

**SOIL**

Sampling Point: WP1022\_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	4/1	95	10YR	5/6	5	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:** 2/11/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1022\_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:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.933697      **Long:** -97.174666      **Datum:** NAD 83  
**Soil Map Unit Name:** Aransas clay, saline (As)      **NWI Classification:** PEM1J

**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 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>3</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: WP1022\_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	= 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>Eleocharis montevidensis</u>	30	<input checked="" type="checkbox"/>	42.9% <u>FACW</u>
2.	<u>Distichlis spicata</u>	30	<input checked="" type="checkbox"/>	42.9% <u>OBL</u>
3.	<u>Spartina patens</u>	10	<input type="checkbox"/>	14.3% <u>FACW</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>35</u>	20% of Total Cover: <u>14</u>	70	= 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, 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>30</u>	x 1 = <u>30</u>
FACW species <u>40</u>	x 2 = <u>80</u>
FAC species <u>0</u>	x 3 = <u>0</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>70</u> (A)	<u>110</u> (B)

Prevalence Index = B/A = 1.571

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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: WP1022\_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				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, 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:** 2/11/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1023\_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:** 27.932757      **Long:** -97.173015      **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: **WP1023\_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>	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>	45 <input checked="" type="checkbox"/>	45.0%	FACU
2. <u>Distichlis spicata</u>	30 <input checked="" type="checkbox"/>	30.0%	OBL
3. <u>Spartina patens</u>	15 <input type="checkbox"/>	15.0%	FACW
4. <u>Bothriochloa ischaemum var. songarica</u>	10 <input type="checkbox"/>	10.0%	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: 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>30</u>	x 1 =	<u>30</u>
FACW species <u>15</u>	x 2 =	<u>30</u>
FAC species <u>0</u>	x 3 =	<u>0</u>
FACU species <u>45</u>	x 4 =	<u>180</u>
UPL species <u>20</u>	x 5 =	<u>100</u>
<b>Column Totals:</b> <u>110</u>	(A)	<u>340</u> (B)

Prevalence Index = B/A = 3.091

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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: WP1023\_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:** 2/11/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1023\_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:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.932784      **Long:** -97.172911      **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>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: **WP1023\_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>	65 <input checked="" type="checkbox"/>	68.4%	OBL
2. <u>Distichlis spicata</u>	30 <input checked="" type="checkbox"/>	31.6%	OBL
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: 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>95</u>	x 1 =	<u>95</u>
FACW species <u>0</u>	x 2 =	<u>0</u>
FAC species <u>0</u>	x 3 =	<u>0</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>340</u> (B)

Prevalence Index = B/A = 3.091

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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: WP1023\_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	3/1	97	10YR	5/6	3	C	PL, M	Silty 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)

- 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:** 2/11/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1024\_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:** 27.932413      **Long:** -97.17199      **Datum:** NAD 83  
**Soil Map Unit Name:** Dietrich loamy fine sand, 0 to 1 percent slopes, very rarely flooded (Dt)      **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: **WP1024\_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.	<i>Prosopis glandulosa</i> _____	40	<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: 20	20% of Total Cover: 8	40	= Total Cover	
<b>Herb Stratum</b> (Plot Size : 30 )				
1.	<i>Borrhichia frutescens</i> _____	15	<input checked="" type="checkbox"/>	30.0% OBL
2.	<i>Taraxacum officinale</i> _____	10	<input checked="" type="checkbox"/>	20.0% FACU
3.	<i>Ambrosia artemisiifolia</i> _____	10	<input checked="" type="checkbox"/>	20.0% FACU
4.	<i>Galium aparine</i> _____	5	<input type="checkbox"/>	10.0% FACU
5.	<i>Opuntia lindheimeri</i> _____	5	<input type="checkbox"/>	10.0% UPL
6.	<i>Oenothera speciosa</i> _____	5	<input type="checkbox"/>	10.0% UPL
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: 25	20% of Total Cover: 10	50	= 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, ro 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 <u>15</u>	x 1 = <u>15</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>25</u>	x 4 = <u>100</u>
UPL species <u>50</u>	x 5 = <u>250</u>
<b>Column Totals:</b> <u>90</u> (A)	<u>365</u> (B)
Prevalence Index = B/A = <u>4,056</u>	

