

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater Terminal SPM Project **City/County:** Aransas **Sampling Date:** 2/14/2019
Applicant/Owner: Phillips 66 Pipeline, LLC **State:** TX **Sampling Point:** WP1053_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:** 27.917337 **Long:** -97.134011 **Datum:** NAD 83
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponde **NWI Classification:** PEM1A

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input 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

Wetland Hydrology Indicators: <u>Primary Indicators (Minimum of one required; check all that apply)</u>		<u>Secondary Indicators (Minimum of 2 required)</u>	
<input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)	
Field Observations: 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>		Wetland Hydrology Present? 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: **WP1053_WET_E2EM_A**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Sapling or Sapling/Shrub Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Shrub Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Herb Stratum (Plot Size : 30)			
1. <u>Spartina patens</u>	50 <input checked="" type="checkbox"/>	66.7%	FACW
2. <u>Borrichia frutescens</u>	20 <input checked="" type="checkbox"/>	26.7%	OBL
3. <u>Andropogon alomeratus</u>	5 <input type="checkbox"/>	6.7%	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: 38 20% of Total Cover: 15	75	= Total Cover	
Woody Vine Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="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: 3 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species <u>20</u>	x 1 =	<u>20</u>
FACW species <u>55</u>	x 2 =	<u>110</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>
Column Totals: <u>75</u>	(A)	<u>130</u> (B)

Prevalence Index = B/A = 1.733

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹ 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: WP1053_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 ¹	Location ²		
0 - 16	10YR	6/1	100				Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- 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)

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

Restrictive Layer (If observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater Terminal SPM Project **City/County:** Aransas **Sampling Date:** 2/14/2019
Applicant/Owner: Phillips 66 Pipeline, LLC **State:** TX **Sampling Point:** WP1053_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:** 27.917309 **Long:** -97.133482 **Datum:** NAD 83
Soil Map Unit Name: Dianola soils (Ds) **NWI Classification:** PEM1C

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

Wetland Hydrology Indicators: <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 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)	
Field Observations: 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>		Wetland Hydrology Present? 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
Tree Stratum (Plot Size : 30)				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="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	
Sapling or Sapling/Shrub Stratum (Plot Size : 30)				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="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	
Shrub Stratum (Plot Size : 30)				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="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	
Herb Stratum (Plot Size : 30)				
1.	Monanthochloe littoralis	80	<input checked="" type="checkbox"/>	80.0% OBL
2.	Salicornia bigelovii	20	<input checked="" type="checkbox"/>	20.0% 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	= Total Cover	
Woody Vine Stratum (Plot Size : 30)				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="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)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>100</u>	x 1 = <u>100</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>
Column Totals: <u>100</u> (A)	<u>100</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 ≤ 3.0¹
- Problematic Hydrophytic Vegetation¹ (Explain)

¹ 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).

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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: WP1053_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 ¹	Location ²		
0 - 16	10YR	6/1	100				Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- 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)

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

Restrictive Layer (If observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater Terminal SPM Project **City/County:** Aransas **Sampling Date:** 2/14/2019
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Investigator(s): B. Bringham & A. Ostrowski **Section, Township, Range:** S N/A T N/A R N/A
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Flat **Slope:** 1 % 0.6 °
Subregion (LRR): LRR T **Lat:** 27.916953 **Long:** -97.134031 **Datum:** NAD 83
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded **NWI Classification:** PEM1C

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

Wetland Hydrology Indicators: <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)	
Field Observations: 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>		Wetland Hydrology Present? 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: **WP1053_WET_E2EM_C**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Sapling or Sapling/Shrub Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Shrub Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Herb Stratum (Plot Size : 30)			
1. <u>Spartina patens</u>	60 <input checked="" type="checkbox"/>	66.7%	FACW
2. <u>Borrichia frutescens</u>	25 <input checked="" type="checkbox"/>	27.8%	OBL
3. <u>Schinus terebinthifolia</u>	5 <input type="checkbox"/>	5.6%	FAC
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 45 20% of Total Cover: 18	90	= Total Cover	
Woody Vine Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="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)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species <u>25</u>	x 1 =	<u>25</u>
FACW species <u>60</u>	x 2 =	<u>120</u>
FAC species <u>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>
Column Totals: <u>90</u> (A)		<u>160</u> (B)

