

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

Sampling Point: **WP1011\_WET\_PEM**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. <u>Baccharis halimifolia</u>	5 <input checked="" type="checkbox"/>	100.0%	FAC
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 2.5      20% of Total Cover: 1	5	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Spartina patens</u>	70 <input checked="" type="checkbox"/>	70.0%	FACW
2. <u>Borrichia frutescens</u>	15 <input type="checkbox"/>	15.0%	OBL
3. <u>Ludwigia palustris</u>	10 <input type="checkbox"/>	10.0%	OBL
4. <u>Marsilea macrospora</u>	5 <input type="checkbox"/>	5.0%	OBL
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 50      20% of Total Cover: 20	100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That are OBL, FACW, or FAC: 14.3% (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>70</u>	x 2 =	<u>140</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>115</u>	(A)	<u>525</u> (B)

Prevalence Index = B/A = 4,565

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

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

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

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

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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: WP1011\_WET\_PEM

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

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

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

**Hydric Soil Indicators:**

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

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

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

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

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

**Restrictive Layer (If observed):**

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

Hydric Soil Present? Yes  No

Remarks:



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

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/7/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1012\_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:** 27.93006      **Long:** -97.193929      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** PEM1A

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

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

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

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input 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: **WP1012\_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>Baccharis halimifolia</u>	5 <input checked="" type="checkbox"/>	50.0%	FAC
2. <u>Prosopis glandulosa</u>	5 <input checked="" type="checkbox"/>	50.0%	UPL
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 5      20% of Total Cover: 2	10	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Spartina patens</u>	90 <input checked="" type="checkbox"/>	90.0%	FACW
2. <u>Chloris cucullata</u>	10 <input type="checkbox"/>	10.0%	UPL
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 50      20% of Total Cover: 20	100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

Total Number of Dominant Species Across All Strata: 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>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>15</u>	x 5 =	<u>75</u>
<b>Column Totals:</b> <u>110</u>	(A)	<u>270</u> (B)

Prevalence Index = B/A = 2.455

**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: WP1012\_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 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:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1012\_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:** 27.93049      **Long:** -97.194153      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** PEM1A

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

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

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

**HYDROLOGY**

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

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

Sampling Point: **WP1012\_WET\_PEM**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. <u>Baccharis halimifolia</u>	25 <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: 13      20% of Total Cover: 5	25	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Spartina patens</u>	95 <input checked="" type="checkbox"/>	95.0%	FACW
2. <u>Cyperus virens</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, ro FAC: 2 (A)

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

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

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**Prevalence Index worksheet:**

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

OBL species 0 x 1 = 0

FACW species 100 x 2 = 200

FAC species 25 x 3 = 75

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column Totals: 125 (A) 275 (B)

Prevalence Index = B/A = 2.200

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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: WP1012\_WET\_PEM

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

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

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

**Hydric Soil Indicators:**

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

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

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

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

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

**Restrictive Layer (If observed):**

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

Hydric Soil Present?    Yes     No

Remarks:



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

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1013\_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:** 27.931161      **Long:** -97.189497      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** PEM1A

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present?      Yes <input 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: **WP1013\_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>	40 <input checked="" type="checkbox"/>	66.7%	FACU
2. <u>Sparganium angustifolium</u>	10 <input type="checkbox"/>	16.7%	FACW
3. <u>Chloris cucullata</u>	5 <input type="checkbox"/>	8.3%	UPL
4. <u>Borreria frutescens</u>	5 <input type="checkbox"/>	8.3%	OBL
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 30      20% of Total Cover: 12	60	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

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

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species	<u>5</u>	x 1 = <u>5</u>
FACW species	<u>10</u>	x 2 = <u>20</u>
FAC species	<u>0</u>	x 3 = <u>0</u>
FACU species	<u>40</u>	x 4 = <u>160</u>
UPL species	<u>5</u>	x 5 = <u>25</u>
<b>Column Totals:</b>	<u>60</u> (A)	<u>210</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: WP1013\_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	2/1	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:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1013\_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:** 27.930912      **Long:** -97.189312      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** PEM1A

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

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

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

**HYDROLOGY**

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

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

Sampling Point: **WP1013\_WET\_PEM**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Spartina patens</u>	70 <input checked="" type="checkbox"/>	71.4%	FACW
2. <u>Borrichia frutescens</u>	25 <input checked="" type="checkbox"/>	25.5%	OBL
3. <u>Salicornia bigelovii</u>	3 <input type="checkbox"/>	3.1%	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: 49      20% of Total Cover: 20	98	<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)

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species <u>28</u>	x 1 =	<u>28</u>
FACW species <u>70</u>	x 2 =	<u>140</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>60</u>	(A)	<u>210</u> (B)

Prevalence Index = B/A = 3.500

**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: WP1013\_WET\_PEM

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

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

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

**Hydric Soil Indicators:**

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

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

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

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

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

**Restrictive Layer (If observed):**

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

Hydric Soil Present? Yes  No

Remarks:



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

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1014\_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:** 2 %      1.1 °  
**Subregion (LRR):** LRR T      **Lat:** 27.931165      **Long:** -97.18887      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** PEM1A

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

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

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

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input 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 type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>	<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:		
Remarks:		

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

Sampling Point: **WP1014\_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.	Cynodon dactylon	2	<input checked="" type="checkbox"/>	100.0% <b>FACU</b>
2.	_____	0	<input type="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:	1	20% of Total Cover:	0.4	2
<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>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>2</u>	x 4 = <u>8</u>
UPL species <u>0</u>	x 5 = <u>0</u>
<b>Column Totals:</b> <u>2</u> (A)	<u>8</u> (B)

Prevalence Index = B/A = 4,000

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**Hydrophytic Vegetation Indicators:**

**1 - Rapid Test for Hydrophytic Vegetation**

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

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

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

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

---

**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: WP1014\_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	2/1	40				Sandy Clay	
0 - 16	10YR	4/1	55				Sandy Clay	
0 - 16	10YR	5/2	5				Sandy Clay	