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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: WP1024\_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 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:** 2/11/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1024\_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:** 27.93251      **Long:** -97.172076      **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: **WP1024\_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>	60 <input checked="" type="checkbox"/>	75.0%	OBL
2. <u>Spartina patens</u>	20 <input checked="" type="checkbox"/>	25.0%	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: 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, ro 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 <u>60</u>	x 1 =	<u>60</u>
FACW species <u>20</u>	x 2 =	<u>40</u>
FAC species <u>0</u>	x 3 =	<u>0</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>365</u> (B)

Prevalence Index = B/A = 4,056

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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: WP1024\_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	4/2	97	10YR	5/6	3	C	M	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)

- 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:** 2/11/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1025\_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:** 27.930762      **Long:** -97.169783      **Datum:** NAD 83  
**Soil Map Unit Name:** Dietrich loamy fine sand, 0 to 1 percent slopes, very rarely flooded (Dt)      **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> <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: **WP1025\_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.	<i>Prosopis glandulosa</i> _____	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	= Total Cover	
<b>Herb Stratum</b> (Plot Size : 30 )				
1.	<i>Panicum virgatum</i> _____	70	<input checked="" type="checkbox"/>	70.0% FAC
2.	<i>Cynodon dactylon</i> _____	25	<input checked="" type="checkbox"/>	25.0% FACU
3.	<i>Medicago lupulina</i> _____	5	<input type="checkbox"/>	5.0% 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: 50	20% of Total Cover: 20	100	= 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: 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>0</u>	x 2 = <u>0</u>
FAC species <u>70</u>	x 3 = <u>210</u>
FACU species <u>25</u>	x 4 = <u>100</u>
UPL species <u>15</u>	x 5 = <u>75</u>
<b>Column Totals:</b> <u>110</u> (A)	<u>385</u> (B)

Prevalence Index = B/A = 3.500

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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.

---

**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: WP1025\_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:** 2/11/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1025\_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:** 27.93072      **Long:** -97.16993      **Datum:** NAD 83  
**Soil Map Unit Name:** Dietrich loamy fine sand, 0 to 1 percent slopes, very rarely flooded (Dt)      **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"/>
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**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 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 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"/>
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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: **WP1025\_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>Marsilea macrospora</u>	10 <input checked="" type="checkbox"/>	40.0%	OBL
2. <u>Rumex crispus</u>	10 <input checked="" type="checkbox"/>	40.0%	FAC
3. <u>Eleocharis montevidensis</u>	5 <input checked="" type="checkbox"/>	20.0%	FACW
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: 13      20% of Total Cover: 5	25	<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>10</u>	x 1 =	<u>10</u>
FACW species <u>5</u>	x 2 =	<u>10</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>110</u>	(A)	<u>385</u> (B)

Prevalence Index = B/A = 3.500

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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**

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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: WP1025\_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	4/2	97	10YR	5/6	3	C	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:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1026\_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:** 27.930156      **Long:** -97.169035      **Datum:** NAD 83  
**Soil Map Unit Name:** Dietrich loamy fine sand, 0 to 1 percent slopes, very rarely flooded (Dt)      **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: **WP1026\_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>	60 <input checked="" type="checkbox"/>	66.7%	FACU
2. <u>Eleocharis montevidensis</u>	15 <input type="checkbox"/>	16.7%	FACW
3. <u>Geranium carolinianum</u>	10 <input type="checkbox"/>	11.1%	UPL
4. <u>Lvsimachia arvensis</u>	5 <input type="checkbox"/>	5.6%	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: 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 0 x 3 = 0