Prevalence Index = B/A = 1.778

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹ 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: WP1053_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				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe ¹	Location ²		
0 - 16	10YR	6/1	100				Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- 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)

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

Restrictive Layer (If observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater Terminal SPM Project **City/County:** Aransas **Sampling Date:** 2/14/2019
Applicant/Owner: Phillips 66 Pipeline, LLC **State:** TX **Sampling Point:** WP1053_WET_E2SS
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:** 27.916802 **Long:** -97.134011 **Datum:** NAD 83
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded **NWI Classification:** PEM1C

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

Wetland Hydrology Indicators: <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)	
Field Observations: 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>		Wetland Hydrology Present? 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: **WP1053_WET_E2SS**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (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
Sapling or Sapling/Shrub Stratum (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
Shrub Stratum (Plot Size : 30)			
1. <i>Tamarix chinensis</i>	60	92.3%	FACW
2. <i>Schinus terebinthifolia</i>	5	7.7%	FAC
3.	0	0.0%	
4.	0	0.0%	
5.	0	0.0%	
6.	0	0.0%	
50% of Total Cover: 33	20% of Total Cover: 13	65	= Total Cover
Herb Stratum (Plot Size : 30)			
1. <i>Borrichia frutescens</i>	20	100.0%	OBL
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%	
9.	0	0.0%	
10.	0	0.0%	
11.	0	0.0%	
12.	0	0.0%	
50% of Total Cover: 10	20% of Total Cover: 4	20	= Total Cover
Woody Vine Stratum (Plot Size : 30)			
1.	0	0.0%	
2.	0	0.0%	
3.	0	0.0%	
4.	0	0.0%	
5.	0	0.0%	
50% of Total Cover: 0	20% of Total Cover: 0	0	= Total Cover

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species <u>20</u>	x 1 =	<u>20</u>
FACW species <u>60</u>	x 2 =	<u>120</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>
Column Totals: <u>85</u>	(A)	<u>155</u> (B)

Prevalence Index = B/A = 1.824

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹ 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: WP1053_WET_E2SS

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 ¹	Location ²		
0 - 16	10YR	6/1	100				Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- 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)

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

Restrictive Layer (If observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater Terminal SPM Project **City/County:** Aransas **Sampling Date:** 2/14/2019
Applicant/Owner: Phillips 66 Pipeline, LLC **State:** TX **Sampling Point:** WP1053_WET_E2USP
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:** 27.917205 **Long:** -97.133511 **Datum:** NAD 83
Soil Map Unit Name: Dianola soils (Ds) **NWI Classification:** PEM1C

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

Wetland Hydrology Indicators: <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 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)	
Field Observations: 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>		Wetland Hydrology Present? 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: **WP1053_WET_E2USP**

		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot Size : 30)				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="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				
Sapling or Sapling/Shrub Stratum (Plot Size : 30)				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="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				
Shrub Stratum (Plot Size : 30)				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="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				
Herb Stratum (Plot Size : 30)				
1.	Salicornia bigelovii	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				
Woody Vine Stratum (Plot Size : 30)				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="checkbox"/>	0.0%
4.	_____	0	<input type="checkbox"/>	0.0%
5.	_____	0	<input type="checkbox"/>	0.0%
50% of Total Cover:	0	20% of Total Cover:	0	0
= Total Cover				

Dominance Test worksheet:

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

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

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

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>
Column Totals: <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 ≤ 3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹ 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: WP1053_WET_E2USP

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 ¹	Location ²		
0 - 16	10YR	6/1	100				Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- 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)

