7) (LRR P, T, U)
- Muck Presence (A8) (LRR U)
- 1 cm Muck (A9) (LRR P, T)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Coast Prairie Redox (A16) (MLRA 150A)
- Sandy Muck Mineral (S1) (LRR O, S)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7) (LRR P, S, T, U)

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

- Polyvalue Below Surface (S8) (LRR S, T, U)
- Thin Dark Surface (S9) (LRR S, T, U)
- Loamy Mucky Mineral (F1) (LRR O)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Marl (F10) (LRR U)
- Depleted Ochric (F11) (MLRA 151)
- Iron-Manganese Masses (F12) (LRR O, P, T)
- Umbric Surface (F13) (LRR P, T, U)
- Delta Ochric (F17) (MLRA 151)
- Reduced Vertic (F18) (MLRA 150A, 150B)
- Piedmont Floodplain Soils (F19) (MLRA 149A)
- Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)
- 1 cm Muck (A9) (LRR O)
- 2 cm Muck (A10) (LRR S)
- Reduced Vertic (F18) (outside MLRA 150A,B)
- Piedmont Floodplain Soils (F19) (LRR P, S, T)
- Anomalous Bright Loamy Soils (F20) (MLRA 153B)
- Red Parent Material (TF2)
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:



## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1011\_WET\_PEM  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A T N/A R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Concave      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.930885      **Long:** -97.191421      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** PEM1A

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

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

Hydrophytic Vegetation Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Hydric Soil Present?    Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?    Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?    Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?    Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>1</u> Water Table Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)    Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			