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

**Hydric Soil Indicators:**

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

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

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

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

**Restrictive Layer (If observed):**

Type: \_\_\_\_\_

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

Hydric Soil Present? Yes  No

**Remarks:**

soil station taken on dirt road



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

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1014\_WET\_E2EM  
**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):** #Error      **Slope:** 0 % 0.0 °  
**Subregion (LRR):** LRR T      **Lat:** 27.93103      **Long:** -97.188888      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** PEM1A

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

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

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

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u> <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 checked="" 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 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: **WP1014\_WET\_E2EM**

		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="checkbox"/>	0.0%
4.	_____	0	<input type="checkbox"/>	0.0%
5.	_____	0	<input type="checkbox"/>	0.0%
6.	_____	0	<input type="checkbox"/>	0.0%
7.	_____	0	<input type="checkbox"/>	0.0%
8.	_____	0	<input type="checkbox"/>	0.0%
50% of Total Cover: 0	20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="checkbox"/>	0.0%
4.	_____	0	<input type="checkbox"/>	0.0%
5.	_____	0	<input type="checkbox"/>	0.0%
6.	_____	0	<input type="checkbox"/>	0.0%
7.	_____	0	<input type="checkbox"/>	0.0%
8.	_____	0	<input type="checkbox"/>	0.0%
50% of Total Cover: 0	20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="checkbox"/>	0.0%
4.	_____	0	<input type="checkbox"/>	0.0%
5.	_____	0	<input type="checkbox"/>	0.0%
6.	_____	0	<input type="checkbox"/>	0.0%
50% of Total Cover: 0	20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )				
1.	<u>Spartina patens</u>	50	<input checked="" type="checkbox"/>	50.0% FACW
2.	<u>Borrichia frutescens</u>	35	<input checked="" type="checkbox"/>	35.0% OBL
3.	<u>Monanthochloe littoralis</u>	10	<input type="checkbox"/>	10.0% OBL
4.	<u>Salicornia bigelovii</u>	5	<input type="checkbox"/>	5.0% OBL
5.	_____	0	<input type="checkbox"/>	0.0%
6.	_____	0	<input type="checkbox"/>	0.0%
7.	_____	0	<input type="checkbox"/>	0.0%
8.	_____	0	<input type="checkbox"/>	0.0%
9.	_____	0	<input type="checkbox"/>	0.0%
10.	_____	0	<input type="checkbox"/>	0.0%
11.	_____	0	<input type="checkbox"/>	0.0%
12.	_____	0	<input type="checkbox"/>	0.0%
50% of Total Cover: 50	20% of Total Cover: 20	100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="checkbox"/>	0.0%
4.	_____	0	<input type="checkbox"/>	0.0%
5.	_____	0	<input type="checkbox"/>	0.0%
50% of Total Cover: 0	20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

Number of Dominant Species That are OBL, FACW, 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>50</u>	x 1 = <u>50</u>
FACW species <u>50</u>	x 2 = <u>100</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>2</u> (A)	<u>8</u> (B)

Prevalence Index = B/A= 4,000

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

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

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

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

---

**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: WP1014\_WET\_E2EM

**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 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:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1015\_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:** 27.931586      **Long:** -97.188365      **Datum:** NAD 83  
**Soil Map Unit Name:** Aransas clay, saline (As)      **NWI Classification:** E2EM1N

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

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

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

**HYDROLOGY**

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

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

Sampling Point: **WP1015\_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>	50 <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: 25      20% of Total Cover: 10	50	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Borrhichia frutescens</u>	50 <input checked="" type="checkbox"/>	50.0%	OBL
2. <u>Spartina patens</u>	50 <input checked="" type="checkbox"/>	50.0%	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, ro FAC: 2 (A)

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

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

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species <u>50</u>	x 1 =	<u>50</u>
FACW species <u>50</u>	x 2 =	<u>100</u>
FAC species <u>0</u>	x 3 =	<u>0</u>
FACU species <u>0</u>	x 4 =	<u>0</u>
UPL species <u>50</u>	x 5 =	<u>250</u>
<b>Column Totals:</b> <u>150</u>	(A)	<u>400</u> (B)

Prevalence Index = B/A = 2.667

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**Hydrophytic Vegetation Indicators:**

- 1 - Rapid Test for Hydrophytic Vegetation
- 2 - Dominance Test is > 50%
- 3 - Prevalence Index is ≤ 3.0<sup>1</sup>
- Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

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

---

**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: WP1015\_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 - 16	10YR	4/1	97	10YR	5/6	3	C	PL	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:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1015\_WET\_E2EM\_A  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Concave      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.93142      **Long:** -97.189029      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** PEM1A

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

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

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

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input 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 checked="" type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			

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

Sampling Point: **WP1015\_WET\_E2EM\_A**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Distichlis spicata</u>	40 <input checked="" type="checkbox"/>	40.0%	OBL
2. <u>Spartina patens</u>	30 <input checked="" type="checkbox"/>	30.0%	FACW
3. <u>Monanthochloe littoralis</u>	20 <input checked="" type="checkbox"/>	20.0%	OBL
4. <u>Marsilea macropoda</u>	5 <input type="checkbox"/>	5.0%	OBL
5. <u>Borrichia frutescens</u>	5 <input type="checkbox"/>	5.0%	OBL
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 50      20% of Total Cover: 20	100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

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

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species <u>70</u>	x 1 =	<u>70</u>
FACW species <u>30</u>	x 2 =	<u>60</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>130</u> (B)

Prevalence Index = B/A = 1.300

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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: WP1015\_WET\_E2EM\_A

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	5/1	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:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1015\_WET\_E2EM\_B  
**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:** 27.931322      **Long:** -97.188659      **Datum:** NAD 83  
**Soil Map Unit Name:** Narta loam, 0 to 1 percent slopes, rarely flooded (Na)      **NWI Classification:** PEM1A

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

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

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

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input 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 checked="" type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			