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

Restrictive Layer (If observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater Terminal SPM Project **City/County:** Aransas **Sampling Date:** 2/14/2019
Applicant/Owner: Phillips 66 Pipeline, LLC **State:** TX **Sampling Point:** WP1054_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:** 27.916551 **Long:** -97.134467 **Datum:** NAD 83
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponde **NWI Classification:** None

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

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

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

HYDROLOGY

Wetland Hydrology Indicators: <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)	
Field Observations: 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): _____		Wetland Hydrology Present? 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: **WP1054_UP**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Sapling or Sapling/Shrub Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Shrub Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Herb Stratum (Plot Size : 30)			
1. <u>Medicago lupulina</u>	60 <input checked="" type="checkbox"/>	60.0%	UPL
2. <u>Cynodon dactylon</u>	25 <input checked="" type="checkbox"/>	25.0%	FACU
3. <u>Lvsimachia arvensis</u>	15 <input type="checkbox"/>	15.0%	FACU
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="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	
Woody Vine Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="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: 0 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species <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>40</u>	x 4 =	<u>160</u>
UPL species <u>60</u>	x 5 =	<u>300</u>
Column Totals: <u>100</u>	(A)	<u>460</u> (B)

Prevalence Index = B/A = 4,600

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹ 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: WP1054_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 ¹	Location ²		
0 - 8	10YR	5/1	100				Sandy Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- 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)

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

Restrictive Layer (If observed):

Type: gravel
 Depth (inches): 8

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater Terminal SPM Project **City/County:** Aransas **Sampling Date:** 2/14/2019
Applicant/Owner: Phillips 66 Pipeline, LLC **State:** TX **Sampling Point:** WP1054_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:** 27.916319 **Long:** -97.134261 **Datum:** NAD 83
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponde **NWI Classification:** PEM1C

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

Wetland Hydrology Indicators: <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)	
Field Observations: 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>6</u>		Wetland Hydrology Present? 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: **WP1054_WET_E2EM_A**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Sapling or Sapling/Shrub Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Shrub Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Herb Stratum (Plot Size : 30)			
1. <u>Spartina patens</u>	45 <input checked="" type="checkbox"/>	47.4%	FACW
2. <u>Borrichia frutescens</u>	45 <input checked="" type="checkbox"/>	47.4%	OBL
3. <u>Salicornia bigelovii</u>	5 <input type="checkbox"/>	5.3%	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: 48 20% of Total Cover: 19	95	= Total Cover	
Woody Vine Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="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: 0 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species <u>50</u>	x 1 =	<u>50</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>
Column Totals: <u>100</u>	(A)	<u>460</u> (B)

Prevalence Index = B/A = 4,600

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹ 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: WP1054_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 ¹	Location ²		
0 - 16	10YR	6/1	100				Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- 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)

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

Restrictive Layer (If observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater Terminal SPM Project **City/County:** Aransas **Sampling Date:** 2/14/2019
Applicant/Owner: Phillips 66 Pipeline, LLC **State:** TX **Sampling Point:** WP1054_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):** Concave **Slope:** 1 % 0.6 °
Subregion (LRR): LRR T **Lat:** 27.915918 **Long:** -97.134848 **Datum:** NAD 83
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded **NWI Classification:** None

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input 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

Wetland Hydrology Indicators: <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)	
Field Observations: 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>		Wetland Hydrology Present? 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: **WP1054_WET_E2EM_B**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Sapling or Sapling/Shrub Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Shrub Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Herb Stratum (Plot Size : 30)			
1. <u>Fimbristylis castanea</u>	100 <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: 50 20% of Total Cover: 20	100	= Total Cover	
Woody Vine Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="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)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species <u>100</u>	x 1 =	<u>100</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>
Column Totals: <u>100</u>	(A)	<u>100</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 ≤ 3.0¹**
- Problematic Hydrophytic Vegetation¹ (Explain)**

¹ 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: WP1054_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 ²	Texture	Remarks
	Color (moist)	%		Color (moist)	%	Type ¹			
0 - 16	10YR	4/1	97	10YR	5/1	3	C	PL	Sandy Clay Loam