FACU species 65 x 4 = 260

UPL species 10 x 5 = 50

Column Totals: 90 (A) 340 (B)

Prevalence Index = B/A = 3.778

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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: WP1026\_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				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:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1026\_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:** 27.930122      **Long:** -97.169077      **Datum:** NAD 83  
**Soil Map Unit Name:** Dietrich loamy fine sand, 0 to 1 percent slopes, very rarely flooded (Dt)      **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 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>5</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: **WP1026\_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>Sesbania drummondii</u>	10 <input checked="" type="checkbox"/>	50.0%	FACW
2. <u>Marsilea macropoda</u>	10 <input checked="" type="checkbox"/>	50.0%	OBL
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: 10      20% of Total Cover: 4	20	<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: 1 (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>10</u> x 1 =	<u>10</u>
FACW species	<u>10</u> x 2 =	<u>20</u>
FAC species	<u>0</u> x 3 =	<u>0</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>340</u> (B)

Prevalence Index = B/A = 3.778

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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: WP1026\_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				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:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1027\_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:** 27.930223      **Long:** -97.166899      **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 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: 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> <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: **WP1027\_UP**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. <u>Quercus virginiana</u>	50 <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>25</u> 20% of Total Cover: <u>10</u>	50	<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>Heterotheca subaxillaris</u>	30 <input checked="" type="checkbox"/>	66.7%	UPL
2. <u>Taraxacum officinale</u>	10 <input checked="" type="checkbox"/>	22.2%	FACU
3. <u>Ilex vomitoria</u>	5 <input type="checkbox"/>	11.1%	FAC
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>23</u> 20% of Total Cover: <u>9</u>	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: <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: 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 5 x 3 = 15

FACU species 60 x 4 = 240

UPL species 30 x 5 = 150

Column Totals: 95 (A)    405 (B)

Prevalence Index = B/A = 4.263

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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: WP1027\_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	95	10YR	5/6	5	C	M	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)

- 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:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1027\_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:** 27.930128      **Long:** -97.166412      **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 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> <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>6</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: **WP1027\_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>Panicum virgaatum</u>	30 <input checked="" type="checkbox"/>	40.0%	FAC
2. <u>Eleocharis montevidensis</u>	25 <input checked="" type="checkbox"/>	33.3%	FACW
3. <u>Ludwigia palustris</u>	20 <input checked="" type="checkbox"/>	26.7%	OBL
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: 38      20% of Total Cover: 15	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: 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>20</u>	x 1 = <u>20</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>95</u> (A)	<u>405</u> (B)

Prevalence Index = B/A = 4.263

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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: WP1027\_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	6/1	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)

- 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:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1028\_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:** 27.929505      **Long:** -97.166002      **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 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: 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: **WP1028\_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>Quercus virginiana</i>	10	100.0%	FACU
2.	0	0.0%	
3.	0	0.0%	
4.	0	0.0%	
5.	0	0.0%	
6.	0	0.0%	
50% of Total Cover: 5	20% of Total Cover: 2	10	= Total Cover
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <i>Evax candida</i>	25	27.8%	UPL
2. <i>Schizachyrium scrobarium</i>	25	27.8%	FACU
3. <i>Dichantherium oligosanthes</i>	10	11.1%	FACU
4. <i>Dichantherium acuminatum</i>	10	11.1%	FAC
5. <i>Andropogon virginicus</i>	5	5.6%	FAC
6. <i>Eleocharis montevidensis</i>	5	5.6%	FACW
7. <i>Chloris cucullata</i>	5	5.6%	UPL
8. <i>Andropogon alomeratus</i>	5	5.6%	FACW
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, 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: 100 Multiply by: (A)

OBL species 0 x 1 = 0

FACW species 10 x 2 = 20

FAC species 15 x 3 = 45

FACU species 45 x 4 = 180

UPL species 30 x 5 = 150

Column Totals: 100 (A) 395 (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.