	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>Salicornia bigelovii</u>	40 <input checked="" type="checkbox"/>	50.0%	OBL
2. <u>Monanthochloe littoralis</u>	20 <input checked="" type="checkbox"/>	25.0%	OBL
3. <u>Borrchia frutescens</u>	10 <input type="checkbox"/>	12.5%	OBL
4. <u>Spartina patens</u>	10 <input type="checkbox"/>	12.5%	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: 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: 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>70</u>	x 1 =	<u>70</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>Colum Totals:</b> <u>80</u>	(A)	<u>90</u> (B)

Prevalence Index = B/A = 1.125

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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: WP1015\_WET\_E2EM\_B

**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:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1016\_UP\_A  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Convex      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.931257      **Long:** -97.187885      **Datum:** NAD 83  
**Soil Map Unit Name:** Aransas clay, saline (As)      **NWI Classification:** E2EM1N

**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 checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____	<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>
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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: **WP1016\_UP\_A**

	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>	30 <input checked="" type="checkbox"/>	66.7%	UPL
2. <u>Celtis pallida</u>	10 <input checked="" type="checkbox"/>	22.2%	UPL
3. <u>Forestiera angustifolia</u>	5 <input type="checkbox"/>	11.1%	UPL
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 23      20% of Total Cover: 9	45	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Spartina patens</u>	85 <input checked="" type="checkbox"/>	85.0%	FACW
2. <u>Borrichia frutescens</u>	15 <input type="checkbox"/>	15.0%	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: 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>15</u>	x 1 = <u>15</u>
FACW species	<u>85</u>	x 2 = <u>170</u>
FAC species	<u>0</u>	x 3 = <u>0</u>
FACU species	<u>0</u>	x 4 = <u>0</u>
UPL species	<u>45</u>	x 5 = <u>225</u>
<b>Column Totals:</b>	<u>145</u> (A)	<u>410</u> (B)

Prevalence Index = B/A = 2.828

---

**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: WP1016\_UP\_A

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

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

**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:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1016\_UP\_B  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Convex      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.931542      **Long:** -97.185723      **Datum:** NAD 83  
**Soil Map Unit Name:** Dietrich loamy fine sand, 0 to 1 percent slopes, very rarely flooded (Dt)      **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 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: **WP1016\_UP\_B**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. <u>Forestiera angustifolia</u>	10 <input checked="" type="checkbox"/>	40.0%	UPL
2. <u>Prosopis glandulosa</u>	10 <input checked="" type="checkbox"/>	40.0%	UPL
3. <u>Celtis pallida</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%	_____
50% of Total Cover: 13      20% of Total Cover: 5	25	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Spartina patens</u>	45 <input checked="" type="checkbox"/>	52.9%	FACW
2. <u>Andropogon aequalis</u>	20 <input checked="" type="checkbox"/>	23.5%	FAC
3. <u>Ambrosia artemisiifolia</u>	15 <input type="checkbox"/>	17.6%	FACU
4. <u>Solanum triquetrum</u>	5 <input type="checkbox"/>	5.9%	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: 43      20% of Total Cover: 17	85	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

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

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**Prevalence Index worksheet:**

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

OBL species 0 x 1 = 0

FACW species 45 x 2 = 90

FAC species 20 x 3 = 60

FACU species 15 x 4 = 60

UPL species 30 x 5 = 150

Column Totals: 145 (A)      410 (B)

Prevalence Index = B/A = 2.828

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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: WP1016\_UP\_B

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

Depth (inches)	Matrix			Redox Features				Location <sup>2</sup>	Texture	Remarks
	Color (moist)	%	%	Color (moist)	%	Type <sup>1</sup>				
0 - 16	10YR	5/1	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:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1016\_WET\_E2EM\_A  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Concave      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.931466      **Long:** -97.187642      **Datum:** NAD 83  
**Soil Map Unit Name:** Aransas clay, saline (As)      **NWI Classification:** E2EM1N

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

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

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

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input 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 checked="" type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		<b>Wetland Hydrology Present?</b> Yes <input checked="" type="radio"/> No <input type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			

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

Sampling Point: WP1016\_WET\_E2EM\_A

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : <u>30</u> )			
1. <u>Spartina patens</u>	80 <input checked="" type="checkbox"/>	80.0%	FACW
2. <u>Monanthochloe littoralis</u>	10 <input type="checkbox"/>	10.0%	OBL
3. <u>Borrchia arborescens</u>	10 <input type="checkbox"/>	10.0%	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: <u>50</u> 20% of Total Cover: <u>20</u>	<u>100</u>	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<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: 5 (B)

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

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species <u>10</u>	x 1 =	<u>10</u>
FACW species <u>90</u>	x 2 =	<u>180</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>Colum Totals:</b> <u>110</u>	(A)	<u>360</u> (B)

Prevalence Index = B/A = 3.273

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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: WP1016\_WET\_E2EM\_A

**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	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:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1016\_WET\_E2EM\_B  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Flat      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.931544      **Long:** -97.186574      **Datum:** NAD 83  
**Soil Map Unit Name:** Aransas clay, saline (As)      **NWI Classification:** E2EM1N

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

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

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

**HYDROLOGY**

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

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

Sampling Point: WP1016\_WET\_E2EM\_B

	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>	<u>0</u>	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : <u>30</u> )			
1. <u>Monanthochloe littoralis</u>	95 <input checked="" type="checkbox"/>	95.0%	<u>OBL</u>
2. <u>Borrichia frutescens</u>	5 <input type="checkbox"/>	5.0%	<u>OBL</u>
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>50</u> 20% of Total Cover: <u>20</u>	<u>100</u>	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

Total Number of Dominant Species Across All Strata: 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 100 x 1 = 100

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: 100 (A) 100 (B)

Prevalence Index = B/A = 1,000

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

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

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

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

---

**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: WP1016\_WET\_E2EM\_B

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

Depth (inches)	Matrix			Redox Features			Location <sup>2</sup>	Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>				
0 - 16	10YR	4/1	97	10YR	7/1	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:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1016\_WET\_E2EM\_C  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Concave      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.931226      **Long:** -97.1868      **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 checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): <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: **WP1016\_WET\_E2EM\_C**