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- 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)

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

Restrictive Layer (If observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater Terminal SPM Project **City/County:** Aransas **Sampling Date:** 2/14/2019
Applicant/Owner: Phillips 66 Pipeline, LLC **State:** TX **Sampling Point:** WP1054_WET_E2SS
Investigator(s): B. Bringhurst & A. Ostrowski **Section, Township, Range:** S N/A T N/A R N/A
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Concave **Slope:** 0 % 0.0 °
Subregion (LRR): LRR T **Lat:** 27.916052 **Long:** -97.134841 **Datum:** NAD 83
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded **NWI Classification:** None

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input 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

Wetland Hydrology Indicators: <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 checked="" 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)	
Field Observations: 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>		Wetland Hydrology Present? 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: **WP1054_WET_E2SS**

		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot Size : 30)				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="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	
Sapling or Sapling/Shrub Stratum (Plot Size : 30)				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="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	
Shrub Stratum (Plot Size : 30)				
1.	<i>Schinus terebinthifolia</i> _____	100	<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: 50	20% of Total Cover: 20	100	= Total Cover	
Herb Stratum (Plot Size : 30)				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="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: 0	20% of Total Cover: 0	0	= Total Cover	
Woody Vine Stratum (Plot Size : 30)				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="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)

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>100</u>	x 3 = <u>300</u>
FACU species <u>0</u>	x 4 = <u>0</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>100</u>	(A) <u>300</u> (B)

Prevalence Index = B/A = 3.000

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹ 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: WP1054_WET_E2SS

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 ¹	Location ²		
0 - 16	10YR	6/1	100				Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- 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)

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

Restrictive Layer (If observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater Terminal SPM Project **City/County:** Aransas **Sampling Date:** 2/14/2019
Applicant/Owner: Phillips 66 Pipeline, LLC **State:** TX **Sampling Point:** WP1054_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:** 27.915747 **Long:** -97.134343 **Datum:** NAD 83
Soil Map Unit Name: Dianola soils (Ds) **NWI Classification:** PEM1C

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

Wetland Hydrology Indicators: <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)	
Field Observations: 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>		Wetland Hydrology Present? 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
Tree Stratum (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>	= Total Cover	
Sapling or Sapling/Shrub Stratum (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>	= Total Cover	
Shrub Stratum (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>	= Total Cover	
Herb Stratum (Plot Size : <u>30</u>)			
1. <u>Salicornia depressa</u>	3 <input checked="" type="checkbox"/>	60.0%	<u>OBL</u>
2. <u>Monanthochloe littoralis</u>	2 <input checked="" type="checkbox"/>	40.0%	<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>2.5</u> 20% of Total Cover: <u>1</u>	<u>5</u>	= Total Cover	
Woody Vine Stratum (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>	= 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)

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>
Column Totals: <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 ≤ 3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹ 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: WP1054_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 ¹	Location ²		
0 - 16	10YR	7/1	100				Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- 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)

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

Restrictive Layer (If observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater Terminal SPM Project **City/County:** Aransas **Sampling Date:** 2/14/2019
Applicant/Owner: Phillips 66 Pipeline, LLC **State:** TX **Sampling Point:** WP1054_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:** 27.916252 **Long:** -97.134528 **Datum:** NAD 83
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponde **NWI Classification:** None

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input 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

Wetland Hydrology Indicators: <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)	
Field Observations: 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>		Wetland Hydrology Present? 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: **WP1054_WET_E2USP_B**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Sapling or Sapling/Shrub Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Shrub Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Herb Stratum (Plot Size : 30)			
1. <u>Salicornia depressa</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	
Woody Vine Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="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)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

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

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹ 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: WP1054_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				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Tvpe ¹	Location ²		
0 - 16	10YR	5/1	100				Sand	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- 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)

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

Restrictive Layer (If observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater Terminal SPM Project **City/County:** Aransas **Sampling Date:** 2/14/2019
Applicant/Owner: Phillips 66 Pipeline, LLC **State:** TX **Sampling Point:** WP1055_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:** 27.911436 **Long:** -97.138223 **Datum:** NAD 83
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded **NWI Classification:** None