---

**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: WP1028\_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	6/2	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:** San Patricio      **Sampling Date:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1028\_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:** 27.929435      **Long:** -97.16615      **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 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> <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>6</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: **WP1028\_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>	50 <input checked="" type="checkbox"/>	66.7%	FACW
2. <u>Ludwigia palustris</u>	10 <input type="checkbox"/>	13.3%	OBL
3. <u>Andropogon olomeratus</u>	10 <input type="checkbox"/>	13.3%	FACW
4. <u>Sesbania herbacea</u>	5 <input type="checkbox"/>	6.7%	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: 38      20% of Total Cover: 15	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: 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>10</u>	x 1 = <u>10</u>
FACW species	<u>65</u>	x 2 = <u>130</u>
FAC species	<u>0</u>	x 3 = <u>0</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: WP1028\_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	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:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1029\_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):** Convex      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.929117      **Long:** -97.16442      **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 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 checked="" 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 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: **WP1029\_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>Quercus virginiana</u>	15 <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%	_____
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>Schizachyrium scoparium</u>	70 <input checked="" type="checkbox"/>	82.4%	FACU
2. <u>Andropogon virginicus</u>	15 <input type="checkbox"/>	17.6%	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: 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, ro 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 0 x 2 = 0

FAC species 15 x 3 = 45

FACU species 85 x 4 = 340

UPL species 0 x 5 = 0

Column Totals: 100 (A)      385 (B)

Prevalence Index = B/A = 3.850

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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: WP1029\_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	6/1	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:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1029\_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:** 27.929076      **Long:** -97.164303      **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 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> <input checked="" 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 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>8</u> Water Table Present?    Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present?    Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u> (includes capillary fringe)	<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: **WP1029\_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>Ludwigia palustris</u>	15 <input checked="" type="checkbox"/>	33.3%	OBL
2. <u>Eleocharis montevidensis</u>	15 <input checked="" type="checkbox"/>	33.3%	FACW
3. <u>Rhynchospora caduca</u>	10 <input checked="" type="checkbox"/>	22.2%	OBL
4. <u>Andropogon alomeratus</u>	5 <input type="checkbox"/>	11.1%	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: 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: 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 <u>25</u>	x 1 =	<u>25</u>
FACW species <u>20</u>	x 2 =	<u>40</u>
FAC species <u>0</u>	x 3 =	<u>0</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>385</u> (B)

Prevalence Index = B/A = 3.850

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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: WP1029\_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				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:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1029\_WET\_PSS  
**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:** 27.929045      **Long:** -97.164363      **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 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 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 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>10</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: **WP1029\_WET\_PSS**

		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.	Triadica sebifera	40	<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: 20	20% of Total Cover: 8	40	= Total Cover	
<b>Herb Stratum</b> (Plot Size : 30 )				
1.	Ludwigia palustris	10	<input checked="" type="checkbox"/>	100.0% OBL
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: 5	20% of Total Cover: 2	10	= 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: 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>10</u>	x 1 = <u>10</u>
FACW species <u>0</u>	x 2 = <u>0</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>50</u> (A)	<u>130</u> (B)

Prevalence Index = B/A = 2,600

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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: WP1029\_WET\_PSS

**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 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:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1030\_WET\_PSS  
**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:** 27.929213      **Long:** -97.164421      **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 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 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 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>8</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: **WP1030\_WET\_PSS**

	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>Triadica sebifera</u>	40 <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: 20      20% of Total Cover: 8	40	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Ludwigia palustris</u>	10 <input checked="" type="checkbox"/>	66.7%	OBL
2. <u>Eleocharis montevidensis</u>	5 <input checked="" type="checkbox"/>	33.3%	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: 7.5      20% of Total Cover: 3	15	<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>10</u>	x 1 =	<u>10</u>
FACW species <u>5</u>	x 2 =	<u>10</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>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**