	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>Monanthochloe littoralis</u>	45 <input checked="" type="checkbox"/>	69.2%	OBL
2. <u>Spartina patens</u>	10 <input type="checkbox"/>	15.4%	FACW
3. <u>Borrchia frutescens</u>	5 <input type="checkbox"/>	7.7%	OBL
4. <u>Salicornia bigelovii</u>	5 <input type="checkbox"/>	7.7%	OBL
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 33      20% of Total Cover: 13	65	<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: 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 <u>55</u>	x 1 =	<u>55</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>Colum Totals:</b> <u>65</u>	(A)	<u>75</u> (B)

Prevalence Index = B/A = 1.154

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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: WP1016\_WET\_E2EM\_C

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

Depth (inches)	Matrix			Redox Features				Location <sup>2</sup>	Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type <sup>1</sup>				
0 - 16	10YR	5/1	97	10YR	5/6	3	C	PL	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:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1016\_WET\_E2EM\_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):** Flat      **Slope:** 0 % 0.0 °  
**Subregion (LRR):** LRR T      **Lat:** 27.931949      **Long:** -97.185736      **Datum:** NAD 83  
**Soil Map Unit Name:** Dietrich loamy fine sand, 0 to 1 percent slopes, very rarely flooded (Dt)      **NWI Classification:** E2EM1N

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

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

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

**HYDROLOGY**

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

	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. _____	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	= Total Cover	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Spartina patens</u>	45 <input checked="" type="checkbox"/>	50.0%	FACW
2. <u>Monanthochloe littoralis</u>	35 <input checked="" type="checkbox"/>	38.9%	OBL
3. <u>Borrchia frutescens</u>	10 <input type="checkbox"/>	11.1%	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: 45      20% of Total Cover: 18	90	= 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: 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>45</u>	x 1 =	<u>45</u>
FACW species <u>45</u>	x 2 =	<u>90</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>135</u> (B)

Prevalence Index = B/A = 1.500

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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: WP1016\_WET\_E2EM\_D

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	5/1	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:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1016\_WET\_E2USP\_A  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Flat      **Slope:** 0 % 0.0 °  
**Subregion (LRR):** LRR T      **Lat:** 27.931466      **Long:** -97.186326      **Datum:** NAD 83  
**Soil Map Unit Name:** Aransas clay, saline (As)      **NWI Classification:** E2EM1N

**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>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: mud flat			

	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. _____	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	= Total Cover	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Distichlis spicata</u>	5 <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: 2.5      20% of Total Cover: 1	5	= 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: 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 <u>5</u>	x 1 =	<u>5</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>5</u>	(A)	<u>5</u> (B)

Prevalence Index = B/A = 1.000

---

**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: WP1016\_WET\_E2USP\_A

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

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

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

**Hydric Soil Indicators:**

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

- 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:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1016\_WET\_E2USP\_B  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Flat      **Slope:** 0 % 0.0 °  
**Subregion (LRR):** LRR T      **Lat:** 27.931795      **Long:** -97.18585      **Datum:** NAD 83  
**Soil Map Unit Name:** Dietrich loamy fine sand, 0 to 1 percent slopes, very rarely flooded (Dt)      **NWI Classification:** E2USP

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

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

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

**HYDROLOGY**

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

	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>Salicornia bigelovii</u>	5 <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: 2.5      20% of Total Cover: 1	5	<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: 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 <u>5</u>	x 1 =	<u>5</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>5</u>	(A)	<u>5</u> (B)

Prevalence Index = B/A = 1.000

---

**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: WP1016\_WET\_E2USP\_B

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

Depth (inches)	Matrix			Redox Features				Location <sup>2</sup>	Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type <sup>1</sup>				
0 - 16	10YR	5/1	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:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1016\_WET\_E2USP\_C  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** #Error      **Local relief (concave, convex, none):** #Error      **Slope:** 0 % 0.0 °  
**Subregion (LRR):** LRR T      **Lat:** 27.931389      **Long:** -97.185934      **Datum:** NAD 83  
**Soil Map Unit Name:** Dietrich loamy fine sand, 0 to 1 percent slopes, very rarely flooded (Dt)      **NWI Classification:** E2USP

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

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

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

**HYDROLOGY**

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

	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.	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	= Total Cover
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Salicornia bigelovii</u>	3 <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: 1.5	20% of Total Cover: 0.6	3	= 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: 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: 3 Multiply by: 1

OBL species 3 x 1 = 3

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: 3 (A) 3 (B)

Prevalence Index = B/A = 1,000

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

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

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

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

---

**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: WP1016\_WET\_E2USP\_C

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

Depth (inches)	Matrix			Redox Features			Tvpe <sup>1</sup>	Location <sup>2</sup>	Texture	Remarks
	Color (moist)		%	Color (moist)		%				
0 - 16	10YR	6/1	70	10YR	5/6	30	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:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1017\_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:** 0 % 0.0 °  
**Subregion (LRR):** LRR T      **Lat:** 27.932002      **Long:** -97.185221      **Datum:** NAD 83  
**Soil Map Unit Name:** Dietrich loamy fine sand, 0 to 1 percent slopes, very rarely flooded (Dt)      **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 type="radio"/> No <input checked="" type="radio"/> Wetland Hydrology Present?      Yes <input type="radio"/> No <input checked="" type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Remarks: Hydric soil and wetland hydrology are not present. This is not a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input 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: **WP1017\_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>Distichlis spicata</u>	75 <input checked="" type="checkbox"/>	79.8%	OBL
2. <u>Spartina patens</u>	10 <input type="checkbox"/>	10.6%	FACW
3. <u>Opuntia lindheimeri</u>	3 <input type="checkbox"/>	3.2%	UPL
4. <u>Sabatia campestri</u>	2 <input type="checkbox"/>	2.1%	FACU
5. <u>Nothoscordum bivalve</u>	2 <input type="checkbox"/>	2.1%	FACU
6. <u>Helenium amarum</u>	2 <input type="checkbox"/>	2.1%	FACU
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: 47      20% of Total Cover: 19	94	<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: 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 <u>75</u>	x 1 =	<u>75</u>
FACW species <u>10</u>	x 2 =	<u>20</u>
FAC species <u>0</u>	x 3 =	<u>0</u>
FACU species <u>6</u>	x 4 =	<u>24</u>
UPL species <u>3</u>	x 5 =	<u>15</u>
<b>Column Totals:</b> <u>94</u> (A)		<u>134</u> (B)