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input 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

Wetland Hydrology Indicators: <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)	
Field Observations: 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): _____		Wetland Hydrology Present? 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: **WP1055_UP**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Sapling or Sapling/Shrub Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Shrub Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Herb Stratum (Plot Size : 30)			
1. <u>Cynodon dactylon</u>	40 <input checked="" type="checkbox"/>	44.4%	FACU
2. <u>Schizachyrium scoparium</u>	15 <input checked="" type="checkbox"/>	16.7%	FACU
3. <u>Ambrosia artemisiifolia</u>	10 <input type="checkbox"/>	11.1%	FACU
4. <u>Borrchia frutescens</u>	10 <input type="checkbox"/>	11.1%	OBL
5. <u>Andropogonglomeratus</u>	10 <input type="checkbox"/>	11.1%	FACW
6. <u>Helianthus arborescens</u>	5 <input type="checkbox"/>	5.6%	UPL
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 45 20% of Total Cover: 18	90	= Total Cover	
Woody Vine Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="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: 0 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	<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>65</u> x 4 =	<u>260</u>
UPL species	<u>5</u> x 5 =	<u>25</u>
Column Totals:	<u>90</u> (A)	<u>315</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 ≤ 3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹ 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: WP1055_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 ¹	Location ²		
0 - 16	10YR	5/1	100				Sandy Loam	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- 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)

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

Restrictive Layer (If observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater Terminal SPM Project **City/County:** Aransas **Sampling Date:** 2/14/2019
Applicant/Owner: Phillips 66 Pipeline, LLC **State:** TX **Sampling Point:** WP1055_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:** 27.911426 **Long:** -97.137896 **Datum:** NAD 83
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded **NWI Classification:** None

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

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

Hydrophytic Vegetation Present? Yes <input 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

Wetland Hydrology Indicators:	
<u>Primary Indicators (Minimum of one required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (Minimum of 2 required)</u> <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: 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>	Wetland Hydrology Present? 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: **WP1055_WET_PEM_A**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Sapling or Sapling/Shrub Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Shrub Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Herb Stratum (Plot Size : 30)			
1. <u>Borrhichia frutescens</u>	30 <input checked="" type="checkbox"/>	42.9%	OBL
2. <u>Spartina patens</u>	25 <input checked="" type="checkbox"/>	35.7%	FACW
3. <u>Panicum virgatum</u>	15 <input checked="" type="checkbox"/>	21.4%	FAC
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 35 20% of Total Cover: 14	70	= Total Cover	
Woody Vine Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="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: 0 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species <u>30</u>	x 1 =	<u>30</u>
FACW species <u>25</u>	x 2 =	<u>50</u>
FAC species <u>15</u>	x 3 =	<u>45</u>
FACU species <u>0</u>	x 4 =	<u>0</u>
UPL species <u>0</u>	x 5 =	<u>0</u>
Column Totals: <u>90</u>	(A)	<u>315</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 ≤ 3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹ 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: WP1055_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 ²	Texture	Remarks
	Color (moist)	%	%	Color (moist)	%	Type ¹				
0 - 16	10YR	4/1	97	10YR	5/6	3	C	PL, M	Sandy Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- 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)

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

Restrictive Layer (If observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater Terminal SPM Project **City/County:** Aransas **Sampling Date:** 2/14/2019
Applicant/Owner: Phillips 66 Pipeline, LLC **State:** TX **Sampling Point:** WP1055_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:** 27.911525 **Long:** -97.137764 **Datum:** NAD 83
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded **NWI Classification:** None

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input 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

Wetland Hydrology Indicators: <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)	
Field Observations: 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>		Wetland Hydrology Present? 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: **WP1055_WET_PEM_B**

		Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot Size : 30)				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="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				
Sapling or Sapling/Shrub Stratum (Plot Size : 30)				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="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				
Shrub Stratum (Plot Size : 30)				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="checkbox"/>	0.0%
3.	_____	0	<input type="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				
Herb Stratum (Plot Size : 30)				
1.	<u>Spartina patens</u>	95	<input checked="" type="checkbox"/>	97.9% FACW
2.	<u>Borrichia frutescens</u>	2	<input type="checkbox"/>	2.1% 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:	49	20% of Total Cover:	19	97
= Total Cover				
Woody Vine Stratum (Plot Size : 30)				
1.	_____	0	<input type="checkbox"/>	0.0%
2.	_____	0	<input type="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: 3 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>2</u>	x 1 = <u>2</u>
FACW species <u>95</u>	x 2 = <u>190</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>
Column Totals: <u>97</u> (A)	<u>192</u> (B)

Prevalence Index = B/A= 1.979

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹ 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: WP1055_WET_PEM_B

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

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

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- 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)

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

Restrictive Layer (If observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater Terminal SPM Project **City/County:** Aransas **Sampling Date:** 2/14/2019
Applicant/Owner: Phillips 66 Pipeline, LLC **State:** TX **Sampling Point:** WP1055_WET_PSS
Investigator(s): B. Bringhurst & A. Ostrowski **Section, Township, Range:** S N/A T N/A R N/A
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Concave **Slope:** 0 % 0.0 °
Subregion (LRR): LRR T **Lat:** 27.911495 **Long:** -97.137748 **Datum:** NAD 83
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponde **NWI Classification:** None

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input 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

Wetland Hydrology Indicators:	
<u>Primary Indicators (Minimum of one required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> Aquatic Fauna (B13) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Marl Deposits (B15) (LRR U) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<u>Secondary Indicators (Minimum of 2 required)</u> <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5) <input type="checkbox"/> Sphagnum moss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>4</u> Water Table Present? Yes <input type="radio"/> No <input checked="" type="radio"/> Depth (inches): _____ Saturation Present? (includes capillary fringe) Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>0</u>	Wetland Hydrology Present? 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: **WP1055_WET_PSS**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Sapling or Sapling/Shrub Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Shrub Stratum (Plot Size : 30)			
1. <u>Schinus terebinthifolia</u>	70 <input checked="" type="checkbox"/>	87.5%	FAC
2. <u>Triadica sebifera</u>	10 <input type="checkbox"/>	12.5%	FAC
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 40 20% of Total Cover: 16	80	= Total Cover	
Herb Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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: 0 20% of Total Cover: 0	0	= Total Cover	
Woody Vine Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="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)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 80 x 3 = 240

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column Totals: 80 (A) 240 (B)

Prevalence Index = B/A = 3,000

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹ 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: WP1055_WET_PSS

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

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

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- 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)

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

Restrictive Layer (If observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater Terminal SPM Project **City/County:** Aransas **Sampling Date:** 2/25/2019
Applicant/Owner: Phillips 66 Pipeline, LLC **State:** TX **Sampling Point:** WP1056_UP
Investigator(s): B. Bringhurst & R. Conley **Section, Township, Range:** S N/A T N/A R N/A
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Flat **Slope:** 1 % 0.6 °
Subregion (LRR): LRR T **Lat:** 27.912361 **Long:** -97.137811 **Datum:** NAD 83
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponde **NWI Classification:** None

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

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

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

HYDROLOGY

Wetland Hydrology Indicators: <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)	
Field Observations: 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): _____		Wetland Hydrology Present? 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: **WP1056_UP**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Sapling or Sapling/Shrub Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Shrub Stratum (Plot Size : 30)			
1. <u>Schinus terebinthifolia</u>	10 <input checked="" type="checkbox"/>	100.0%	FAC
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 5 20% of Total Cover: 2	10	= Total Cover	
Herb Stratum (Plot Size : 30)			
1. <u>Smilax bona-nox</u>	30 <input checked="" type="checkbox"/>	31.6%	FAC
2. <u>Schizachyrium scrobarium</u>	30 <input checked="" type="checkbox"/>	31.6%	FACU
3. <u>Panicum virgatum</u>	25 <input checked="" type="checkbox"/>	26.3%	FAC
4. <u>Leucaena leucocephala</u>	5 <input type="checkbox"/>	5.3%	FACU
5. <u>Helianthus arborescens</u>	5 <input type="checkbox"/>	5.3%	UPL
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 48 20% of Total Cover: 19	95	= Total Cover	
Woody Vine Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 0 20% of Total Cover: 0	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 65 x 3 = 195