---

**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: WP1030\_WET\_PSS

**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 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:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1031\_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:** 0 % 0.0 °  
**Subregion (LRR):** LRR T      **Lat:** 27.929308      **Long:** -97.164202      **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 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: 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> <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: **WP1031\_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>Quercus virginiana</u>	15 <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%	_____
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>Schizachyrium scobarium</u>	40 <input checked="" type="checkbox"/>	57.1%	FACU
2. <u>Cynodon dactylon</u>	15 <input checked="" type="checkbox"/>	21.4%	FACU
3. <u>Andropogon virginicus</u>	15 <input checked="" type="checkbox"/>	21.4%	FAC
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: 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, 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 0 x 2 = 0

FAC species 15 x 3 = 45

FACU species 70 x 4 = 280

UPL species 0 x 5 = 0

Column Totals: 85 (A)      325 (B)

Prevalence Index = B/A = 3.824

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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: WP1031\_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	6/1	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:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1031\_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:** 27.929302      **Long:** -97.16409      **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 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> <input checked="" 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 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: **WP1031\_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 virginicus</u>	40 <input checked="" type="checkbox"/>	72.7%	FAC
2. <u>Eleocharis montevidensis</u>	10 <input type="checkbox"/>	18.2%	FACW
3. <u>Rhynchospora caduca</u>	5 <input type="checkbox"/>	9.1%	OBL
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: 28      20% of Total Cover: 11	55	<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: 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 <u>5</u>	x 1 =	<u>5</u>
FACW species <u>10</u>	x 2 =	<u>20</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>85</u>	(A)	<u>325</u> (B)

Prevalence Index = B/A = 3.824

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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: WP1031\_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	7/2	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:** San Patricio      **Sampling Date:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1032\_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:** 27.929641      **Long:** -97.164668      **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 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: 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> <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: **WP1032\_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>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%	_____
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>Schizachyrium scoparium</u>	70 <input checked="" type="checkbox"/>	82.4%	FACU
2. <u>Cynodon dactylon</u>	10 <input type="checkbox"/>	11.8%	FACU
3. <u>Evax candida</u>	5 <input type="checkbox"/>	5.9%	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: 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 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 85 x 4 = 340

UPL species 5 x 5 = 25

Column Totals: 90 (A) 365 (B)

Prevalence Index = B/A = 4,056

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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: WP1032\_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	5/1	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:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1032\_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:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.929694      **Long:** -97.164744      **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 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> <input checked="" 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 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>4</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: **WP1032\_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>Rhynchospora caduca</u>	5 <input type="checkbox"/>	5.0%	OBL
3. <u>Andropogon virginicus</u>	5 <input type="checkbox"/>	5.0%	FAC
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: 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 <u>5</u>	x 1 =	<u>5</u>
FACW species <u>90</u>	x 2 =	<u>180</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>90</u>	(A)	<u>365</u> (B)

Prevalence Index = B/A = 4,056

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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: WP1032\_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	6/1	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:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1033\_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:** 27.929184      **Long:** -97.162512      **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 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>4</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: **WP1033\_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>Quercus virginiana</u>	15 <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%	_____
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>Schizachyrium scoparium</u>	80 <input checked="" type="checkbox"/>	84.2%	FACU
2. <u>Eleocharis montevidensis</u>	10 <input type="checkbox"/>	10.5%	FACW
3. <u>Evax candida</u>	5 <input type="checkbox"/>	5.3%	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: 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, 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)

**Prevalence Index worksheet:**

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

OBL species 0 x 1 = 0

FACW species 10 x 2 = 20

FAC species 0 x 3 = 0

FACU species 95 x 4 = 380

UPL species 5 x 5 = 25

Column Totals: 110 (A)      425 (B)