Prevalence Index = B/A = 1.426

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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: WP1017\_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	4/3	100				Sandy Clay	

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

**Hydric Soil Indicators:**

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

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

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

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

**Restrictive Layer (If observed):**

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

Hydric Soil Present?    Yes     No

Remarks:



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

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1017\_WET\_E2EM  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Flat      **Slope:** 0 % 0.0 °  
**Subregion (LRR):** LRR T      **Lat:** 27.932023      **Long:** -97.18546      **Datum:** NAD 83  
**Soil Map Unit Name:** Dietrich loamy fine sand, 0 to 1 percent slopes, very rarely flooded (Dt)      **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> <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 checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)

<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input 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"/>
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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: **WP1017\_WET\_E2EM**

	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. Monanthochloe littoralis	50 <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: 25      20% of Total Cover: 10	50	<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: 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 <u>50</u>	x 1 =	<u>50</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>Colum Totals:</b> <u>50</u>	(A)	<u>50</u> (B)

Prevalence Index = B/A = 1,000

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

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

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

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

---

**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: WP1017\_WET\_E2EM

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

Depth (inches)	Matrix			Redox Features			Location <sup>2</sup>	Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type <sup>1</sup>			
0 - 16	10YR	5/1	85	10YR	5/6	15	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:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1018\_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:** 27.9313      **Long:** -97.182809      **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 checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input checked="" type="radio"/> No <input type="radio"/>
Remarks: Hydrophytic vegetation, hydric soil, and wetland hydrology are present. This is a wetland.	

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>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: **WP1018\_WET\_PEM**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Spartina patens</u>	50 <input checked="" type="checkbox"/>	58.8%	FACW
2. <u>Distichlis spicata</u>	20 <input checked="" type="checkbox"/>	23.5%	OBL
3. <u>Eleocharis minima</u>	5 <input type="checkbox"/>	5.9%	OBL
4. <u>Panicum virgatum</u>	5 <input type="checkbox"/>	5.9%	FAC
5. <u>Marsilea macrospora</u>	5 <input type="checkbox"/>	5.9%	OBL
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 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: 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>50</u>	x 2 =	<u>100</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>85</u>	(A)	<u>145</u> (B)

Prevalence Index = B/A = 1.706

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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: WP1018\_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 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:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1019\_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:** 27.931486      **Long:** -97.182893      **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"/>	Is the Sampled Area within a Wetland?      Yes <input type="radio"/> No <input checked="" type="radio"/>
Hydric Soil Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>	
Wetland Hydrology Present?	Yes <input type="radio"/>	No <input checked="" type="radio"/>	

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: **WP1019\_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.	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.	80	<input checked="" type="checkbox"/>	87.0% FAC
2.	10	<input type="checkbox"/>	10.9% FACU
3.	2	<input type="checkbox"/>	2.2% 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: 46	20% of Total Cover: 18	92	= 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: 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	0	x 1 = 0
FACW species	0	x 2 = 0
FAC species	82	x 3 = 246
FACU species	10	x 4 = 40
UPL species	10	x 5 = 50
<b>Column Totals:</b>	<b>102</b> (A)	<b>336</b> (B)

Prevalence Index = B/A = 3.294

**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: WP1019\_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	4/3	100				Sandy Clay	

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

**Hydric Soil Indicators:**

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

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

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

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

**Restrictive Layer (If observed):**

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

Hydric Soil Present?    Yes     No

Remarks:



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

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/8/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1019\_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:** 27.931604      **Long:** -97.183096      **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 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: **WP1019\_WET\_PEM**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Spartina patens</u>	90 <input checked="" type="checkbox"/>	90.0%	FACW
2. <u>Eleocharis minima</u>	7 <input type="checkbox"/>	7.0%	OBL
3. <u>Marsilea macrospora</u>	3 <input type="checkbox"/>	3.0%	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)

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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>90</u>	x 2 = <u>180</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>102</u> (A)	<u>336</u> (B)

Prevalence Index = B/A = 3.294

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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: WP1019\_WET\_PEM

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

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

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

**Hydric Soil Indicators:**

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

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

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

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

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

**Restrictive Layer (If observed):**

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

Hydric Soil Present?    Yes     No

Remarks:



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

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/11/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1020\_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:** 27.930113      **Long:** -97.182068      **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: 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 checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Water Table Present?      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe)      Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____		<b>Wetland Hydrology Present?</b> Yes <input type="radio"/> No <input checked="" type="radio"/>	
Describe Recorded Data (stream gauge, monitor well, aerial photos, previous inspections), if available:			
Remarks:			

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

Sampling Point: **WP1020\_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>Distichlis spicata</u>	45 <input checked="" type="checkbox"/>	45.0%	OBL
2. <u>Panicum virgatum</u>	40 <input checked="" type="checkbox"/>	40.0%	FAC
3. <u>Andropogon aegyptius</u>	10 <input type="checkbox"/>	10.0%	FAC
4. <u>Spartina patens</u>	5 <input type="checkbox"/>	5.0%	FACW
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 50      20% of Total Cover: 20	100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

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

---

**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species <u>45</u>	x 1 =	<u>45</u>
FACW species <u>5</u>	x 2 =	<u>10</u>
FAC species <u>50</u>	x 3 =	<u>150</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>205</u> (B)

Prevalence Index = B/A = 2.050

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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: WP1020\_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	5/3	95	10YR	4/6	5	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)