FACU species 35 x 4 = 140

UPL species 5 x 5 = 25

Column Totals: 105 (A) 360 (B)

Prevalence Index = B/A = 3.429

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹ 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: WP1056_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 ¹	Location ²		
0 - 16	10YR	4/1	100				Sandy Clay	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- 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)

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

Restrictive Layer (If observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater Terminal SPM Project **City/County:** Aransas **Sampling Date:** 2/25/2019
Applicant/Owner: Phillips 66 Pipeline, LLC **State:** TX **Sampling Point:** WP1056_WET_PSS
Investigator(s): B. Bringhurst & R. Conley **Section, Township, Range:** S N/A T N/A R N/A
Landform (hillslope, terrace, etc.): Flat **Local relief (concave, convex, none):** Concave **Slope:** 1 % 0.6 °
Subregion (LRR): LRR T **Lat:** 27.912316 **Long:** -97.137999 **Datum:** NAD 83
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponde **NWI Classification:** None

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Hydric Soil Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Wetland Hydrology Present? Yes <input 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 not present. This is not a wetland.	

HYDROLOGY

Wetland Hydrology Indicators: <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 checked="" 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)	
Field Observations: Surface Water Present? Yes <input checked="" type="radio"/> No <input type="radio"/> Depth (inches): <u>11</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>		Wetland Hydrology Present? 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: **WP1056_WET_PSS**

	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status
Tree Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Sapling or Sapling/Shrub Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="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	
Shrub Stratum (Plot Size : 30)			
1. <u>Schinus terebinthifolia</u>	65 <input checked="" type="checkbox"/>	92.9%	FAC
2. <u>Triadica sebifera</u>	5 <input type="checkbox"/>	7.1%	FAC
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 35 20% of Total Cover: 14	70	= Total Cover	
Herb Stratum (Plot Size : 30)			
1. <u>Smilax bona-nox</u>	10 <input checked="" type="checkbox"/>	100.0%	FAC
2. _____	0 <input type="checkbox"/>	0.0%	_____
3. _____	0 <input type="checkbox"/>	0.0%	_____
4. _____	0 <input type="checkbox"/>	0.0%	_____
5. _____	0 <input type="checkbox"/>	0.0%	_____
6. _____	0 <input type="checkbox"/>	0.0%	_____
7. _____	0 <input type="checkbox"/>	0.0%	_____
8. _____	0 <input type="checkbox"/>	0.0%	_____
9. _____	0 <input type="checkbox"/>	0.0%	_____
10. _____	0 <input type="checkbox"/>	0.0%	_____
11. _____	0 <input type="checkbox"/>	0.0%	_____
12. _____	0 <input type="checkbox"/>	0.0%	_____
50% of Total Cover: 5 20% of Total Cover: 2	10	= Total Cover	
Woody Vine Stratum (Plot Size : 30)			
1. _____	0 <input type="checkbox"/>	0.0%	_____
2. _____	0 <input type="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: 3 (A)

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

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

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by: _____

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 80 x 3 = 240

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column Totals: 80 (A) 240 (B)

Prevalence Index = B/A = 3,000

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is > 50%

3 - Prevalence Index is ≤ 3.0¹

Problematic Hydrophytic Vegetation¹ (Explain)

¹ 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: WP1056_WET_PSS

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

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

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. ²Location: 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 Soils³:

- 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)

³Indicators 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:

Appendix C
Photographic Log (see enclosed electronic copy)