Prevalence Index = B/A = 3.864

**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: WP1033\_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 - 0	10YR	7/2	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:** San Patricio      **Sampling Date:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1033\_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:** 27.929513      **Long:** -97.162516      **Datum:** NAD 83  
**Soil Map Unit Name:** Galveston-Mustang complex, 0 to 3 percent slopes, occasionally flooded (GM)      **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> <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 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 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: **WP1033\_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 minima</u>	65 <input checked="" type="checkbox"/>	65.0%	OBL
2. <u>Cynodon dactylon</u>	20 <input checked="" type="checkbox"/>	20.0%	FACU
3. <u>Ludwigia palustris</u>	15 <input type="checkbox"/>	15.0%	OBL
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: 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 <u>80</u>	x 1 =	<u>80</u>
FACW species <u>0</u>	x 2 =	<u>0</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>110</u>	(A)	<u>425</u> (B)

Prevalence Index = B/A = 3.864

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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: WP1033\_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	7/2	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:** San Patricio      **Sampling Date:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1034\_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):** Convex      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.928831      **Long:** -97.161918      **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 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>		<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: **WP1034\_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>Schizachyrium scoparium</u>	55 <input checked="" type="checkbox"/>	57.9%	FACU
2. <u>Andropogon virginicus</u>	20 <input checked="" type="checkbox"/>	21.1%	FAC
3. <u>Evax candida</u>	10 <input type="checkbox"/>	10.5%	UPL
4. <u>Dichanthelium acuminatum</u>	10 <input type="checkbox"/>	10.5%	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: 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: 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 55 x 4 = 220

UPL species 10 x 5 = 50

Column Totals: 100 (A) 160 (B)

Prevalence Index = B/A = 1,600

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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: WP1034\_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	7/1	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:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1034\_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:** 27.928948      **Long:** -97.161895      **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 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> <input checked="" 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 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 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: **WP1034\_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>Cynodon dactylon</u>	25 <input checked="" type="checkbox"/>	25.0%	FACU
3. <u>Ludwigia palustris</u>	15 <input type="checkbox"/>	15.0%	OBL
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: 2 (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	15	x 1 = 15
FACW species	60	x 2 = 120
FAC species	0	x 3 = 0
FACU species	25	x 4 = 100
UPL species	0	x 5 = 0
<b>Column Totals:</b>	<b>95</b> (A)	<b>360</b> (B)

Prevalence Index = B/A = 3.789

**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: WP1034\_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	7/2	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:** San Patricio      **Sampling Date:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1035\_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:** 27.928842      **Long:** -97.16293      **Datum:** NAD 83  
**Soil Map Unit Name:** Galveston-Mustang complex, 0 to 3 percent slopes, occasionally flooded (GM)      **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 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: **WP1035\_UP**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. <u>Populus deltoides</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%	
7. _____	0	<input type="checkbox"/> 0.0%	
8. _____	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>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>Helianthus annuus</u>	30	<input checked="" type="checkbox"/> 35.3%	FAC
2. <u>Parietaria pensylvanica</u>	20	<input checked="" type="checkbox"/> 23.5%	FACU
3. <u>Solanum triquetrum</u>	20	<input checked="" type="checkbox"/> 23.5%	UPL
4. <u>Schizachyrium scoparium</u>	10	<input type="checkbox"/> 11.8%	FACU
5. <u>Eleocharis montevidensis</u>	5	<input type="checkbox"/> 5.9%	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: <u>43</u> 20% of Total Cover: <u>17</u>	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: <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: 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 40 x 3 = 120

FACU species 30 x 4 = 120

UPL species 20 x 5 = 100

Column Totals: 100 (A)    235 (B)

Prevalence Index = B/A = 2.350

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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: WP1035\_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)	%	Type <sup>1</sup>	Location <sup>2</sup>		
0 - 2	10YR	2/1	100				Sandy Loam	
2 - 16	7.5YR	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:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1035\_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:** 27.928782      **Long:** -97.162842      **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 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> <input checked="" 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 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: **WP1035\_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>	40 <input checked="" type="checkbox"/>	53.3%	FACW
2. <u>Panicum virgatum</u>	20 <input checked="" type="checkbox"/>	26.7%	FAC
3. <u>Andropogon glomeratus</u>	10 <input type="checkbox"/>	13.3%	FACW
4. <u>Sesbania herbacea</u>	5 <input type="checkbox"/>	6.7%	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: 38      20% of Total Cover: 15	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: 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: 4 (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>0</u>	x 1 =	<u>0</u>
FACW species <u>55</u>	x 2 =	<u>110</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>95</u>	(A)	<u>350</u> (B)