**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:** WP1020\_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:** 27.930256      **Long:** -97.182467      **Datum:** NAD 83  
**Soil Map Unit Name:** Dietrich loamy fine sand, 0 to 1 percent slopes, very rarely flooded (Dt)      **NWI Classification:** PEM1A

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

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

Hydrophytic Vegetation Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present?      Yes <input checked="" type="radio"/> No <input type="radio"/>	Is the Sampled Area within a Wetland?      Yes <input checked="" type="radio"/> No <input type="radio"/>
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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: **WP1020\_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	= 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. _____	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	= Total Cover
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Spartina patens</u>	90 <input checked="" type="checkbox"/>	90.0%	FACW
2. <u>Eleocharis montevidensis</u>	8 <input type="checkbox"/>	8.0%	FACW
3. <u>Andropogon alomeratus</u>	2 <input type="checkbox"/>	2.0%	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: 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: 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 100 x 2 = 200

FAC species 0 x 3 = 0

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column Totals: 100 (A) 200 (B)

Prevalence Index = B/A = 2,000

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**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

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

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

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

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**Definition of Vegetation Strata:**

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

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

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

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

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

Woody vine - All woody vines, regardless of height.

---

**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: WP1020\_WET\_PEM

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

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

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

**Hydric Soil Indicators:**

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

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

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

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

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

**Restrictive Layer (If observed):**

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

Hydric Soil Present? Yes  No

Remarks:



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

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/11/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1021\_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:** 27.930521      **Long:** -97.181256      **Datum:** NAD 83  
**Soil Map Unit Name:** Papalote fine sandy loam, 0 to 1 percent slopes (PaA)      **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>		<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: **WP1021\_UP**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1.	0	0.0%	
2.	0	0.0%	
3.	0	0.0%	
4.	0	0.0%	
5.	0	0.0%	
6.	0	0.0%	
7.	0	0.0%	
8.	0	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1.	0	0.0%	
2.	0	0.0%	
3.	0	0.0%	
4.	0	0.0%	
5.	0	0.0%	
6.	0	0.0%	
7.	0	0.0%	
8.	0	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. <i>Prosopis glandulosa</i>	5	50.0%	UPL
2. <i>Celtis pallida</i>	5	50.0%	UPL
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>Dichanthelium oligosanthes</i>	25	26.3%	FACU
2. <i>Panicum virgatum</i>	20	21.1%	FAC
3. <i>Distichlis spicata</i>	20	21.1%	OBL
4. <i>Ambrosia artemisiifolia</i>	10	10.5%	FACU
5. <i>Geranium carolinianum</i>	5	5.3%	UPL
6. <i>Lysimachia arvensis</i>	5	5.3%	FACU
7. <i>Solanum elaeagnifolium</i>	5	5.3%	UPL
8. <i>Lantana urticoides</i>	5	5.3%	FACU
9.	0	0.0%	
10.	0	0.0%	
11.	0	0.0%	
12.	0	0.0%	
50% of Total Cover: 48	20% of Total Cover: 19	95	= 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: 2 (A)

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

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

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**Prevalence Index worksheet:**

Total % Cover of: 105 (A) Multiply by: 360 (B)

OBL species 20 x 1 = 20

FACW species 0 x 2 = 0

FAC species 20 x 3 = 60

FACU species 45 x 4 = 180

UPL species 20 x 5 = 100

Column Totals: 105 (A) 360 (B)

Prevalence Index = B/A = 3.429

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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: WP1021\_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:** WP1021\_WET\_PEM\_A  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Concave      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.930316      **Long:** -97.181243      **Datum:** NAD 83  
**Soil Map Unit Name:** Papalote fine sandy loam, 0 to 1 percent slopes (PaA)      **NWI Classification:** PEM1A

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

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

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

**HYDROLOGY**

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

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

Sampling Point: WP1021\_WET\_PEM\_A

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : <u>30</u> )			
1. <u>Spartina patens</u>	<u>90</u> <input checked="" type="checkbox"/>	<u>90.0%</u>	<u>FACW</u>
2. <u>Ludwigia palustris</u>	<u>4</u> <input type="checkbox"/>	<u>4.0%</u>	<u>OBL</u>
3. <u>Andropogon alomeratus</u>	<u>3</u> <input type="checkbox"/>	<u>3.0%</u>	<u>FACW</u>
4. <u>Baccharis halimifolia</u>	<u>3</u> <input type="checkbox"/>	<u>3.0%</u>	<u>FAC</u>
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>50</u> 20% of Total Cover: <u>20</u>	<u>100</u>	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

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

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species <u>4</u>	x 1 =	<u>4</u>
FACW species <u>93</u>	x 2 =	<u>186</u>
FAC species <u>3</u>	x 3 =	<u>9</u>
FACU species <u>0</u>	x 4 =	<u>0</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
<b>Column Totals:</b> <u>105</u>	(A)	<u>360</u> (B)

Prevalence Index = B/A = 3.429

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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: WP1021\_WET\_PEM\_A

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

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

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

**Hydric Soil Indicators:**

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

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

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

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

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

**Restrictive Layer (If observed):**

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

Hydric Soil Present? Yes  No

Remarks:



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

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/11/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1021\_WET\_PEM\_B  
**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:** 27.930145      **Long:** -97.179788      **Datum:** NAD 83  
**Soil Map Unit Name:** Papalote fine sandy loam, 0 to 1 percent slopes (PaA)      **NWI Classification:** PEM1A

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

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

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

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>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: **WP1021\_WET\_PEM\_B**

		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="checkbox"/>	0.0%
4.	_____	0	<input type="checkbox"/>	0.0%
5.	_____	0	<input type="checkbox"/>	0.0%
6.	_____	0	<input type="checkbox"/>	0.0%
7.	_____	0	<input type="checkbox"/>	0.0%
8.	_____	0	<input type="checkbox"/>	0.0%
50% of Total Cover: 0	20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="checkbox"/>	0.0%
4.	_____	0	<input type="checkbox"/>	0.0%
5.	_____	0	<input type="checkbox"/>	0.0%
6.	_____	0	<input type="checkbox"/>	0.0%
7.	_____	0	<input type="checkbox"/>	0.0%
8.	_____	0	<input type="checkbox"/>	0.0%
50% of Total Cover: 0	20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )				
1.	_____	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.	Eleocharis montevidensis	65	<input checked="" type="checkbox"/>	65.0% FACW
2.	Spartina patens	25	<input checked="" type="checkbox"/>	25.0% FACW
3.	Typha dominicensis	10	<input type="checkbox"/>	10.0% 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: 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>10</u>	x 1 = <u>10</u>
FACW species <u>90</u>	x 2 = <u>180</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>190</u> (B)

Prevalence Index = B/A = 1.900

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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: WP1021\_WET\_PEM\_B

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	5/1	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:** 2/11/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1021\_WET\_PEM\_C  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Flat      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.930546      **Long:** -97.179635      **Datum:** NAD 83  
**Soil Map Unit Name:** Papalote fine sandy loam, 0 to 1 percent slopes (PaA)      **NWI Classification:** PEM1A

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

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

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

### HYDROLOGY

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

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

Sampling Point: **WP1021\_WET\_PEM\_C**

	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>Monanthochloe littoralis</u>	30 <input checked="" type="checkbox"/>	40.0%	OBL
2. <u>Distichlis spicata</u>	25 <input checked="" type="checkbox"/>	33.3%	OBL
3. <u>Spartina patens</u>	10 <input type="checkbox"/>	13.3%	FACW
4. <u>Borrchia frutescens</u>	10 <input type="checkbox"/>	13.3%	OBL
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 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, 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>65</u>	x 1 =	<u>65</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>Colum Totals:</b> <u>75</u> (A)		<u>85</u> (B)

Prevalence Index = B/A = 1.133

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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: WP1021\_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				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	5/1	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:** 2/11/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1022\_UP\_A  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Convex      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.930619      **Long:** -97.179175      **Datum:** NAD 83  
**Soil Map Unit Name:** Papalote fine sandy loam, 0 to 1 percent slopes (PaA)      **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>		<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: WP1022\_UP\_A

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : <u>30</u> )			
1. <u>Prosopis glandulosa</u>	30 <input checked="" type="checkbox"/>	100.0%	<u>UPL</u>
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>15</u> 20% of Total Cover: <u>6</u>	30	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : <u>30</u> )			
1. <u>Monanthochloe littoralis</u>	80 <input checked="" type="checkbox"/>	80.0%	<u>OBL</u>
2. <u>Opuntia lindheimeri</u>	17 <input type="checkbox"/>	17.0%	<u>UPL</u>
3. <u>Ambrosia artemisiifolia</u>	3 <input type="checkbox"/>	3.0%	<u>FACU</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>50</u> 20% of Total Cover: <u>20</u>	100	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	0	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

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

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**Prevalence Index worksheet:**

Total % Cover of:	Multiply by:	
OBL species <u>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>3</u>	x 4 =	<u>12</u>
UPL species <u>47</u>	x 5 =	<u>235</u>
<b>Column Totals:</b> <u>130</u> (A)		<u>327</u> (B)

Prevalence Index = B/A = 2.515

---

**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: WP1022\_UP\_A

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

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

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

**Hydric Soil Indicators:**

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

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

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

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

**Restrictive Layer (If observed):**

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

**Hydric Soil Present?**    Yes     No

Remarks:



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

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/11/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1022\_UP\_B  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A T N/A R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Convex      **Slope:** 2 % 1.1 °  
**Subregion (LRR):** LRR T      **Lat:** 27.93044      **Long:** -97.178166      **Datum:** NAD 83  
**Soil Map Unit Name:** Papalote fine sandy loam, 0 to 1 percent slopes (PaA)      **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>		<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: **WP1022\_UP\_B**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. <u>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>Dichanthelium oligosanthes</u>	30 <input checked="" type="checkbox"/>	41.7%	FACU
2. <u>Heterotheca subaxillaris</u>	20 <input checked="" type="checkbox"/>	27.8%	UPL
3. <u>Monanthochloe littoralis</u>	10 <input type="checkbox"/>	13.9%	OBL
4. <u>Spartina patens</u>	10 <input type="checkbox"/>	13.9%	FACW
5. <u>Nothoscordum bivalve</u>	2 <input type="checkbox"/>	2.8%	FACU
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 36      20% of Total Cover: 14	72	<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)

**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>32</u>	x 4 = <u>128</u>
UPL species	<u>30</u>	x 5 = <u>150</u>
<b>Column Totals:</b>	<u>130</u> (A)	<u>327</u> (B)

Prevalence Index = B/A = 2.515

**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: WP1022\_UP\_B

**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	5/3	100				Sand	

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

**Hydric Soil Indicators:**

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

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

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

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

**Restrictive Layer (If observed):**

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

Hydric Soil Present?    Yes     No

Remarks:



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

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/11/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1022\_UP\_C  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Convex      **Slope:** 2 %      1.1 °  
**Subregion (LRR):** LRR T      **Lat:** 27.93142      **Long:** -97.176554      **Datum:** NAD 83  
**Soil Map Unit Name:** Papalote fine sandy loam, 0 to 1 percent slopes (PaA)      **NWI Classification:** None

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

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

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

**HYDROLOGY**

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

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

Sampling Point: **WP1022\_UP\_C**

	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>	35 <input checked="" type="checkbox"/>	36.8%	FACU
2. <u>Ambrosia artemisiifolia</u>	25 <input checked="" type="checkbox"/>	26.3%	FACU
3. <u>Spartina patens</u>	20 <input checked="" type="checkbox"/>	21.1%	FACW
4. <u>Dichanthelium oligosanthos</u>	15 <input type="checkbox"/>	15.8%	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: 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: 3 (B)

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

**Prevalence Index worksheet:**

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

OBL species 0 x 1 = 0

FACW species 20 x 2 = 40

FAC species 0 x 3 = 0

FACU species 75 x 4 = 300

UPL species 0 x 5 = 0

Column Totals: 82 (A) 308 (B)

Prevalence Index = B/A = 3.756

**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: WP1022\_UP\_C

**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	5/3	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:** 2/11/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1022\_UP\_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):** Flat      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.93327      **Long:** -97.173362      **Datum:** NAD 83  
**Soil Map Unit Name:** Aransas clay, saline (As)      **NWI Classification:** None

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

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

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

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
<b>Field Observations:</b> Surface Water Present?      Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>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: WP1022\_UP\_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>	<u>0</u>	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : <u>30</u> )			
1. <u>Cynodon dactylon</u>	95 <input checked="" type="checkbox"/>	95.0%	FACU
2. <u>Spartina patens</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: <u>50</u> 20% of Total Cover: <u>20</u>	<u>100</u>	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	

**Dominance Test worksheet:**

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

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

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

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**Prevalence Index worksheet:**

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

OBL species 0 x 1 = 0

FACW species 5 x 2 = 10

FAC species 0 x 3 = 0

FACU species 95 x 4 = 380

UPL species 0 x 5 = 0

Column Totals: 95 (A)    340 (B)

Prevalence Index = B/A = 3.579

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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: WP1022\_UP\_D

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

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

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

**Hydric Soil Indicators:**

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

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

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

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

**Restrictive Layer (If observed):**

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

Hydric Soil Present? Yes  No

Remarks:



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

**Project/Site:** Bluewater Terminal SPM Project      **City/County:** San Patricio      **Sampling Date:** 2/11/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1022\_WET\_PEM\_A  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Concave      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.930192      **Long:** -97.17815      **Datum:** NAD 83  
**Soil Map Unit Name:** Papalote fine sandy loam, 0 to 1 percent slopes (PaA)      **NWI Classification:** PEM1A

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

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

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

**HYDROLOGY**

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input 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>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: WP1022\_WET\_PEM\_A

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : <u>30</u> )			
1. <u>Spartina patens</u>	<u>90</u> <input checked="" type="checkbox"/>	<u>94.7%</u>	<u>FACW</u>
2. <u>Ludwigia palustris</u>	<u>5</u> <input type="checkbox"/>	<u>5.3%</u>	<u>OBL</u>
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>48</u> 20% of Total Cover: <u>19</u>	<u>95</u>	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<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)

---

**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>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**

---

**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: WP1022\_WET\_PEM\_A

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe <sup>1</sup>	Location <sup>2</sup>		
0 - 16	10YR	5/1	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:** 2/11/2019  
**Applicant/Owner:** Phillips 66 Pipeline, LLC      **State:** TX      **Sampling Point:** WP1022\_WET\_PEM\_B  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Concave      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.930099      **Long:** -97.177605      **Datum:** NAD 83  
**Soil Map Unit Name:** Papalote fine sandy loam, 0 to 1 percent slopes (PaA)      **NWI Classification:** None

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

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

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

### HYDROLOGY

<b>Wetland Hydrology Indicators:</b> <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input 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: WP1022\_WET\_PEM\_B

	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>	<u>0</u>	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : <u>30</u> )			
1. <u>Spartina patens</u>	<u>50</u> <input checked="" type="checkbox"/>	<u>58.8%</u>	<u>FACW</u>
2. <u>Borrichia frutescens</u>	<u>10</u> <input type="checkbox"/>	<u>11.8%</u>	<u>OBL</u>
3. <u>Monanthochloe littoralis</u>	<u>10</u> <input type="checkbox"/>	<u>11.8%</u>	<u>OBL</u>
4. <u>Marsilea macrospora</u>	<u>5</u> <input type="checkbox"/>	<u>5.9%</u>	<u>OBL</u>
5. <u>Ludwigia palustris</u>	<u>5</u> <input type="checkbox"/>	<u>5.9%</u>	<u>OBL</u>
6. <u>Batis maritima</u>	<u>5</u> <input type="checkbox"/>	<u>5.9%</u>	<u>OBL</u>
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>	<u>85</u>	<b>= Total Cover</b>	
<b>Woody Vine Stratum</b> (Plot Size : <u>30</u> )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: <u>0</u> 20% of Total Cover: <u>0</u>	<u>0</u>	<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 <u>35</u>	x 1 =	<u>35</u>
FACW species <u>50</u>	x 2 =	<u>100</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>85</u>	(A)	<u>135</u> (B)

Prevalence Index = B/A = 1.588

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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\_B

**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 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\_C  
**Investigator(s):** B. Bringhurst & A. Ostrowski      **Section, Township, Range:** S N/A      T N/A      R N/A  
**Landform (hillslope, terrace, etc.):** Flat      **Local relief (concave, convex, none):** Convex      **Slope:** 1 % 0.6 °  
**Subregion (LRR):** LRR T      **Lat:** 27.931112      **Long:** -97.17669      **Datum:** NAD 83  
**Soil Map Unit Name:** Papalote fine sandy loam, 0 to 1 percent slopes (PaA)      **NWI Classification:** None

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

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

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

**HYDROLOGY**

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

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

Sampling Point: **WP1022\_WET\_PEM\_C**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
<b>Tree Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Sapling or Sapling/Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Shrub Stratum</b> (Plot Size : 30 )			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0      20% of Total Cover: 0	0	<b>= Total Cover</b>	
<b>Herb Stratum</b> (Plot Size : 30 )			
1. <u>Spartina patens</u>	45 <input checked="" type="checkbox"/>	52.9%	FACW
2. <u>Distichlis spicata</u>	20 <input checked="" type="checkbox"/>	23.5%	OBL
3. <u>Monanthochloe littoralis</u>	10 <input type="checkbox"/>	11.8%	OBL
4. <u>Borrichia frutescens</u>	5 <input type="checkbox"/>	5.9%	OBL
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: 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: 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>35</u>	x 1 =	<u>35</u>
FACW species <u>50</u>	x 2 =	<u>100</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>85</u> (A)		<u>135</u> (B)

Prevalence Index = B/A = 1.588

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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.