Prevalence Index = B/A = 3.684

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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: WP1035\_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	7/2	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:** San Patricio      **Sampling Date:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1036\_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:** 27.928845      **Long:** -97.16261      **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 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: 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> <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: **WP1036\_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>Schizachyrium scoparium</u>	50 <input checked="" type="checkbox"/>	55.6%	FACU
2. <u>Heterotheca subaxillaris</u>	30 <input checked="" type="checkbox"/>	33.3%	UPL
3. <u>Panicum villosum</u>	10 <input type="checkbox"/>	11.1%	FAC
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: 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: 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 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 10 x 3 = 30

FACU species 50 x 4 = 200

UPL species 30 x 5 = 150

Column Totals: 90 (A) 380 (B)

Prevalence Index = B/A = 4.222

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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: WP1036\_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	6/2	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:** San Patricio      **Sampling Date:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1036\_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:** 27.928841      **Long:** -97.162668      **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 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> <input checked="" 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 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>3</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: **WP1036\_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>Paspalum blicatulum</u>	40	<input checked="" type="checkbox"/>	57.1% <u>FAC</u>
2.	<u>Eleocharis montevidensis</u>	20	<input checked="" type="checkbox"/>	28.6% <u>FACW</u>
3.	<u>Ludwigia palustris</u>	10	<input type="checkbox"/>	14.3% <u>OBL</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: 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: 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 <u>10</u>	x 1 = <u>10</u>
FACW species <u>20</u>	x 2 = <u>40</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>90</u> (A)	<u>380</u> (B)

Prevalence Index = B/A= 4.222

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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: WP1036\_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	7/1	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:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1037\_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):** Concave      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.928988      **Long:** -97.16262      **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 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: 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> <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?    Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ (includes capillary fringe)	<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: **WP1037\_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>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%	_____
50% of Total Cover: 13      20% of Total Cover: 5	25	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Schizachyrium scobarium</u>	65 <input checked="" type="checkbox"/>	72.2%	FACU
2. <u>Panicum virgatum</u>	15 <input type="checkbox"/>	16.7%	FAC
3. <u>Smilax bona-nox</u>	10 <input type="checkbox"/>	11.1%	FAC
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: 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: 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)

**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>25</u>	x 3 =	<u>75</u>
FACU species <u>90</u>	x 4 =	<u>360</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
<b>Column Totals:</b> <u>115</u>	(A)	<u>435</u> (B)

Prevalence Index = B/A = 3.783

**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: WP1037\_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	6/2	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:** San Patricio      **Sampling Date:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1037\_WET\_PSS  
**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:** 27.928953      **Long:** -97.162727      **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 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> <input checked="" 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 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>8</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: **WP1037\_WET\_PSS**

	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>Cephalanthus occidentalis</u>	30 <input checked="" type="checkbox"/>	100.0%	OBL
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: 15      20% of Total Cover: 6	30	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Andropogon virginicus</u>	10 <input checked="" type="checkbox"/>	66.7%	FAC
2. <u>Eleocharis montevidensis</u>	5 <input checked="" type="checkbox"/>	33.3%	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: 7.5      20% of Total Cover: 3	15	<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 <u>30</u>	x 1 =	<u>30</u>
FACW species <u>5</u>	x 2 =	<u>10</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>115</u>	(A)	<u>435</u> (B)

Prevalence Index = B/A = 3.783

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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: WP1037\_WET\_PSS

**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	7/2	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:** San Patricio      **Sampling Date:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1038\_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):** Convex      **Slope:** 2 %      1.1 °  
**Subregion (LRR):** LRR T      **Lat:** 27.928726      **Long:** -97.159719      **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 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: 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> <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: **WP1038\_UP**

		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )				
1.	<u>Quercus virginiana</u>	30	<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>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>Ilex vomitoria</u>	15	<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>7.5</u> 20% of Total Cover: <u>3</u>		15	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )				
1.	<u>Taraxacum officinale</u>	10	<input checked="" type="checkbox"/> 40.0%	FACU
2.	<u>Schizachyrium scoparium</u>	10	<input checked="" type="checkbox"/> 40.0%	FACU
3.	<u>Heterotheca subaxillaris</u>	5	<input checked="" type="checkbox"/> 20.0%	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>13</u> 20% of Total Cover: <u>5</u>		25	<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: 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 0 x 2 = 0

FAC species 15 x 3 = 45

FACU species 50 x 4 = 200

UPL species 5 x 5 = 25

Column Totals: 70 (A)    270 (B)

Prevalence Index = B/A = 3.857

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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: WP1038\_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	6/1	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:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1038\_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:** 27.928678      **Long:** -97.159969      **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 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> <input checked="" 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 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: **WP1038\_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 minima</u>	35 <input checked="" type="checkbox"/>	77.8%	OBL
2. <u>Ludwigia palustris</u>	10 <input checked="" type="checkbox"/>	22.2%	OBL
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: 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, ro FAC: 1 (A)

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

Percent of Dominant Species That are OBL, FACW, or FAC: 20.0% (A/B)

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**Prevalence Index worksheet:**

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

OBL species 45 x 1 = 45

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column Totals: 70 (A) 270 (B)

Prevalence Index = B/A = 3.857

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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: WP1038\_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	6/1	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:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1039\_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:** 27.928464      **Long:** -97.159742      **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 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: 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> <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: **WP1039\_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>	95 <input checked="" type="checkbox"/>	95.0%	FACU
2. <u>Eleocharis montevidensis</u>	5 <input type="checkbox"/>	5.0%	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: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (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>0</u>	x 1 =	<u>0</u>
FACW species <u>5</u>	x 2 =	<u>10</u>
FAC species <u>0</u>	x 3 =	<u>0</u>
FACU species <u>95</u>	x 4 =	<u>380</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
<b>Column Totals:</b> <u>100</u>	(A)	<u>390</u> (B)

Prevalence Index = B/A = 3.900

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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: WP1039\_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	5/1	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:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1039\_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:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.928255      **Long:** -97.159943      **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 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> <input checked="" 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 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: **WP1039\_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 minima</u>	40 <input checked="" type="checkbox"/>	100.0%	OBL
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: 20      20% of Total Cover: 8	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: 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: 1 (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>40</u>	x 1 =	<u>40</u>
FACW species <u>0</u>	x 2 =	<u>0</u>
FAC species <u>0</u>	x 3 =	<u>0</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>390</u> (B)

Prevalence Index = B/A = 3.900

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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: WP1039\_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	7/1	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:** 2/12/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1040\_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:** 27.928477      **Long:** -97.158836      **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 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> <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?    Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ (includes capillary fringe)	<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: **WP1040\_UP**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. <u>Quercus virginiana</u>	45 <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>23</u> 20% of Total Cover: <u>9</u>	45	<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>Eriacron philadelphicus</u>	15 <input checked="" type="checkbox"/>	60.0%	FAC
2. <u>Dichantheium oligosanthes</u>	10 <input checked="" type="checkbox"/>	40.0%	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%	
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>13</u> 20% of Total Cover: <u>5</u>	25	<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: 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 15 x 3 = 45

FACU species 55 x 4 = 220

UPL species 0 x 5 = 0

Colum Totals: 70 (A) 265 (B)

Prevalence Index = B/A = 3.786

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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: WP1040\_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				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: