APPENDIX F
INSHORE WETLAND DELINEATION REPORT

WETLAND DELINEATION REPORT FOR INSHORE COMPONENTS OF THE PROPOSED BLUEWATER SPM PROJECT IN ARANSAS, NUECES, AND SAN PATRICIO COUNTIES, TEXAS

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1 INTRODUCTION

Lloyd Engineering, Inc. (Lloyd) retained SWCA Environmental Consultants (SWCA) to conduct a delineation of potential waters of the U.S., commonly referred to as a wetland delineation, for inshore components associated with the proposed Bluewater SPM Project located in Aransas, Nueces, and San Patricio Counties, Texas. The proposed Bluewater SPM Project will be located within the U.S. Army Corps of Engineers (USACE) Galveston District area of responsibility. Refer to Appendix A for a vicinity map depicting the location of the survey area investigated for inshore components associated with the Bluewater SPM Project.

The proposed Bluewater SPM Project consist of the construction and operation of onshore, inshore, and offshore components including a deepwater port to provide a logistical solution for the safe and reliable export of crude oil. This wetland delineation report presents the results of field surveys conducted for inshore project components including two 30-inch-diameter pipelines, booster station, and associated construction workspaces. The proposed inshore pipeline infrastructure originates near Aransas Pass, Texas, crosses to Stedman Island, and parallels State Highway 361 onto Harbor Island where a booster station will be positioned. From this point, the inshore pipelines will cross Lydia Ann Channel onto San Jose Island to extend offshore into the Gulf of Mexico. Refer to Figure 1 (Vicinity Map) in Appendix A for a depiction of the survey area investigated for inshore components associated with the proposed Bluewater SPM Project.

According to the USACE, waters of the U.S. include territorial seas, tidal waters, traditional navigable waters, interstate waters, and the adjacent, contributing, or impoundments of these waters (e.g., rivers, creeks, streams, lakes, reservoirs). Special aquatic resources associated with these waters are also considered waters of the U.S. and include sanctuaries and refuges, wetlands, mud flats, vegetated shallows, coral reefs, and riffle and pool complexes.

Wetlands are typically the most common special aquatic resources present and are defined by the USACE as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions” (40 Code of Federal Regulations [CFR] 230.3(t)). Based on this definition, for an area to be considered a wetland it must possess the following parameters under normal circumstances: 1) a predominance of plants adapted to live in water or saturated soils (i.e., hydrophytic vegetation), 2) soil characteristics of frequent saturation (i.e., hydric soils), and 3) the presence of hydrology showing evidence of regular flooding or ponding (i.e., wetland hydrology).

2 METHODS

2.1 Resources Review

Prior to performing the delineation, SWCA conducted a resources review of available background information to help identify the portions of the project area most likely to contain wetlands and/or waterbodies. Resources reviewed included historic aerial photography, U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) data, U.S. Geological Survey (USGS) National Hydrography Dataset (NHD) data, historic USGS topographic quadrangles, and available Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) data.

2.2 Wetlands

SWCA conducted field surveys of the project area during January and February 2019, following the wetland delineation guidelines provided in both the *Corps of Engineers Wetlands Delineation Manual* (Manual) (USACE 1987) and the *Regional Supplement to the Corps* of *Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region* (Regional Supplement) (USACE 2010). As part of the delineation efforts, SWCA traversed and assessed the project area for the presence or absence of the three wetland parameters (i.e., hydrophytic vegetation, hydric soils, and wetland hydrology).

Data sheets, which represent areas of uniformity (i.e., similar vegetation, soils, and hydrology), were completed at select locations (i.e., data points) throughout the project area to differentiate wetland and non-wetland areas by documenting the presence or absence of the wetland parameters (Appendix B). Data point locations included wetland/non-wetland boundaries, NWI feature locations and areas suggestive of inundation or saturation in aerial imagery evaluated during the resources review, and the various non-wetland vegetation community types encountered within the project area. At each data point, SWCA took photographs to support the information recorded on the data sheets and document the general conditions observed in the field. A subset of the photographs is provided in the photographic log in Appendix C.

2.2.1 Vegetation Community Types and Hydrophytic Vegetation

Vegetation community types within the project area were categorized based on the uppermost layer of vegetation into one of three categories: emergent/herbaceous, scrub-shrub, or forested. Wetland communities were further described using the *Classification* of Wetlands and Deepwater Habitats of the United States (Cowardin et al. 1979). Wetland and non-wetland vegetation communities were differentiated by the presence or absence of hydrophytic vegetation, respectively.

Hydrophytic vegetation refers to a plant species adapted to survive in saturated or inundated soils for at least 5 percent of the growing season. A given area is said to have hydrophytic vegetation when the prevalence of hydrophytes (water-adapted plants) exceeds that of non-hydrophytes based on species wetland indicator status ratings assigned by the USACE. To assess this parameter consistently with the Regional Supplement, SWCA personnel listed all plants by strata within circular sample plots centered at each data point as well as each plant species' absolute areal cover to derive dominance and prevalence values. Then, based on the USACE National Wetland Plant List: 2016 Wetland Ratings, SWCA personnel assigned the appropriate wetland indicator status rating to each species and compared the relative proportions of hydrophytes to non-hydrophytes to determine if the assessed plant community met the hydrophytic vegetation parameter (Lichvar et al. 2016).

2.2.2 Hydric Soils

Hydric soils typically have characteristics indicating that they formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper strata (Soil Conservation Service 1994). Characteristic indicators of hydric soils are described in the 2010 Natural Resources Conservation Service (NRCS) *Field* Indicators *of Hydric Soils in the United States, Version 7.0* (NRCS 2010). Soils that do not match any of the accepted hydric soil indicators are considered non-hydric. To assess this parameter consistent with the Regional Supplement, SWCA personnel extracted soil pedons to a depth of no more than 20 inches at the data points and recorded soil characteristics (e.g., color, texture, redoximorphic features) necessary for comparison to known indicators. The hydric soil parameter was met when the soil profile matched the description of a regionally accepted hydric soil indicator.

2.2.3 Wetland Hydrology

Wetland hydrology refers to observable characteristics that confirm recent or continuing inundation and/or soil saturation within an assessed area during the growing season. Direct observation of continuous saturation or inundation within 12 inches of the soil surface for a duration of no less than 14 consecutive days will meet the standard for hydrology specified in the 2005 USACE Technical Standard for Water Table Measurements of Potential Wetlands (USACE 2005a). Because on-site investigations to accurately determine the presence or absence of this standard are often impractical, the Regional Supplement describes a variety of readily observable primary (more reliable) and secondary (less reliable) hydrologic indicators that serve as sufficient evidence of wetland hydrology, when present. In accordance with the Regional Supplement, all indications of periodic inundation and/or soil saturation within an assessed area were recorded and compared to known wetland hydrology indicators. If the area displayed at least one primary indicator or two secondary indicators, the wetland hydrology parameter was met.

Of the three wetland assessment parameters, wetland hydrology is perhaps the most difficult to accurately assess because it is both transitory and influenced by physical and climatic factors (e.g., precipitation, soil permeability, stratigraphy, topography). In this region, the normality of precipitation (primarily as rainfall) has a substantial temporal influence on wetland hydrology. This is particularly true for the summer months when evapotranspiration rates are highest and typically result in receding water tables. Therefore, it is essential to assess wetland hydrology with respect to rainfall normality within the project area. SWCA accomplished this by employing the direct antecedent rainfall evaluation method (DAREM) (Sprecher and Warne 2000). This method assesses an area's wetland hydrologic condition by comparing prior 3-month precipitation values to 30-year norms available from the NRCS in tabular form as Wetlands Evaluation Tables (WETS) (NRCS 1997). Evaluation using DAREM classifies the wetland hydrologic condition of an area into one of three categories: drier than normal, normal, or wetter than normal. SWCA considered this assessment, along with rainfall events during or shortly before the delineation, to determine if identified wetland hydrology indicators should be considered normal or resultant of wetter than normal hydrologic conditions, or if hydrology indicators were lacking due to abnormal or problematic conditions.

2.3 Waterbodies

SWCA delineated all waterbodies within the project area that are tidal or possess an ordinary high water mark (OHWM). At each waterbody, SWCA took photographs and documented its general characteristics (e.g., tidal indicators, OHWM dimensions, flow, substrate, etc.).

Tidal waterbodies, if present, were delineated at the high tide line (HTL) which is defined by the USACE as "the line of intersection of the land with the water's surface at the maximum height reached by a rising tide" (33 CFR 328.3(d)). The HTL includes periodic extreme tides (e.g., spring high tide) while excluding the effects of strong winds and storm surges. The HTL, if present, was determined with actual data, when readily available, or via accepted indicative characteristics such as a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, vegetation lines, tidal gauges, or other suitable means.

Non-tidal waterbodies, if present, were delineated at the OHWM using the recommendations of the 2005 USACE Regulatory Guidance Letter 05-05: Ordinary High Water Mark Identification (USACE 2005b). An OHWM is a line on the shore established by the fluctuations of water during ordinary high water flows and indicated by physical characteristics such as "a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and

debris, or other appropriate means that consider the characteristics of the surrounding areas" (33 CFR 328.3(e)).

2.4 Mapping

SWCA used a Trimble Geo-Explorer 7X series global positioning system (GPS) unit to geographically reference features, such as data point locations and wetland/waterbody boundaries, identified during the delineation. SWCA used geographic information system (GIS) software to differentially correct (i.e., post-process) collected features, calculate areas, and generate the attached wetland delineation map (see Appendix A). The point, line, and polygon data displayed on the attached maps, though collected with a GPS unit capable of submeter accuracy, are for review purposes only and do not represent a professional civil survey. Data points and delineated features are identified by a unique identifier. Wetlands, streams/channels, and ponds, if present, are identified by "WA," "S," and "P" as the first character, respectively, and followed by a team designation "A" and a unique sequential number beginning with 01. For example, WA001 is the first wetland that was delineated by team A. Data points are identified by "DP" followed by the team letter designation, a unique sequential number beginning with 001, an underscore, and the type of vegetation community in which the data point is located (e.g., "PEM" for emergent wetland). For example, DPA003_PEM represents the third data point taken by team A within an emergent wetland.

3 RESULTS

3.1 Wetlands

SWCA delineated 43 distinct wetland areas totaling 75.827 acres within the survey area. Of the 43 wetlands mapped, eleven wetlands were Palustrine Emergent (PEM), one Palustrine Scrub/Shrub (PSS), 22 Estuarine Intertidal Emergent (E2EM), eight Estuarine Intertidal Scrub/Shrub (E2SS), and one Estuarine Intertidal Unconsolidated Shore (E2US) (Table 1). See Figure 2 in Appendix A for the location of wetlands and data points within the project area. Photographs of select wetlands are provided in Appendix C. Refer to Table 1 for the list of the delineated wetlands and their characteristics.

Table 1. Wetland Characteristics

Wetland ID	Map Sheet No. (Figure 2)	Vegetation Community Type	Acreage
WA001	1	PEM	0.460
WA002	1	PEM	0.445
WA003	1	PEM	0.253
WA004	1	E2SS	1.135
WA005	1	E2EM	1.961
WA006	1, 2	E2EM	14.528
WA006	1, 2	E2SS	4.573
WA007	2	E2EM	0.563
WA008	1	E2EM	0.463
WA009	3	E2EM	0.056
WA010	3	E2EM	0.293

Wetland ID	Map Sheet No. (Figure 2)	Vegetation Community Type	Acreage
WA011	5	PEM	0.719
WA012	5	E2EM	2.176
WA013	5	PEM	5.538
WA014	5	E2SS	0.212
WA015	3	E2EM	1.968
WA016	4, 5	PEM	0.832
WA017	6	PEM	0.053
WA018	5	PEM	0.342
WA019	5	PEM	0.415
WA020	5	E2SS	0.024
WB002	5	E2EM	0.510
WB003	4, 5	PSS	3.399
WB004	4	E2EM	0.032
WB005	4	E2SS	0.595
WB006	4, 5	E2SS	0.226
WB007	4	E2EM	0.064
WB008	4	E2EM	0.087
WB009	4	E2EM	0.038
WB010	4	E2EM	0.013
WB011	4	E2EM	0.077
WB012	4	E2EM	0.133
WB013	4	E2EM	0.248
WB013	3, 4	E2SS	0.638
WB014	3, 4	E2EM	0.055
WB014	3	E2SS	2.082
WB015	3	E2EM	0.429
WB016	3	E2EM	0.074
WB018	6	E2EM	1.096
WC001	6	PEM	14.410
WC002	6	E2EM	0.014
WC003	6	E2US	12.452
WC004	6	PEM	2.142
		PEM Wetlands Subtotal	**25.610**
		PSS Wetlands Subtotal	**3.399**
		E2EM Wetlands Subtotal	**24.880**
		E2SS Wetlands Subtotal	**9.485**

Wetland ID	Map Sheet No. (Figure 2)	Vegetation Community Type	Acreage
		E2US Wetlands Subtotal	**12.452**
		Total	**75.827**

3.1.1 Vegetation Communities

SWCA observed seven vegetation community types within the project area: five wetland vegetation communities (i.e., palustrine emergent wetlands, estuarine intertidal emergent wetlands, estuarine unconsolidated shore wetlands, palustrine scrub-shrub wetlands, and estuarine intertidal scrub-shrub wetlands) and two upland vegetation communities (i.e., herbaceous uplands and scrub-shrub uplands). The species identified at each data point, along with their areal coverage, are recorded on the data sheets in Appendix B. A photographic log, which includes a representative subset of all the vegetation communities observed within the project area as viewed from select data points, is provided in Appendix C. The dominant species identified within each vegetation community type are listed below.

Palustrine Emergent Wetland. The palustrine emergent wetland community consists of a prevalence of hydrophytic non-woody vegetation less than 3 feet in height and are located along depressional areas within the project area. Dominant herbaceous species include bushy bluestem (*Andropogon glomeratus*), turtleweed (*Batis maritima*), sea ox-eye (*Borrichia frutescens*), shore grass (*Distichlis littoralis*), coastal saltgrass (*D. spicata*), Roemer's rush (*Juncus roemerianus*), salt-meadow cord grass (*Spartina patens*), gulf cord grass (*S. spartinae*), three-square (*Schoenoplectus pungens*), and broad-leaf cat-tail (*Typha latifolia*).

Estuarine Intertidal Emergent Wetland. The estuarine intertidal emergent wetland community consists of a prevalence of hydrophytic non-woody vegetation less than 3 feet in height and are located near coastal waterbodies within the project area. Dominant herbaceous species include black mangrove (*Avicennia germinans*), turtleweed, sea ox-eye, Carolina desert-thorn (*Lycium carolinianum*), shore grass, coastal saltgrass, common spike-rush (*Eleocharis palustris*), dwarf saltwart (*Salicornia bigelovii*), woody saltwort (*S. depressa*), shoreline sea-purslane (*Sesuvium portulacastrum*), saltwater cord grass (*Spartina alterniflora*), gulf cord grass, three-square, and broad-leaf cat-tail.

Estuarine Unconsolidated Shore Wetland. The estuarine unconsolidated shore wetland community consists of a prevalence of hydrophytic non-woody vegetation less than 3 feet in height and are located near coastal shores within the project area. Dominant herbaceous species include shore grass and woody saltwort.

Palustrine Scrub-Shrub Wetland. The palustrine scrub-shrub wetland community consists of a prevalence of hydrophytic woody species 3 to 20 feet in height and less than 3 inches in diameter at breast height located along depressional areas within the project area. The dominant shrub and sapling species include Brazilian peppertree (*Schinus terebinthifolius*). Dominant herbaceous species include common spike-rush.

Estuarine Intertidal Scrub-Shrub Wetland. The estuarine intertidal scrub-shrub wetland community consists of a prevalence of hydrophytic woody species 3 to 20 feet in height and less than 3 inches in diameter at breast height located near coastal waterbodies within the project area. The dominant shrub and sapling species include black mangrove. Dominant herbaceous species include turtleweed, shore grass, dwarf saltwart, woody saltwort, and saltwater cord grass.

Herbaceous Upland. The herbaceous upland community consists of non-wetland areas dominated by nonwoody vegetation. Dominant herbaceous species include perennial ragweed (*Ambrosia psilostachya*), bushy bluestem, sea ox-eye, yellow bluestem (*Bothriochloa ischaemum*), Bermudagrass (*Cynodon dactylon*), common sunflower (*Helianthus annuus*), nimblewill (*Muhlenbergia schreberi*), cactus apple (*Opuntia engelmannii*), and little bluestem (*Schizachyrium scoparium*).

Scrub-shrub Upland. The scrub-shrub upland class consists of non-wetland areas with canopies dominated by woody vegetation such as immature trees and shrubs. The scrub-shrub upland within the project area is comprised of a sapling/shrub layer dominated by Brazilian peppertree and saltcedar (*Tamarix ramosissima*). The herbaceous layer is comprised predominantly of Bermudagrass, nimblewill, cactus apple, gulf cord grass, and white clover (*Trifolium repens*).

3.1.2 Soils

According to the NRCS Web Soil Survey for Aransas, Nueces, and San Patricio Counties, Texas (NRCS 2019), five soil map units and three miscellaneous (Water, Beaches, and Tidal Flats) are present within the project area. Of the five soil map units, four are listed as including hydric components (Table 2). Brief descriptions of the NRCS soil map units present within the project area are provided in Appendix D.

Although an NRCS hydric listing alone is generally insufficient to determine whether soils for a site are hydric, it does indicate that suitable soil properties or conditions exist that promote the formation of hydric soil conditions. Therefore, the portions of the project area depicted as containing hydric soil map units were subjected to greater scrutiny with respect to the presence of hydric soil indicators.

Wetland areas observed within the project area displayed four hydric soil indicators: sandy redox, sandy gleyed matrix, depleted matrix, and loamy gleyed matrix. Non-wetland (i.e., upland) areas either failed to display hydric soil indicators or displayed hydric soils but failed to meet vegetation or hydrology parameters (or both). Refer to Appendix B for datapoint-specific soil observations.

Table 2. NRCS-Mapped Soils and Their Hydric Characteristics

Map Unit Name (Unit Code)	County Code	Hydric Map Unit (Yes/No)	Hydric Component Characteristics			Acreage within Project Area†
			Series Name (Unit Percent)	Landform	Hydric Criteria*	
Ma	TX355	Yes	Ijam (85%)	Flats	2	122.50
Mu	TX355	Yes	Mustang (85%)	Barrier Flats	2	76.30
Mu	TX620	Yes	Mustang (85%)	Barrier Flats	2,3	48.29
Ps	TX620	No	Psamments (80%)	Foredunes	n/a	9.76
Ds	TX620	Yes	Dianola (85%)	Strand Plains	2,4	1.22

* Hydric Criteria: 2 = somewhat poorly to very poorly drained soils that have a shallow water table (i.e., at a depth of less than 1 foot) during the growing season; 3 = soils that are frequently ponded (i.e., greater than 50 percent of years) for greater than 7 days duration during the growing season. 4 = soils that are frequently flooded (i.e., greater than 50 percent of years) for greater than 7 days duration during the growing season.

† Acreages rounded to the nearest 0.01 acre.

3.1.3 Hydrology

The DAREM wetland hydrologic condition for January and February 2019 were calculated using WETS and precipitation data from the Port Aransas weather station located approximately 0.75 miles south of the proposed project area in Nueces County, Texas (Tables 3 and 4) (Sprecher and Warne 2000; U.S. Department of Agriculture 2019; NOAA 2019). The precipitation and 30-year normal range values used to calculate the wetland hydrologic condition at the time of the survey are provided in Table 3. According

to the DAREM, the project area was experiencing wetter than normal hydrologic conditions during the first month of delineation surveys and normal hydrologic conditions in the second month. Refer to Appendix B for datapoint-specific wetland hydrology observations.

Wetland hydrology indicators observed in the project area included both primary wetland hydrology indicators (i.e., algal mat/crust, aquatic invertebrates, hydrogen sulfide odor, saturation, surface water, and water marks) and secondary wetland hydrology indicators (i.e., crayfish burrows, a positive FAC-neutral test, sparsely vegetated concave surface). See Appendix B for datapoint-specific wetland hydrology observations.

Table 3. Project Area Wetland Hydrologic Conditions During January 2019

Prior Month		WETS Percentile (inches)		Measured Rainfall	Rainfall Condition*	Month Weight†	Score‡
		30th	70th				
1st	December 2018	0.65	1.79	0.93	2	3	6
2nd	November 2018	1.24	3.67	3.89	3	2	6
3rd	October 2018	1.42	4.61	6.29	3	1	3
DAREM Score (i.e., Scores Total)							**15**

DAREM Score	6	7	8	9	10	11	12	13	14	**15**	16	17	18
DAREM Wetland Hydrologic Condition	Drier than normal				Normal					**Wetter than normal**			

Data source: Port Aransas weather station (Global Historical Climatology Network: USC00417170).

* Month Conditions are 1 for Prior Month Rainfall that were less than the 30th WETS percentile, 2 for Prior Month Rainfall that were between the 30th and 70th WETS percentiles, and 3 for Prior Month Rainfall that were greater than the 70th WETS percentile.

† Month Weights are 3 for the month just prior, 2 for the second prior month, and 1 for the third prior month.

‡ Month Scores are the product of the Month Condition and Month Weight.

Table 4. Project Area Wetland Hydrologic Conditions During February 2019

Prior Month		WETS Percentile (inches)		Measured Rainfall	Rainfall Condition*	Month Weight†	Score‡
		30th	70th				
1st	January 2019	1.10	2.85	1.99	2	3	6
2nd	December 2018	0.65	1.79	0.93	2	2	4
3rd	November 2018	1.24	3.67	3.89	3	1	3
DAREM Score (i.e., Scores Total)							**13**

DAREM Score	6	7	8	9	10	11	12	**13**	14	15	16	17	18
DAREM Wetland Hydrologic Condition	Drier than normal				**Normal**					Wetter than normal			

Data source: Port Aransas weather station (Global Historical Climatology Network: USC00417170).

* Month Conditions are 1 for Prior Month Rainfall that were less than the 30th WETS percentile, 2 for Prior Month Rainfall that were between the 30th and 70th WETS percentiles, and 3 for Prior Month Rainfall that were greater than the 70th WETS percentile.

† Month Weights are 3 for the month just prior, 2 for the second prior month, and 1 for the third prior month.

‡ Month Scores are the product of the Month Condition and Month Weight.

3.2 Waterbodies

SWCA identified 12 waterbodies within the survey area consisting of four ditches, two streams, one coastal inlet, three ponds, one bay, and the Gulf of Mexico, totaling 13.781 acres. The identified waterbodies and their characteristics are shown in Table 5. Refer to the delineation map in Appendix A for the location of the waterbodies within the project area. Photographs of select waterbodies are provided in Appendix C.

Table 5. Waterbody Characteristics

Waterbody ID	Map Sheet No. (Figure 2)	USGS Name	Flow/ Permanence	Type	OHWM Width (feet)	Length within Survey Area (linear feet)	Acreage within Survey Area*
SA001	1	N/A	Ephemeral	Ditch	8	141.8	0.027
SA002	1	N/A	Ephemeral	Ditch	1	294.1	0.007
SA003	1	N/A	Ephemeral	Ditch	3	280.1	0.019

Waterbody ID	Map Sheet No. (Figure 2)	USGS Name	Flow/ Permanence	Type	OHWM Width (feet)	Length within Survey Area (linear feet)	Acreage within Survey Area*
SA005	5	N/A	Ephemeral	Ditch	2	1078.5	0.048
SA006	5	N/A	Intermittent	Stream	12	387.0	0.107
SA007	5	N/A	Perennial	Stream	20	839.2	0.445
PA001	3	N/A	Perennial	Pond	N/A	N/A	0.091
PB002	3	N/A	Perennial	Pond	N/A	N/A	0.053
PB003	6	N/A	Perennial	Pond	N/A	N/A	0.342
PB001	3	N/A	Perennial	Coastal Inlet	N/A	N/A	0.196
SC001	6	Lydia Ann Channel	Perennial	Channel/Bay	N/A	N/A	6.757
SC002	6	Gulf of Mexico	Perennial	Ocean	N/A	N/A	4.941
				Ephemeral Channel Subtotal		**1,794.6**	**0.101**
				Intermittent Channel Subtotal		**387.0**	**0.107**
				Perennial Channel Subtotal		**839.2**	**0.445**
				Pond Subtotal		**N/A**	**0.486**
				Coastal Inlet, Bay, and Ocean Subtotal		**N/A**	**11.894**
Total						**4,717.9**	**13.033**

* Acreages were rounded to the nearest 0.001 acre; Centerline length was rounded to the nearest 0.1 ft.

4 SUMMARY AND CONCLUSIONS

SWCA performed a wetland delineation for inshore components associated with the proposed Bluewater SPM project. The delineation identified 43 distinct wetlands, consisting of eleven Palustrine Emergent (PEM), one Palustrine Scrub/Shrub (PSS), 22 Estuarine Intertidal Emergent (E2EM), eight Estuarine Intertidal Scrub/Shrub (E2SS), and one Estuarine Intertidal Unconsolidated Shore (E2US), totaling 75.827 acres. Additionally, the delineation identified 12 waterbodies within the survey area, consisting of four ditches, two streams, one coastal inlet, three ponds, one bay, and the Gulf of Mexico, totaling 13.781 acres.

The delineation findings in this report represent the professional opinion of SWCA and are not a verification or jurisdictional determination of waters of the U.S. Only the USACE is authorized to verify the boundaries and jurisdictional limits of waters of the U.S.

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APPENDIX A

Figures

Legend

Project Boundary

Coordinate System: NAD 1983 StatePlane Texas South Central FIPS 4204 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
Units: Foot US
Basemap: ESRI Street Map
1 inch = 8,333 feet

0 0.5 1 2 Miles

N W E S

BLUEWATER SPM PROJECT

VICINITY MAP

FIGURE 1

Legend

- Project Boundary
- Datapoint
- Ephemeral Waterbody
- Intermittent Waterbody
- Perennial Waterbody
- Pond
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland
- Estuarine Emergent Wetland
- Estuarine Scrub-Shrub Wetland
- Salt Flat

Coordinate System: NAD 1983 StatePlane Texas South Central FIPS 4204 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
Units: Foot US
Basemap: 2017 ESRI Aerial Imagery
1 inch = 833 feet

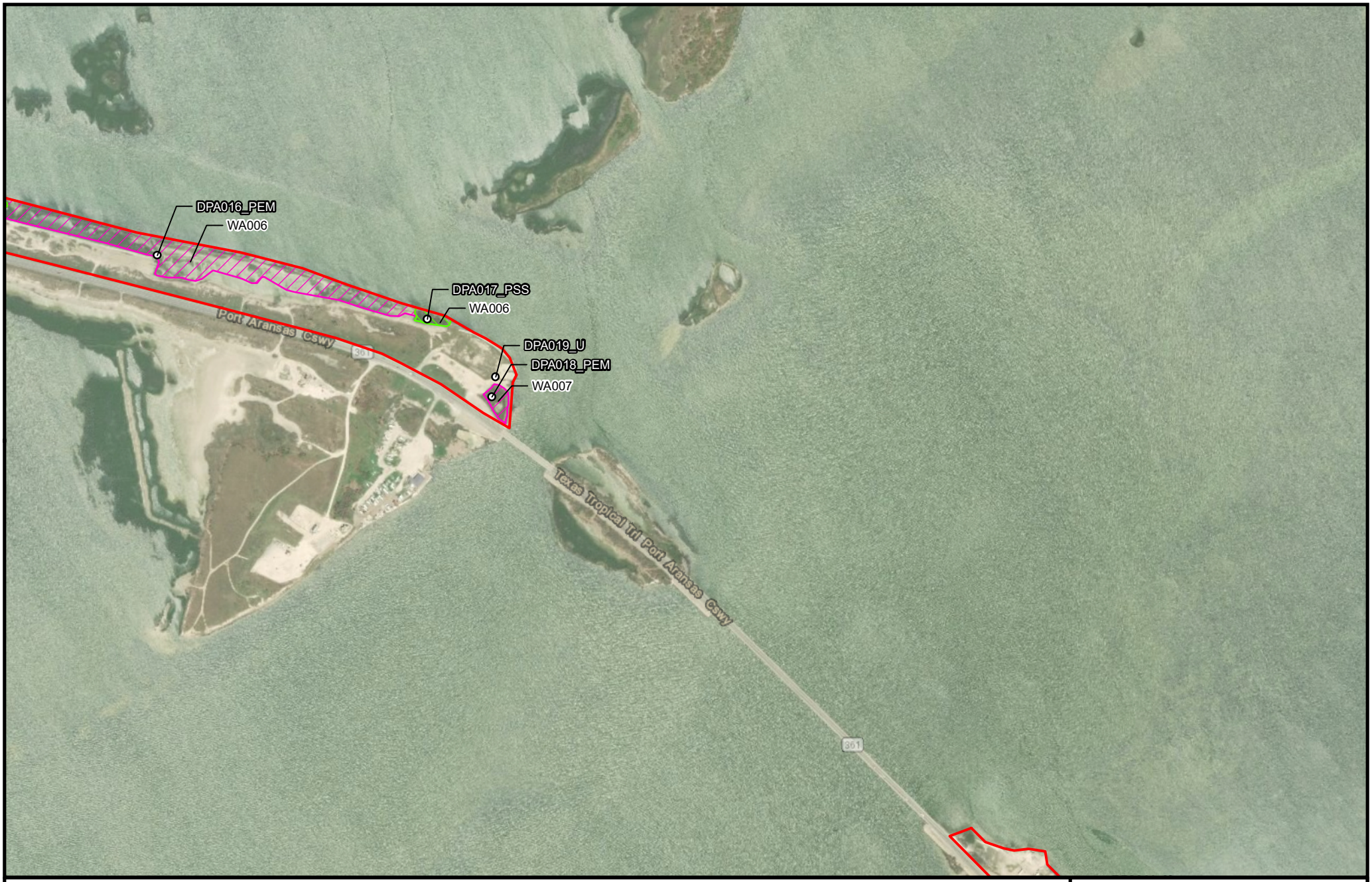
0 250 500 1,000 Feet

N W E S

BLUEWATER SPM PROJECT

WETLAND DELINEATION MAP

FIGURE 2 - SHEET 1 OF 6



Legend

- Project Boundary
- Datapoint
- Ephemeral Waterbody
- Intermittent Waterbody
- Perennial Waterbody
- Pond
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland
- Estuarine Emergent Wetland
- Estuarine Scrub-Shrub Wetland
- Salt Flat

Coordinate System: NAD 1983 StatePlane Texas South Central FIPS 4204 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
Units: Foot US
Basemap: 2017 ESRI Aerial Imagery
1 inch = 833 feet

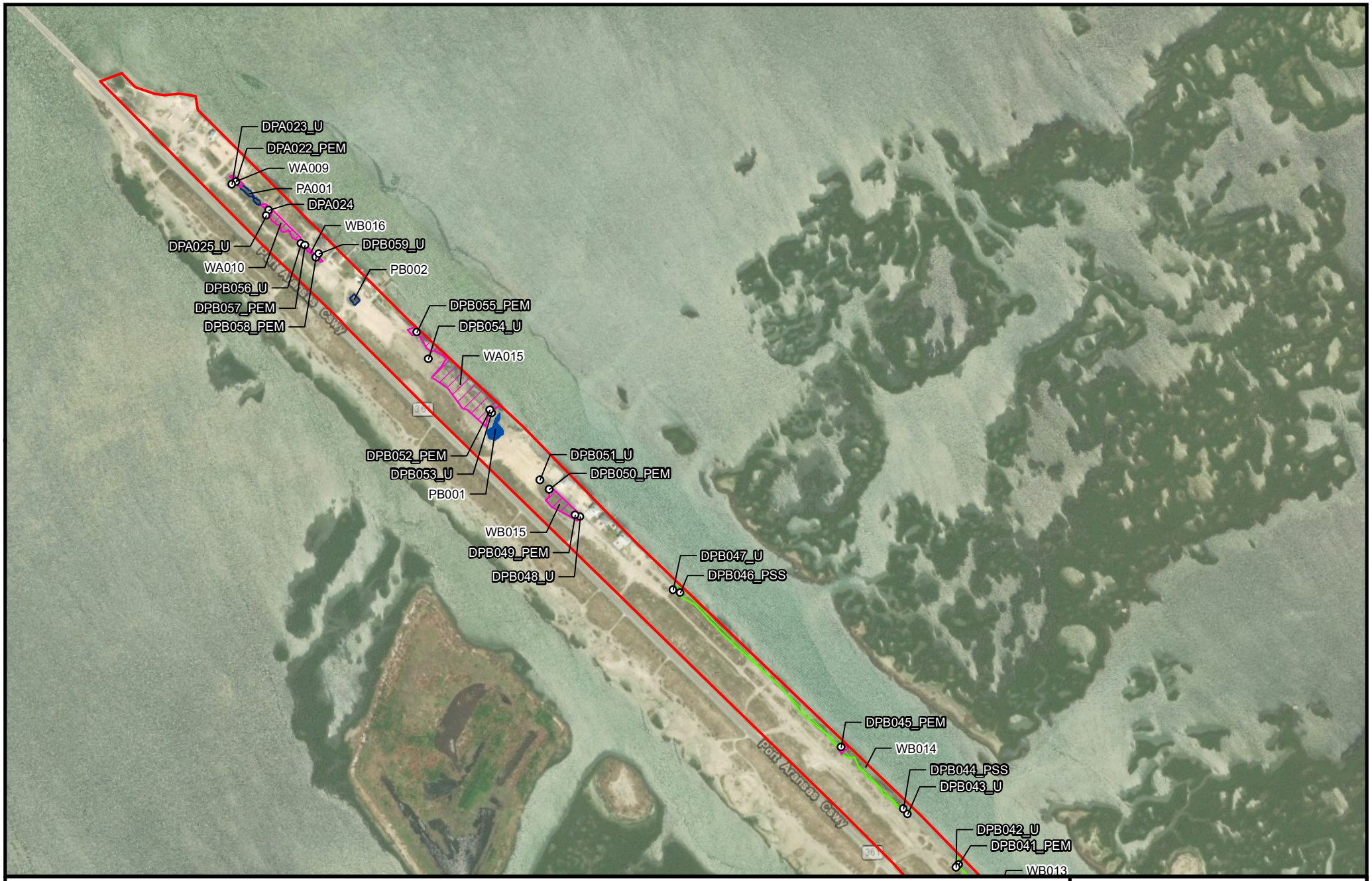
0 250 500 1,000 Feet

N W E S

BLUEWATER SPM PROJECT

WETLAND DELINEATION MAP

FIGURE 2 - SHEET 2 OF 6



Legend

- Project Boundary
- Datapoint
- Ephemeral Waterbody
- Intermittent Waterbody
- Perennial Waterbody
- Pond
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland
- Estuarine Emergent Wetland
- Estuarine Scrub-Shrub Wetland
- Salt Flat

Coordinate System: NAD 1983 StatePlane Texas South Central FIPS 4204 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
Units: Foot US
Basemap: 2017 ESRI Aerial Imagery
1 inch = 833 feet

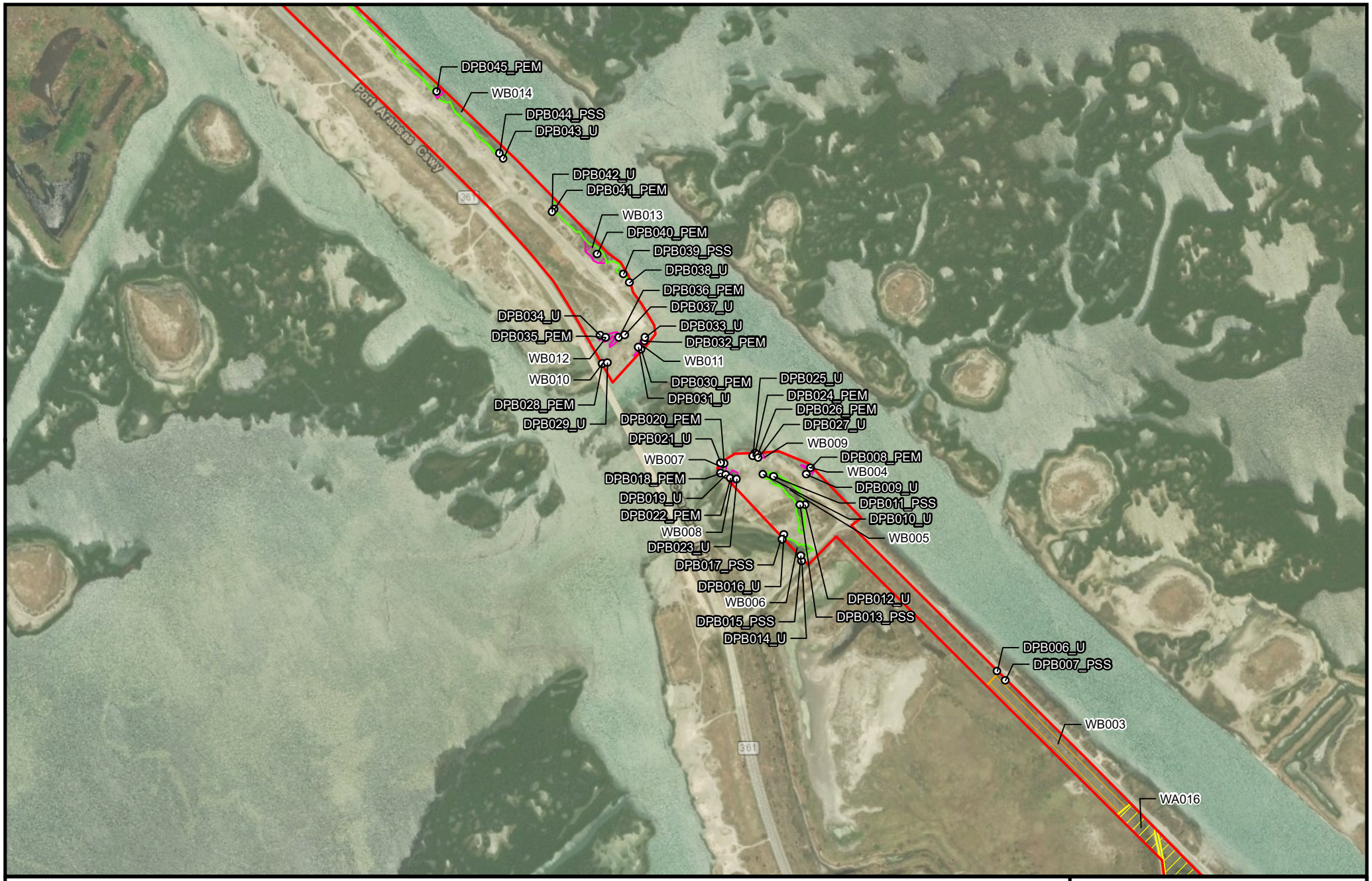
0 250 500 1,000 Feet

N W E S

BLUEWATER SPM PROJECT

WETLAND DELINEATION MAP

FIGURE 2 - SHEET 3 OF 6



Legend

- Project Boundary
- Datapoint
- Ephemeral Waterbody
- Intermittent Waterbody
- Perennial Waterbody
- Pond
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland
- Estuarine Emergent Wetland
- Estuarine Scrub-Shrub Wetland
- Salt Flat

Coordinate System: NAD 1983 StatePlane Texas South Central FIPS 4204 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
Units: Foot US
Basemap: 2017 ESRI Aerial Imagery
1 inch = 833 feet

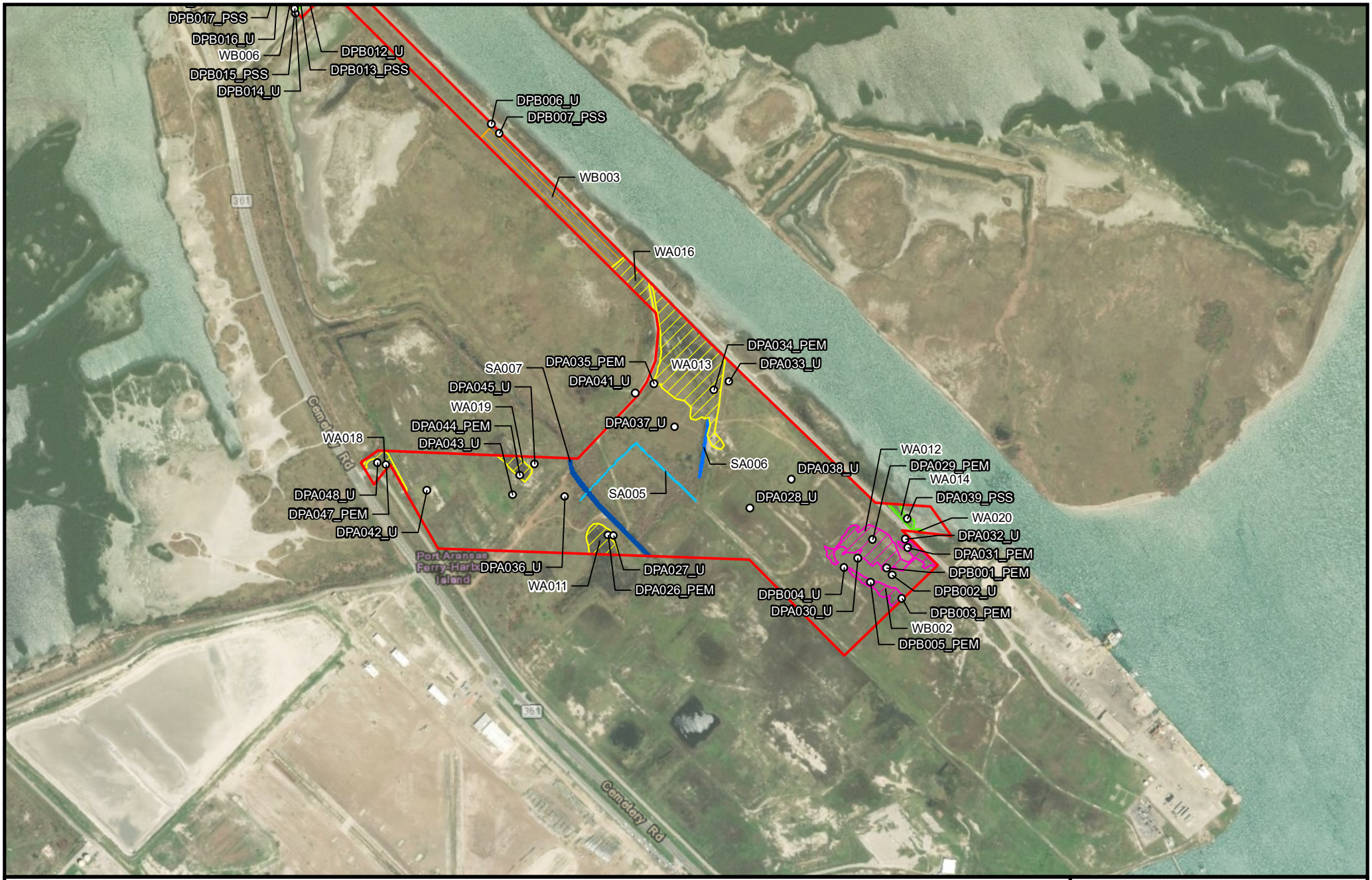
0 250 500 1,000 Feet

N W E S

BLUEWATER SPM PROJECT

WETLAND DELINEATION MAP

FIGURE 2 - SHEET 4 OF 6



Legend

- Project Boundary
- Datapoint
- Ephemeral Waterbody
- Intermittent Waterbody
- Perennial Waterbody
- Pond
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland
- Estuarine Emergent Wetland
- Estuarine Scrub-Shrub Wetland
- Salt Flat

Coordinate System: NAD 1983 StatePlane Texas South Central FIPS 4204 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
Units: Foot US
Basemap: 2017 ESRI Aerial Imagery
1 inch = 833 feet

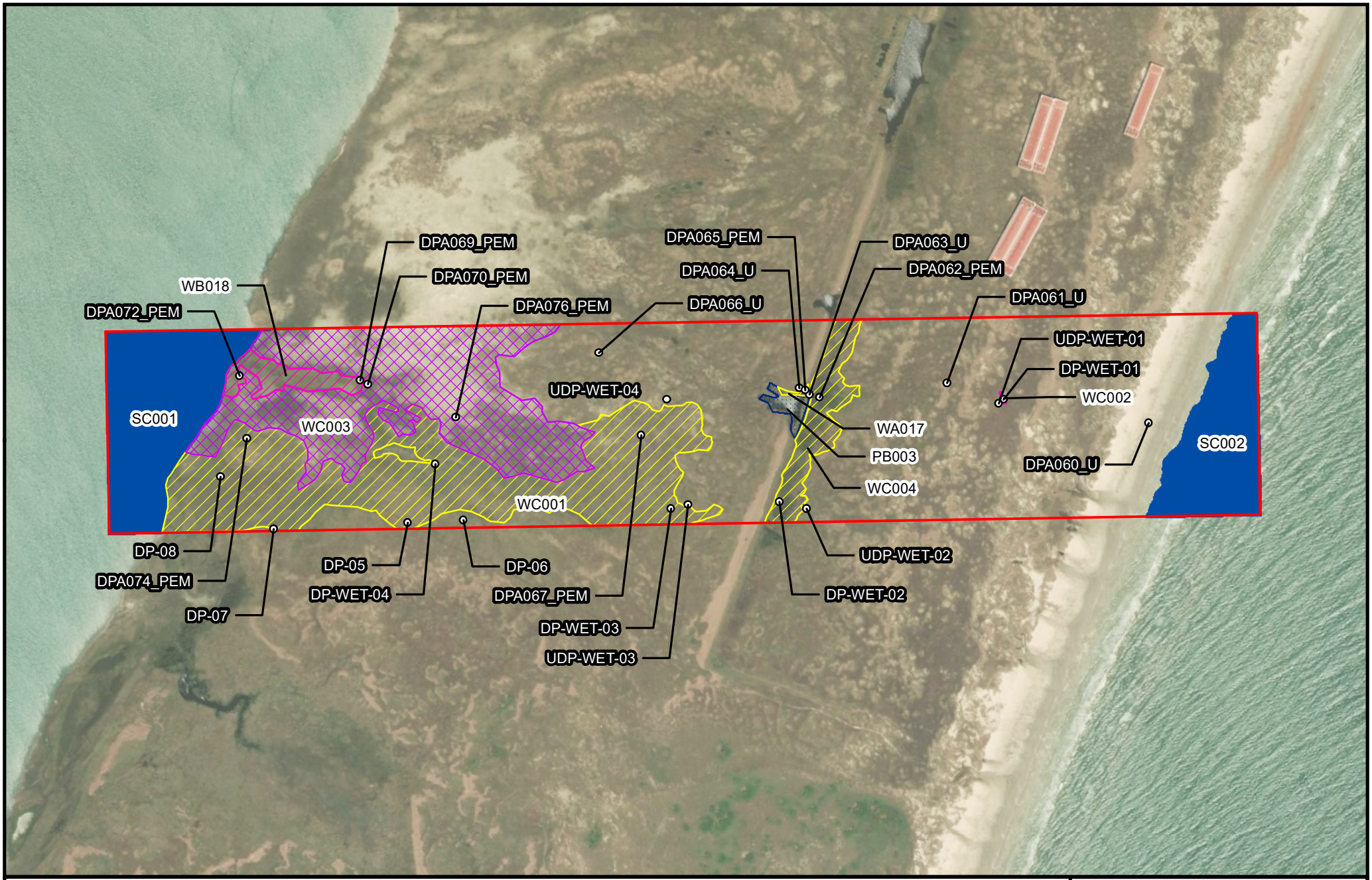
0 250 500 1,000 Feet

N W E S

BLUEWATER SPM PROJECT

WETLAND DELINEATION MAP

FIGURE 2 - SHEET 5 OF 6



Legend

- Project Boundary
- Datapoint
- Ephemeral Waterbody
- Intermittent Waterbody
- Perennial Waterbody
- Pond
- Palustrine Emergent Wetland
- Palustrine Scrub-Shrub Wetland
- Estuarine Emergent Wetland
- Estuarine Scrub-Shrub Wetland
- Salt Flat

Coordinate System: NAD 1983 StatePlane Texas South Central FIPS 4204 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
Units: Foot US
Basemap: 2017 ESRI Aerial Imagery
1 inch = 500 feet

N
W E
S

0 250 500 1,000 Feet

BLUEWATER SPM PROJECT

WETLAND DELINEATION MAP

FIGURE 2 - SHEET 6 OF 6

APPENDIX B

Wetland Delineation Data Sheets

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: San Patricio Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA001_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.902746 Long: -97.142688 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **Yes**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA001_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Cynodon dactylon*	80	Yes	FACU
2. *Schizachyrium scoparium*	10	No	FACU
3. *Cirsium texanum*	5	No	UPL
4. *Sporobolus indicus*	5	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**95**	x 4 =	**380**
UPL species	**5**	x 5 =	**25**
Column Totals:	**100** (A)		**405** (B)

Prevalence Index = B/A = **4.05**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	7.5YR 3/2	100	None	—	—	—	Clay Loam	Disturbed soils

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

Soils disturbed by broken glass/gravel.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: San Patricio Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA002_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.902245 Long: -97.141364 Datum: North American Datum 1983
Soil Map Unit Name: Dianola soils NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- **X** Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- **X** Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No	Depth (inches):	**1**
Water Table Present?	Yes No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes **X** No	Depth (inches):	**0**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

A positive indication of wetland hydrology was observed (at least two secondary indicators).

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

Sampling Point: **DPA002_PEM**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Borrichia frutescens*	80	Yes	OBL
2. *Andropogon glomeratus*	10	No	FACW
3. *Lycium carolinianum*	15	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	105 = Total Cover		
50% of total cover: 52.5	20% of total cover: 21		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**80**	x 1 =	**80**
FACW species	**25**	x 2 =	**50**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**105** (A)		**130** (B)

Prevalence Index = B/A = **1.24**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 6/2	98	10YR 5/8	2	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: San Patricio Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA003_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.902071 Long: -97.140905 Datum: North American Datum 1983
Soil Map Unit Name: Dianola soils NWI Classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA003_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Schinus terebinthifolia*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 30 ft.)			
1. *Cynodon dactylon*	75	Yes	FACU
2. *Borrichia frutescens*	10	No	OBL
3. *Muhlenbergia schreberi*	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**10**	x 1 =	**10**
FACW species	**0**	x 2 =	**0**
FAC species	**25**	x 3 =	**75**
FACU species	**75**	x 4 =	**300**
UPL species	**0**	x 5 =	**0**
Column Totals:	**110** (A)		**385** (B)

Prevalence Index = B/A = **3.50**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR 6/2	100	None	—	—	—	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: San Patricio Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA004_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.901854 Long: -97.140666 Datum: North American Datum 1983
Soil Map Unit Name: Dianola soils NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes **X** No
Wetland Hydrology Present?	Yes **X**	No	

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- **X** Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- **X** Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No	Depth (inches):	**0.5**
Water Table Present?	Yes No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes **X** No	Depth (inches):	**0**

Wetland Hydrology Present? Yes **X** No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

A positive indication of wetland hydrology was observed (at least two secondary indicators).

Aquatic Fauna: fish.

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

Sampling Point: **DPA004_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Borrichia frutescens*	70	Yes	OBL
2. *Cynodon dactylon*	15	No	FACU
3. *Distichlis littoralis*	25	Yes	OBL
4. *Opuntia engelmannii*	5	No	UPL
5. *Andropogon glomeratus*	5	No	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	120 = Total Cover		
50% of total cover: 60	20% of total cover: 24		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**95**	x 1 =	**95**
FACW species	**5**	x 2 =	**10**
FAC species	**0**	x 3 =	**0**
FACU species	**15**	x 4 =	**60**
UPL species	**5**	x 5 =	**25**
Column Totals:	**120** (A)		**190** (B)

Prevalence Index = B/A = **1.58**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 6/2	95	10YR 5/8	5	C	PL	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: San Patricio Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA005_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.901297 Long: -97.140113 Datum: North American Datum 1983
Soil Map Unit Name: Dianola soils NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA005_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Prosopis glandulosa*	5	Yes	UPL
2. *Vachellia farnesiana*	5	Yes	FACU
3.			
4.			
5.			
6.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 30 ft.)			
1. *Cynodon dactylon*	70	Yes	FACU
2. *Ambrosia psilostachya*	15	No	FAC
3. *Schinus terebinthifolia*	20	No	FAC
4. *Oxalis stricta*	2	No	UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	107 = Total Cover		
50% of total cover: 53.5	20% of total cover: 21.4		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**0**	x 2 =	**0**
FAC species	**35**	x 3 =	**105**
FACU species	**75**	x 4 =	**300**
UPL species	**7**	x 5 =	**35**
Column Totals:	**117** (A)		**440** (B)

Prevalence Index = B/A = **3.76**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR 4/2	100	None	—	—	—	Loamy Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: San Patricio Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA006_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.901113 Long: -97.139440 Datum: North American Datum 1983
Soil Map Unit Name: Dianola soils NWI Classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area**
Wetland Hydrology Present?	Yes **X**	No	**within a Wetland?** **Yes X** **No**

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- **X** Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots(C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- **X** Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes **X**	No	Depth (inches): **nput Dept**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

A positive indication of wetland hydrology was observed (at least two secondary indicators).

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

Sampling Point: **DPA006_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Distichlis littoralis*	80	Yes	OBL
2. *Borrichia frutescens*	25	No	OBL
3. *Lycium carolinianum*	15	No	FACW
4. *Andropogon glomeratus*	5	No	FACW
5. *Salicornia depressa*	5	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	130 = Total Cover		
50% of total cover: 65	20% of total cover: 26		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**110**	x 1 =	**110**
FACW species	**20**	x 2 =	**40**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**130** (A)		**150** (B)

Prevalence Index = B/A = **1.15**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	5YR 4/1	100	None	—	—	—	Sandy Clay	
2-16	10YR 6/2	95	10YR 5/8	5	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: San Patricio Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA007_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.901085 Long: -97.139659 Datum: North American Datum 1983
Soil Map Unit Name: Dianola soils NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area**
Wetland Hydrology Present?	Yes	No **X**	**within a Wetland?** **Yes** **No X**

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? **Yes** **No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA007_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Schinus terebinthifolia*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 30 ft.)			
1. *Cynodon dactylon*	30	Yes	FACU
2. *Borrichia frutescens*	15	Yes	OBL
3. *Opuntia engelmannii*	15	Yes	UPL
4. *Ratibida columnifera*	10	No	UPL
5. *Ambrosia psilostachya*	5	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**15**	x 1 =	**15**
FACW species	**0**	x 2 =	**0**
FAC species	**20**	x 3 =	**60**
FACU species	**30**	x 4 =	**120**
UPL species	**25**	x 5 =	**125**
Column Totals:	**90** (A)		**320** (B)

Prevalence Index = B/A = **3.56**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR 4/2	100	None	—	—	—	Loamy Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA008_PSS
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.895962 Long: -97.131164 Datum: North American Datum 1983
Soil Map Unit Name: Water NWI Classification: E2USN
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No		
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes **X**	No	**within a Wetland?**	**Yes X** **No**

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- **X** Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Other: Coastal inundation.

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

Sampling Point: **DPA008_PSS**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	50	Yes	OBL
2.			
3.			
4.			
5.			
6.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 30 ft.)			
1. *Spartina alterniflora*	30	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**80**	x 1 =	**80**
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:	**80** (A)		**80** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	N 4	100	None	—	—	—	Sandy Clay	Shell hash mixed with matrix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA009_PSS
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.895456 Long: -97.129560 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USN
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes **X** No
Wetland Hydrology Present?	Yes **X**	No	

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots(C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- **X** Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No	Depth (inches):	**3**
Water Table Present?	Yes No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? Yes **X** No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

A positive indication of wetland hydrology was observed (at least two secondary indicators).

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

Sampling Point: **DPA009_PSS**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	50	Yes	OBL
2.			
3.			
4.			
5.			
6.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 30 ft.)			
1. *Salicornia depressa*	5	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**55**	x 1 =	**55**
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:	**55** (A)		**55** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	N 2.5	100	None	—	—	—	Organic Soil Layer	
3-16	10Y 5/1	100	None	—	—	—	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA010_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.895357 Long: -97.129417 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area**
Wetland Hydrology Present?	Yes **X**	No	**within a Wetland?** Yes No **X**

Remarks:

This point was determined not to be within a wetland due to the lack of hydrophytic vegetation and hydric soils.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- **X** Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes **X** No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Other: Coastal inundation.

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

Sampling Point: **DPA010_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-10	10YR 3/2	100	None	—	—	—	Sandy Clay	Shell hash, gravel, and fill material from road mixed with matrix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA011_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.895292 Long: -97.130171 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2EM1N
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes **X** No
Wetland Hydrology Present?	Yes **X**	No	

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- **X** High Water Table (A2)
- Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- Oxidized Rhizospheres on Living Roots(C3)
- Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- **X** Sparsely Vegetated Concave Surface (B8)
- Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- Geomorphic Position (D2)
- Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No	Depth (inches):	**3**
Water Table Present?	Yes **X** No	Depth (inches):	**8**
Saturation Present? (includes capillary fringe)	Yes No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? Yes **X** No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

A positive indication of wetland hydrology was observed (at least two secondary indicators).

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

Sampling Point: **DPA011_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	70	Yes	OBL
2. *Salicornia depressa*	40	Yes	OBL
3. *Spartina alterniflora*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	120 = Total Cover		
50% of total cover: 60	20% of total cover: 24		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**120**	x 1 =	**120**
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:	**120** (A)		**120** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	10Y 4/1	98	10YR 5/8	2	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___X___ **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA012_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.895072 Long: -97.130517 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA012_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Schinus terebinthifolia*	20	Yes	FAC
2. *Tamarix ramosissima*	15	Yes	FACW
3.			
4.			
5.			
6.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Herb Stratum (Plot size: 30 ft.)			
1. *Opuntia engelmannii*	15	Yes	UPL
2. *Trifolium repens*	10	Yes	FACU
3. *Cynodon dactylon*	15	Yes	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **40%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**15**	x 2 =	**30**
FAC species	**20**	x 3 =	**60**
FACU species	**25**	x 4 =	**100**
UPL species	**15**	x 5 =	**75**
Column Totals:	**75** (A)		**265** (B)

Prevalence Index = B/A = **3.53**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-8	10YR 4/2	100	None	—	—	—	Sandy Clay	Shovel Restriction

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: Gravel/Concrete

Depth (inches): 8

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA013_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.895233 Long: -97.128663 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USP
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes **X** No
Wetland Hydrology Present?	Yes **X**	No	

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots(C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- **X** Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- **X** Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes **X** No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

A positive indication of wetland hydrology was observed (at least two secondary indicators).

Other: Coastal inundation.

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

Sampling Point: **DPA013_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	50	Yes	OBL
2. *Salicornia depressa*	10	No	OBL
3. *Spartina alterniflora*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**70**	x 1 =	**70**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**70** (A)		**70** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10Y 4/1	98	10YR 4/6	2	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___X___ **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA014_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.894971 Long: -97.127965 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA014_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Opuntia engelmannii*	15	Yes	UPL
2. *Borrichia frutescens*	15	Yes	OBL
3. *Thelesperma filifolium*	15	Yes	UPL
4. *Oxalis stricta*	10	No	UPL
5. *Muhlenbergia schreberi*	30	Yes	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**15**	x 1 =	**15**
FACW species	**0**	x 2 =	**0**
FAC species	**30**	x 3 =	**90**
FACU species	**0**	x 4 =	**0**
UPL species	**40**	x 5 =	**200**
Column Totals:	**85** (A)		**305** (B)

Prevalence Index = B/A = **3.59**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-8	10YR 3/3	100	None	—	—	—	Sandy Clay Loam	Shovel Restriction

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: Pavement from old, buried road

Depth (inches): 8

Hydric Soil Present? Yes _____ No X

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA015_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.894310 Long: -97.127297 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA015_U**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Opuntia engelmannii*	10	No	UPL
2. *Schizachyrium scoparium*	30	Yes	FACU
3. *Yucca treculeana*	10	No	UPL
4. *Cynodon dactylon*	30	Yes	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**60**	x 4 =	**240**
UPL species	**20**	x 5 =	**100**
Column Totals:	**80** (A)		**340** (B)

Prevalence Index = B/A = **4.25**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 5/3	98	10YR 5/6	2	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA016_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.892485 Long: -97.117486 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No		
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes **X**	No	**within a Wetland?**	**Yes X** **No**

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots(C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- **X** Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches):	**3**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

A positive indication of wetland hydrology was observed (at least two secondary indicators).

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

Sampling Point: **DPA016_PEM**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	50	Yes	OBL
2. *Salicornia depressa*	10	No	OBL
3. *Spartina alterniflora*	15	Yes	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**75**	x 1 =	**75**
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:	**75** (A)		**75** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10Y 4/1	100	None	—	—	—	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___X___ **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA017_PSS
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.891260 Long: -97.112036 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USP
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No		
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes **X**	No	**within a Wetland?**	**Yes X** **No**

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- **X** Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches): **3**	
Water Table Present?	Yes	No **X**	Depth (inches): **>20**	
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**	**Wetland Hydrology Present?** **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

A positive indication of wetland hydrology was observed (at least two secondary indicators).

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

Sampling Point: **DPA017_PSS**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	50	Yes	OBL
2.			
3.			
4.			
5.			
6.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**50**	x 1 =	**50**
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:	**50** (A)		**50** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10Y 4/1	100	None	—	—	—	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___X___ **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA018_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.889845 Long: -97.110758 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: E2EM1P
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No		
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes **X**	No	**within a Wetland?**	**Yes X** **No**

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- **X** Saturation (A3)
- **X** Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- **X** Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches):	**3**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes **X**	No	Depth (inches):	**0**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

A positive indication of wetland hydrology was observed (at least two secondary indicators).

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

Sampling Point: **DPA018_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	20	Yes	OBL
2.			
3.			
4.			
5.			
6.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	10	No	OBL
2. *Sesuvium portulacastrum*	15	Yes	FACW
3. *Salicornia depressa*	15	Yes	OBL
4. *Batis maritima*	30	Yes	OBL
5. *Borrichia frutescens*	5	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**80**	x 1 =	**80**
FACW species	**15**	x 2 =	**30**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**95** (A)		**110** (B)

Prevalence Index = B/A = **1.16**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10Y 4/1	98	10YR 5/8	2	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___X___ **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA019_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.890199 Long: -97.110677 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA019_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Prosopis glandulosa*	10	Yes	UPL
2.			
3.			
4.			
5.			
6.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 30 ft.)			
1. *Cynodon dactylon*	30	Yes	FACU
2. *Lysimachia arvensis*	15	No	FACU
3. *Nassella leucotricha*	20	Yes	UPL
4. *Melilotus indicus*	15	No	FACU
5. *Sonchus asper*	10	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**70**	x 4 =	**280**
UPL species	**30**	x 5 =	**150**
Column Totals:	**100** (A)		**430** (B)

Prevalence Index = B/A = **4.30**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 6/4	98	10YR 6/8	2	C	M	Loamy Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA020_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.893408 Long: -97.122001 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes **X** No
Wetland Hydrology Present?	Yes **X**	No	

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- **X** Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No	Depth (inches):	**3**
Water Table Present?	Yes No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? Yes **X** No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

A positive indication of wetland hydrology was observed (at least two secondary indicators).

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

Sampling Point: **DPA020_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	20	Yes	OBL
2.			
3.			
4.			
5.			
6.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	10	Yes	OBL
2. *Borrichia frutescens*	15	Yes	OBL
3. *Batis maritima*	15	Yes	OBL
4. *Salicornia depressa*	10	Yes	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **5** (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**70**	x 1 =	**70**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**70** (A)		**70** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	5Y 5/1	95	10YR 6/8	5	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA021_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.893042 Long: -97.121818 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **Yes**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of hydrophytic vegetation and wetland hydrology.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA021_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Nassella leucotricha*	30	Yes	UPL
2. *Calyptocarpus vialis*	10	Yes	FAC
3. *Sonchus asper*	10	Yes	FACU
4. *Tamarix ramosissima*	10	Yes	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**10**	x 2 =	**20**
FAC species	**10**	x 3 =	**30**
FACU species	**10**	x 4 =	**40**
UPL species	**30**	x 5 =	**150**
Column Totals:	**60** (A)		**240** (B)

Prevalence Index = B/A = **4.00**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: **DPA021_U**

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 6/2	98	10YR 6/8	2	C	M	Loamy Sand	Disturbed soils

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

____ 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 Mucky Mineral (S1) **(LRR O, S)**
____ Sandy Gleyed Matrix (S4)
X Sandy Redox (S5)
____ Stripped Matrix (S6)
____ Dark Surface (S7) **(LRR P, S, T, U)**
____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
____ Thin Dark Surface (S9) **(LRR S, T, U)**
____ Loamy Mucky Mineral (F1) **(LRR O)**
____ Loamy Gleyed Matrix (F2)
____ Depleted Matrix (F3)
____ Redox Dark Surface (F6)
____ Depleted Dark Surface (F7)
____ Redox Depressions (F8)
____ Marl (F10) **(LRR U)**
____ Depleted Ochric (F11) **(MLRA 151)**
____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
____ Umbric Surface (F13) **(LRR P, T, U)**
____ Delta Ochric (F17) **(MLRA 151)**
____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

____ 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)

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

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

A positive indication of hydric soil was observed.

Soils disturbed due to nearby road.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA022_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.879957 Long: -97.098903 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No		
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes **X**	No	**within a Wetland?**	**Yes X** **No**

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- **X** Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No	Depth (inches):	**6**
Water Table Present?	Yes No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

A positive indication of wetland hydrology was observed (at least two secondary indicators).

Aquatic Fauna: crabs.

VEGETATION (Five Strata) - Use scientific names of plants. Sampling Point: **DPA022_PEM**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Typha latifolia*	70	Yes	OBL
2. *Andropogon glomeratus*	10	No	FACW
3. *Borrichia frutescens*	5	No	OBL
4. *Schoenoplectus pungens*	15	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**90**	x 1 =	**90**
FACW species	**10**	x 2 =	**20**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**110** (B)

Prevalence Index = B/A = **1.10**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10Y 5/1	100	None	—	—	—	Clay	Shell hash mixed with matrix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___X___ **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 29, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA023_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.879913 Long: -97.098992 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area**		
Hydric Soil Present?	Yes **X**	No	**within a Wetland?**	**Yes**	**No X**
Wetland Hydrology Present?	Yes	No **X**			

Remarks:

This point was determined not to be within a wetland due to the lack of wetland hydrology.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches):	**N/A**	
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**	
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**	**Wetland Hydrology Present? Yes No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA023_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Borrichia frutescens*	10	No	OBL
2. *Muhlenbergia schreberi*	30	Yes	FAC
3. *Distichlis spicata*	30	Yes	OBL
4. *Cynodon dactylon*	15	No	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**40**	x 1 =	**40**
FACW species	**0**	x 2 =	**0**
FAC species	**30**	x 3 =	**90**
FACU species	**15**	x 4 =	**60**
UPL species	**0**	x 5 =	**0**
Column Totals:	**85** (A)		**190** (B)

Prevalence Index = B/A = **2.24**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 6/1	98	10YR 6/6	2	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 30, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA024_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.879434 Long: -97.098251 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No		
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes **X**	No	**within a Wetland?**	**Yes X** **No**

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- **X** Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- **X** Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes **X**	No	Depth (inches):	**0**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPA024_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Borrichia frutescens*	30	Yes	OBL
2. *Schoenoplectus pungens*	40	Yes	OBL
3. *Distichlis spicata*	25	Yes	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**95**	x 1 =	**95**
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:	**95** (A)		**95** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 6/2	96	10YR 6/6	4	C	M	Sandy Clay	Shell hash and gravel mixed with matrix.

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 30, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA025_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.879336 Long: -97.098303 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **Yes**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area**		
Hydric Soil Present?	Yes	No **X**	**within a Wetland?**	**Yes**	**No X**
Wetland Hydrology Present?	Yes	No **X**			

Remarks:

This point was determined not to be within a wetland due to the lack of hydric soils and wetland hydrology.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes** **No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA025_U**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Muhlenbergia schreberi*	40	Yes	FAC
2. *Distichlis spicata*	30	Yes	OBL
3. *Borrichia frutescens*	15	No	OBL
4. *Solidago canadensis*	10	No	FACU
5. *Ambrosia psilostachya*	5	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**45**	x 1 =	**45**
FACW species	**0**	x 2 =	**0**
FAC species	**45**	x 3 =	**135**
FACU species	**10**	x 4 =	**40**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**220** (B)

Prevalence Index = B/A = **2.20**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	10YR 6/2	100	None	—	—	—	Sandy Clay	Disturbed Soils
								Shovel Restriction

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: Gravel/Shell Hash

Depth (inches): 3

Hydric Soil Present? Yes _____ No X

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 30, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA026_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.851561 Long: -97.073445 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: PEM1Ah
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area**		
Hydric Soil Present?	Yes **X**	No	**within a Wetland?**	**Yes X**	**No**
Wetland Hydrology Present?	Yes **X**	No			

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots(C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- **X** Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches): **10**		
Water Table Present?	Yes	No **X**	Depth (inches): **>20**		
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**	**Wetland Hydrology Present?**	**Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

A positive indication of wetland hydrology was observed (at least two secondary indicators).

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

Sampling Point: **DPA026_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Schinus terebinthifolia*	20	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum (Plot size: 30 ft.)			
1. *Borrichia frutescens*	10	No	OBL
2. *Spartina spartinae*	60	Yes	OBL
3. *Andropogon glomeratus*	10	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**70**	x 1 =	**70**
FACW species	**10**	x 2 =	**20**
FAC species	**20**	x 3 =	**60**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**150** (B)

Prevalence Index = B/A = **1.50**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	7.5YR 5/1	98	10YR 4/6	2	C	PL	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 30, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA027_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): Convex Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.851554 Long: -97.073336 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: PEM1Ah
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **Yes**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA027_U**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Schinus terebinthifolia*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 30 ft.)			
1. *Opuntia engelmannii*	20	Yes	UPL
2. *Schizachyrium scoparium*	15	Yes	FACU
3. *Heterotheca subaxillaris*	15	Yes	UPL
4. *Verbena halei*	10	No	UPL
5. *Bothriochloa ischaemum*	25	Yes	UPL
6. *Andropogon glomeratus*	10	No	FACW
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **20%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**10**	x 2 =	**20**
FAC species	**15**	x 3 =	**45**
FACU species	**15**	x 4 =	**60**
UPL species	**70**	x 5 =	**350**
Column Totals:	**110** (A)		**475** (B)

Prevalence Index = B/A = **4.32**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0								Disturbed Soils

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: Shell Hash/Fill Material

Depth (inches): 0

Hydric Soil Present? Yes _____ No X

Remarks:

No positive indication of hydric soils was observed.

Soils highly disturbed due to location on berm. Mixture of shell hash and fill material present.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 30, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA028_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.852011 Long: -97.070565 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA028_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Bothriochloa ischaemum*	80	Yes	UPL
2. *Muhlenbergia schreberi*	30	Yes	FAC
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**0**	x 2 =	**0**
FAC species	**30**	x 3 =	**90**
FACU species	**0**	x 4 =	**0**
UPL species	**80**	x 5 =	**400**
Column Totals:	**110** (A)		**490** (B)

Prevalence Index = B/A = **4.45**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 3/2	100	None	—	—	—	Loamy Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 30, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA029_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.851410 Long: -97.068099 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No		
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes **X**	No	**within a Wetland?**	**Yes X** **No**

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- **X** Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- **X** Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No	Depth (inches):	**5**
Water Table Present?	Yes No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

A positive indication of wetland hydrology was observed (at least two secondary indicators).

Other: Adventitious roots.

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

Sampling Point: **DPA029_PEM**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Spartina spartinae*	70	Yes	OBL
2. *Distichlis spicata*	30	Yes	OBL
3. *Borrichia frutescens*	10	No	OBL
4. *Eleocharis minima*	5	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	115 = Total Cover		
50% of total cover: 57.5	20% of total cover: 23		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**115**	x 1 =	**115**
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:	**115** (A)		**115** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 5/1	98	10YR 4/6	2	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 30, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA030_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): Convex Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.851076 Long: -97.068405 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of hydric soils and wetland hydrology.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA030_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Muhlenbergia schreberi*	25	Yes	FAC
2. *Andropogon glomeratus*	40	Yes	FACW
3. *Opuntia engelmannii*	10	No	UPL
4. *Bothriochloa ischaemum*	25	Yes	UPL
5. *Ambrosia psilostachya*	10	No	FAC
6. *Heterotheca subaxillaris*	10	No	UPL
7.			
8.			
9.			
10.			
11.			
	120 = Total Cover		
50% of total cover: 60	20% of total cover: 24		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **67%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**40**	x 2 =	**80**
FAC species	**35**	x 3 =	**105**
FACU species	**0**	x 4 =	**0**
UPL species	**45**	x 5 =	**225**
Column Totals:	**120** (A)		**410** (B)

Prevalence Index = B/A = **3.42**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/3	100	None	—	—	—	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 30, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA031_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.851250 Long: -97.067382 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No		
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes **X**	No	**within a Wetland?**	**Yes X** **No**

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots(C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- **X** Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches):	**4**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

A positive indication of wetland hydrology was observed (at least two secondary indicators).

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

Sampling Point: **DPA031_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Schinus terebinthifolia*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 30 ft.)			
1. *Borrichia frutescens*	15	Yes	OBL
2. *Typha latifolia*	15	Yes	OBL
3. *Spartina spartinae*	30	Yes	OBL
4. *Schoenoplectus pungens*	5	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**65**	x 1 =	**65**
FACW species	**0**	x 2 =	**0**
FAC species	**10**	x 3 =	**30**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**75** (A)		**95** (B)

Prevalence Index = B/A = **1.27**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/1	97	10YR 4/6	3	C	M	Sandy Clay	Shell hash and gravel mixed with matrix

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 30, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA032_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.851403 Long: -97.067430 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **Yes**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	**Is the Sampled Area within a Wetland?**	**Yes**	**No X**
Hydric Soil Present?	Yes	No **X**			
Wetland Hydrology Present?	Yes	No **X**			

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes** **No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA032_U**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Schinus terebinthifolia*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 30 ft.)			
1. *Cynodon dactylon*	30	Yes	FACU
2. *Borrichia frutescens*	10	No	OBL
3. *Spartina spartinae*	10	No	OBL
4. *Schizachyrium scoparium*	15	Yes	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **33%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**20**	x 1 =	**20**
FACW species	**0**	x 2 =	**0**
FAC species	**15**	x 3 =	**45**
FACU species	**45**	x 4 =	**180**
UPL species	**0**	x 5 =	**0**
Column Totals:	**80** (A)		**245** (B)

Prevalence Index = B/A = **3.06**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	2.5Y 6/3	90	None	—	—	—	Sandy Clay	Dual Matrix
0-16	5BG 7/1	10	None	—	—	—	Sandy Clay	Disturbed Soils

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

Soils highly disturbed due to nearby road and house.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 30, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA033_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.854292 Long: -97.070951 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: PEM1Ch
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area**		
Hydric Soil Present?	Yes **X**	No	**within a Wetland?**	**Yes**	**No X**
Wetland Hydrology Present?	Yes	No **X**			

Remarks:

This point was determined not to be within a wetland due to the lack of wetland hydrology.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches):	**N/A**	
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**	
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**	**Wetland Hydrology Present? Yes No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA033_U**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Schinus terebinthifolia*	25	Yes	FAC
2. *Prosopis glandulosa*	10	Yes	UPL
3.			
4.			
5.			
6.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Herb Stratum (Plot size: 30 ft.)			
1. *Spartina spartinae*	25	Yes	OBL
2. *Borrichia frutescens*	10	No	OBL
3. *Muhlenbergia schreberi*	20	Yes	FAC
4. *Andropogon glomeratus*	10	No	FACW
5. *Opuntia engelmannii*	5	No	UPL
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **75%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**35**	x 1 =	**35**
FACW species	**10**	x 2 =	**20**
FAC species	**45**	x 3 =	**135**
FACU species	**0**	x 4 =	**0**
UPL species	**15**	x 5 =	**75**
Column Totals:	**105** (A)		**265** (B)

Prevalence Index = B/A = **2.52**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	10YR 4/3	100	None	—	—	—	Sandy Clay	
6-16	10YR 5/1	90	10YR 5/8	10	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 30, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA034_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.854145 Long: -97.071263 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No		
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes **X**	No	**within a Wetland?**	**Yes X** **No**

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- **X** Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No	Depth (inches):	**8**
Water Table Present?	Yes No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Other: Adventitious roots.

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

Sampling Point: **DPA034_PEM**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Schinus terebinthifolia*	15	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 30 ft.)			
1. *Typha latifolia*	15	No	OBL
2. *Borrichia frutescens*	10	No	OBL
3. *Distichlis spicata*	50	Yes	OBL
4. *Spartina spartinae*	15	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**90**	x 1 =	**90**
FACW species	**0**	x 2 =	**0**
FAC species	**15**	x 3 =	**45**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**105** (A)		**135** (B)

Prevalence Index = B/A = **1.29**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	5BG 4/1	100	None	—	—	—	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 30, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA035_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.854277 Long: -97.072467 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- **X** Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No ____	Depth (inches):	**4**
Water Table Present?	Yes ____ No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes ____ No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPA035_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Schinus terebinthifolia*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 30 ft.)			
1. *Typha latifolia*	15	No	OBL
2. *Andropogon glomeratus*	10	No	FACW
3. *Cyperus odoratus*	10	No	FACW
4. *Spartina spartinae*	80	Yes	OBL
5. *Eleocharis minima*	10	No	OBL
6. *Hydrocotyle umbellata*	5	No	OBL
7.			
8.			
9.			
10.			
11.			
	130 = Total Cover		
50% of total cover: 65	20% of total cover: 26		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**110**	x 1 =	**110**
FACW species	**20**	x 2 =	**40**
FAC species	**10**	x 3 =	**30**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**140** (A)		**180** (B)

Prevalence Index = B/A = **1.29**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 5/1	98	10YR 4/6	2	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** 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)
- **X** Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___X___ **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 30, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA036_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.852273 Long: -97.074314 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA036_U**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Schinus terebinthifolia*	10	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 30 ft.)			
1. *Opuntia engelmannii*	20	Yes	UPL
2. *Spartina spartinae*	25	Yes	OBL
3. *Schizachyrium scoparium*	40	Yes	FACU
4. *Helianthus annuus*	10	No	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**25**	x 1 =	**25**
FACW species	**0**	x 2 =	**0**
FAC species	**20**	x 3 =	**60**
FACU species	**40**	x 4 =	**160**
UPL species	**20**	x 5 =	**100**
Column Totals:	**105** (A)		**345** (B)

Prevalence Index = B/A = **3.29**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10YR 5/3	100	None	—	—	—	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 30, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA037_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.853489 Long: -97.072064 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA037_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Opuntia engelmannii*	20	Yes	UPL
2. *Andropogon glomeratus*	15	No	FACW
3. *Nassella leucotricha*	30	Yes	UPL
4. *Schizachyrium scoparium*	30	Yes	FACU
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**15**	x 2 =	**30**
FAC species	**0**	x 3 =	**0**
FACU species	**30**	x 4 =	**120**
UPL species	**50**	x 5 =	**250**
Column Totals:	**95** (A)		**400** (B)

Prevalence Index = B/A = **4.21**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 5/1	>99	10YR 5/8	<1	C	PL	Loamy Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 30, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA038_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.852517 Long: -97.069715 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of hydric soils and wetland hydrology.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA038_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Muhlenbergia schreberi*	80	Yes	FAC
2. *Ambrosia psilostachya*	10	No	FAC
3. *Oenothera drummondii*	15	No	UPL
4. *Opuntia engelmannii*	10	No	UPL
5. *Verbena halei*	5	No	UPL
6. *Schizachyrium scoparium*	5	No	FACU
7.			
8.			
9.			
10.			
11.			
	125 = Total Cover		
50% of total cover: 62.5	20% of total cover: 25		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**0**	x 2 =	**0**
FAC species	**90**	x 3 =	**270**
FACU species	**5**	x 4 =	**20**
UPL species	**30**	x 5 =	**150**
Column Totals:	**125** (A)		**440** (B)

Prevalence Index = B/A = **3.52**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 5/3	98	10YR 5/8	2	C	M	Loamy Sand	
			10YR 4/6	<1	C	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 30, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA039_PSS
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.851772 Long: -97.067381 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: E2EM1P
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No	Depth (inches):	**4**
Water Table Present?	Yes No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPA039_PSS**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	50	Yes	OBL
2.			
3.			
4.			
5.			
6.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Herb Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	10	Yes	OBL
2. *Salicornia depressa*	10	Yes	OBL
3. *Batis maritima*	15	Yes	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**85**	x 1 =	**85**
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:	**85** (A)		**85** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10Y 5/1	100	None	—	—	—	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___X___ **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 30, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA040_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.854818 Long: -97.072569 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No		
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes **X**	No	**within a Wetland?**	**Yes X** **No**

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- **X** Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches):	**7**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPA040_PEM**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Typha latifolia*	40	Yes	OBL
2. *Spartina spartinae*	40	Yes	OBL
3. *Borrichia frutescens*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**90**	x 1 =	**90**
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:	**90** (A)		**90** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	10Y 5/1	100	None	—	—	—	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 30, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA041_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): Convex Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.854115 Long: -97.072855 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of hydrophytic vegetation and wetland hydrology.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA041_U**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Schizachyrium scoparium*	30	Yes	FACU
2. *Opuntia engelmannii*	10	No	UPL
3. *Nassella leucotricha*	40	Yes	UPL
4. *Heterotheca subaxillaris*	15	No	UPL
5. *Ambrosia psilostachya*	5	No	FAC
6. *Verbena halei*	5	No	UPL
7. *Andropogon glomeratus*	5	No	FACW
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**5**	x 2 =	**10**
FAC species	**5**	x 3 =	**15**
FACU species	**30**	x 4 =	**120**
UPL species	**70**	x 5 =	**350**
Column Totals:	**110** (A)		**495** (B)

Prevalence Index = B/A = **4.50**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: **DPA041_U**

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 6/2	80	10YR 5/8	20	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 31, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA042_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.852427 Long: -97.077100 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area**		
Hydric Soil Present?	Yes **X**	No	**within a Wetland?**	**Yes**	**No X**
Wetland Hydrology Present?	Yes	No **X**			

Remarks:

This point was determined not to be within a wetland due to the lack of wetland hydrology.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches):	**N/A**	
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**	
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**	**Wetland Hydrology Present? Yes No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA042_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Schinus terebinthifolia*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 30 ft.)			
1. *Muhlenbergia schreberi*	70	Yes	FAC
2. *Spartina spartinae*	20	No	OBL
3. *Helianthus annuus*	15	No	FAC
4. *Opuntia engelmannii*	10	No	UPL
5. *Ambrosia psilostachya*	5	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	120 = Total Cover		
50% of total cover: 60	20% of total cover: 24		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**20**	x 1 =	**20**
FACW species	**0**	x 2 =	**0**
FAC species	**95**	x 3 =	**285**
FACU species	**0**	x 4 =	**0**
UPL species	**10**	x 5 =	**50**
Column Totals:	**125** (A)		**355** (B)

Prevalence Index = B/A = **2.84**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

SOIL

Sampling Point: **DPA042_U**

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/2	85	10YR 4/6	15	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 31, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA043_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.852317 Long: -97.075372 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA043_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Prosopis glandulosa*	10	Yes	UPL
2.			
3.			
4.			
5.			
6.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Herb Stratum (Plot size: 30 ft.)			
1. *Muhlenbergia schreberi*	40	Yes	FAC
2. *Opuntia engelmannii*	15	No	UPL
3. *Helianthus annuus*	15	No	FAC
4. *Oenothera drummondii*	20	Yes	UPL
5. *Schizachyrium scoparium*	15	No	FACU
6.			
7.			
8.			
9.			
10.			
11.			
	105 = Total Cover		
50% of total cover: 52.5	20% of total cover: 21		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **33%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**0**	x 2 =	**0**
FAC species	**55**	x 3 =	**165**
FACU species	**15**	x 4 =	**60**
UPL species	**45**	x 5 =	**225**
Column Totals:	**115** (A)		**450** (B)

Prevalence Index = B/A = **3.91**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 6/3	98	10YR 6/6	2	C	M	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 31, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA044_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.852666 Long: -97.075217 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes **X** No
Wetland Hydrology Present?	Yes **X**	No	

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- **X** Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- **X** Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No	Depth (inches):	**8**
Water Table Present?	Yes No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? Yes **X** No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Other: Aerenchyma tissue on *Tamarix ramosissima.*

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

Sampling Point: **DPA044_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Tamarix ramosissima*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Herb Stratum (Plot size: 30 ft.)			
1. *Typha latifolia*	80	Yes	OBL
2. *Eleocharis minima*	15	No	OBL
3. *Cyperus entrerianus*	5	No	FACW
4. *Andropogon glomeratus*	5	No	FACW
5. *Helianthus annuus*	5	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**95**	x 1 =	**95**
FACW species	**15**	x 2 =	**30**
FAC species	**5**	x 3 =	**15**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**115** (A)		**140** (B)

Prevalence Index = B/A = **1.22**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	5GY 4/1	98	10YR 5/6	2	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 31, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA045_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.852868 Long: -97.074910 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA045_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Schizachyrium scoparium*	25	Yes	FACU
2. *Oenothera drummondii*	20	Yes	UPL
3. *Helianthus annuus*	15	Yes	FAC
4. *Muhlenbergia schreberi*	15	Yes	FAC
5. *Ambrosia psilostachya*	10	No	FAC
6. *Opuntia engelmannii*	10	No	UPL
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**0**	x 2 =	**0**
FAC species	**40**	x 3 =	**120**
FACU species	**25**	x 4 =	**100**
UPL species	**30**	x 5 =	**150**
Column Totals:	**95** (A)		**370** (B)

Prevalence Index = B/A = **3.89**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 6/3	98	10YR 6/6	2	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 31, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA046_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.853966 Long: -97.077096 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of hydrophytic vegetation and wetland hydrology.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA046_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Schizachyrium scoparium*	30	Yes	FACU
2. *Opuntia engelmannii*	15	Yes	UPL
3. *Verbena halei*	15	Yes	UPL
4. *Andropogon glomeratus*	10	No	FACW
5. *Ambrosia psilostachya*	10	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **0** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**10**	x 2 =	**20**
FAC species	**10**	x 3 =	**30**
FACU species	**30**	x 4 =	**120**
UPL species	**30**	x 5 =	**150**
Column Totals:	**80** (A)		**320** (B)

Prevalence Index = B/A = **4.00**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 5/2	96	10YR 5/8	2	C	M	Sandy Clay	
			N 3	2	D	M		

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 31, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA047_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.852901 Long: -97.077917 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No		
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes **X**	No	**within a Wetland?**	**Yes X** **No**

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- **X** Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches):	**6**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPA047_PEM**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Tamarix ramosissima*	10	Yes	FACW
2. *Schinus terebinthifolia*	5	Yes	FAC
3.			
4.			
5.			
6.			
	15 = Total Cover		
50% of total cover: 7.5	20% of total cover: 3		
Herb Stratum (Plot size: 30 ft.)			
1. *Spartina spartinae*	70	Yes	OBL
2. *Borrichia frutescens*	15	No	OBL
3. *Andropogon glomeratus*	10	No	FACW
4. *Distichlis spicata*	15	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**100**	x 1 =	**100**
FACW species	**20**	x 2 =	**40**
FAC species	**5**	x 3 =	**15**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**125** (A)		**155** (B)

Prevalence Index = B/A = **1.24**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-16	N 4	100	None	—	—	—	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 31, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA048_U
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): Convex Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.852938 Long: -97.078089 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **Yes**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of hydrophytic vegetation and wetland hydrology.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA048_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Opuntia engelmannii*	20	Yes	UPL
2. *Ambrosia psilostachya*	15	Yes	FAC
3. *Helianthus annuus*	10	No	FAC
4. *Oxalis stricta*	10	No	UPL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	55 = Total Cover		
50% of total cover: 27.5	20% of total cover: 11		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**0**	x 2 =	**0**
FAC species	**25**	x 3 =	**75**
FACU species	**0**	x 4 =	**0**
UPL species	**30**	x 5 =	**150**
Column Totals:	**55** (A)		**225** (B)

Prevalence Index = B/A = **4.09**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 5/2	95	10YR 4/4	5	C	M	Sandy Clay	Disturbed Soils

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 31, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA049_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.854658 Long: -97.078395 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- **X** Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots(C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- **X** Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ___ No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes ___ No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes **X** No ___	Depth (inches):	**0**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

A positive indication of wetland hydrology was observed (at least two secondary indicators).

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

Sampling Point: **DPA049_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Borrichia frutescens*	30	Yes	OBL
2. *Batis maritima*	15	Yes	OBL
3. *Salicornia depressa*	15	Yes	OBL
4. *Distichlis spicata*	10	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**70**	x 1 =	**70**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**70** (A)		**70** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-6	10YR 5/2	100	None	—	—	—	Sandy Clay	
6-16	10YR 6/2	80	10YR 6/8	20	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 31, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA050_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.855257 Long: -97.077300 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No		
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes **X**	No	**within a Wetland?**	**Yes X** **No**

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- **X** Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- **X** Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15) **(LRR U)**
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots(C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- **X** Surface Soil Cracks (B6)
- **X** Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ___ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes **X**	No	Depth (inches):	**0**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

A positive indication of wetland hydrology was observed (at least two secondary indicators).

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

Sampling Point: **DPA050_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Salicornia depressa*	30	Yes	OBL
2. *Borrichia frutescens*	30	Yes	OBL
3. *Spartina spartinae*	20	No	OBL
4. *Distichlis spicata*	15	No	OBL
5. *Batis maritima*	10	No	OBL
6. *Andropogon glomeratus*	5	No	FACW
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**105**	x 1 =	**105**
FACW species	**5**	x 2 =	**10**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**110** (A)		**115** (B)

Prevalence Index = B/A = **1.05**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 6/2	90	10YR 6/8	10	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

____ 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 Mucky Mineral (S1) **(LRR O, S)**
____ Sandy Gleyed Matrix (S4)
X Sandy Redox (S5)
____ Stripped Matrix (S6)
____ Dark Surface (S7) **(LRR P, S, T, U)**
____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
____ Thin Dark Surface (S9) **(LRR S, T, U)**
____ Loamy Mucky Mineral (F1) **(LRR O)**
____ Loamy Gleyed Matrix (F2)
____ Depleted Matrix (F3)
____ Redox Dark Surface (F6)
____ Depleted Dark Surface (F7)
____ Redox Depressions (F8)
____ Marl (F10) **(LRR U)**
____ Depleted Ochric (F11) **(MLRA 151)**
____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
____ Umbric Surface (F13) **(LRR P, T, U)**
____ Delta Ochric (F17) **(MLRA 151)**
____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

____ 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)

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

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: January 31, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA051_PEM
Investigator(s): E. Munscher and J. Mitchell Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.854644 Long: -97.077275 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) No (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes **X** No
Wetland Hydrology Present?	Yes **X**	No	

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

The survey area was determined to be wetter than normal at the time of survey.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- **X** Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- **X** Surface Soil Cracks (B6)
- **X** Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes **X**	No	Depth (inches): **0**

Wetland Hydrology Present? Yes **X** No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

A positive indication of wetland hydrology was observed (at least two secondary indicators).

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

Sampling Point: **DPA051_PEM**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Salicornia depressa*	30	Yes	OBL
2. *Borrichia frutescens*	10	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**40**	x 1 =	**40**
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:	**40** (A)		**40** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 5/2	98	10YR 5/8	2	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB001_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.850895 Long: -97.067824 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches):	**1**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPB001_PEM**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Distichlis spicata*	90	Yes	OBL
2. *Ambrosia psilostachya*	3	No	FAC
3. *Eleocharis montevidensis*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	98 = Total Cover		
50% of total cover: 49	20% of total cover: 19.6		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**90**	x 1 =	**90**
FACW species	**5**	x 2 =	**10**
FAC species	**3**	x 3 =	**9**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**98** (A)		**109** (B)

Prevalence Index = B/A = **1.11**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 5/1	98	10YR 4/6	2	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB002_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Hilltop Local relief (concave, convex, none): Convex Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.850759 Long: -97.067715 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area**		
Hydric Soil Present?	Yes **X**	No	**within a Wetland?**	**Yes**	**No X**
Wetland Hydrology Present?	Yes	No **X**			

Remarks:

This point was determined not to be within a wetland due to the lack of wetland hydrology.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches):	**N/A**	
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**	
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**	**Wetland Hydrology Present? Yes No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB002_U**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Trifolium repens*	55	Yes	FACU
2. *Ambrosia psilostachya*	15	No	FAC
3. *Andropogon glomeratus*	5	No	FACW
4. *Eleocharis palustris*	25	Yes	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**25**	x 1 =	**25**
FACW species	**5**	x 2 =	**10**
FAC species	**15**	x 3 =	**45**
FACU species	**55**	x 4 =	**220**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**300** (B)

Prevalence Index = B/A = **3.00**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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 X No** ____

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

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/2	90	10YR 6/4	10	C	PL	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB003_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): Convex Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.850916 Long: -97.068679 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches):	**3**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPB003_PEM**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Distichlis spicata*	90	Yes	OBL
2. *Eleocharis palustris*	10	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	**100**	x 1 =	**100**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**100** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

SOIL

Sampling Point: **DPB003_PEM**

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	10Y 6/1	95	7.5YR 3/3	5	C	M	Sandy Clay Loam	Shovel Restriction

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): 10

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB004_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.850636 Long: -97.068158 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area**		
Hydric Soil Present?	Yes **X**	No	**within a Wetland?**	**Yes**	**No X**
Wetland Hydrology Present?	Yes	No **X**			

Remarks:

This point was determined not to be within a wetland due to the lack of wetland hydrology.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches):	**N/A**	
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**	
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**	**Wetland Hydrology Present? Yes No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB004_U**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Sporobolus indicus*	55	Yes	FACU
2. *Distichlis spicata*	45	Yes	OBL
3. *Eleocharis palustris*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	**55**	x 1 =	**55**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**55**	x 4 =	**220**
UPL species	**0**	x 5 =	**0**
Column Totals:	**110** (A)		**275** (B)

Prevalence Index = B/A = **2.50**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	N 4	100	None	—	—	—	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB005_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.850337 Long: -97.067524 Datum: North American Datum 1983
Soil Map Unit Name: Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches):	**3**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPB005_PEM**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Distichlis spicata*	35	Yes	OBL
2. *Eleocharis palustris*	10	Yes	OBL
3. *Bacopa monnieri*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 10		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**50**	x 1 =	**50**
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:	**50** (A)		**50** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10Y 6/1	95	7.5YR 3/3	5	C	M	Sandy Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___X___ **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB006_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.858996 Long: -97.075676 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of hydrophytic vegetation and wetland hydrology.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB006_U**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Schinus terebinthifolia*	65	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Herb Stratum (Plot size: 30 ft.)			
1. *Andropogon glomeratus*	10	No	FACW
2. *Bothriochloa ischaemum*	50	Yes	UPL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**0**	x 1 =	**0**
FACW species	**10**	x 2 =	**20**
FAC species	**65**	x 3 =	**195**
FACU species	**0**	x 4 =	**0**
UPL species	**50**	x 5 =	**250**
Column Totals:	**125** (A)		**465** (B)

Prevalence Index = B/A = **3.72**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

SOIL

Sampling Point: **DPB006_U**

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10Y 6/1	95	7.5YR 3/3	5	C	M	Sandy Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___X___ **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB007_PSS
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.858828 Long: -97.075517 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No		
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes **X**	No	**within a Wetland?**	**Yes X** **No**

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches): **1**	
Water Table Present?	Yes	No **X**	Depth (inches): **>20**	
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**	**Wetland Hydrology Present?** **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPB007_PSS**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Schinus terebinthifolia*	80	Yes	FAC
2.			
3.			
4.			
5.			
6.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Herb Stratum (Plot size: 30 ft.)			
1. *Eleocharis palustris*	5	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5 = Total Cover		
50% of total cover: 2.5	20% of total cover: 1		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**5**	x 1 =	**5**
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:	**85** (A)		**245** (B)

Prevalence Index = B/A = **2.88**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10Y 6/1	95	7.5YR 3/3	5	C	M	Sandy Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___X___ **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB008_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.862716 Long: -97.079395 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USN
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No		
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes **X**	No	**within a Wetland?**	**Yes X** **No**

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- **X** Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches):	**2**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: fish.

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

Sampling Point: **DPB008_PEM**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Spartina alterniflora*	60	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**60**	x 1 =	**60**
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:	**60** (A)		**60** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

SOIL

Sampling Point: **DPB008_PEM**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/2	80	10YR 4/6	20	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

____ 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 Mucky Mineral (S1) **(LRR O, S)**
____ Sandy Gleyed Matrix (S4)
X Sandy Redox (S5)
____ Stripped Matrix (S6)
____ Dark Surface (S7) **(LRR P, S, T, U)**
____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
____ Thin Dark Surface (S9) **(LRR S, T, U)**
____ Loamy Mucky Mineral (F1) **(LRR O)**
____ Loamy Gleyed Matrix (F2)
____ Depleted Matrix (F3)
____ Redox Dark Surface (F6)
____ Depleted Dark Surface (F7)
____ Redox Depressions (F8)
____ Marl (F10) **(LRR U)**
____ Depleted Ochric (F11) **(MLRA 151)**
____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
____ Umbric Surface (F13) **(LRR P, T, U)**
____ Delta Ochric (F17) **(MLRA 151)**
____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

____ 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)

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

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB009_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.862599 Long: -97.079480 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of hydrophytic vegetation and wetland hydrology.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB009_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Trifolium repens*	30	Yes	FACU
2. *Ambrosia psilostachya*	10	No	FAC
3. *Cirsium texanum*	5	No	UPL
4. *Heterotheca subaxillaris*	5	No	UPL
5. *Bothriochloa ischaemum*	40	Yes	UPL
6. *Borrichia frutescens*	5	No	OBL
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**5**	x 1 =	**5**
FACW species	**0**	x 2 =	**0**
FAC species	**10**	x 3 =	**30**
FACU species	**30**	x 4 =	**120**
UPL species	**50**	x 5 =	**250**
Column Totals:	**95** (A)		**405** (B)

Prevalence Index = B/A = **4.26**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/2	80	10YR 4/6	20	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB010_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.862614 Long: -97.080360 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USP
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No _____			
Hydric Soil Present?	Yes **X**	No _____	**Is the Sampled Area**		
Wetland Hydrology Present?	Yes _____	No **X**	**within a Wetland?**	**Yes** _____	**No** **X**

Remarks:

This point was determined not to be within a wetland due to the lack of wetland hydrology.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No **X**	Depth (inches):	**N/A**	
Water Table Present?	Yes _____	No **X**	Depth (inches):	**>20**	
Saturation Present? (includes capillary fringe)	Yes _____	No **X**	Depth (inches):	**>20**	**Wetland Hydrology Present?** **Yes** _____ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB010_U**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Tridens albescens*	30	Yes	FAC
2. *Borrichia frutescens*	20	Yes	OBL
3. *Distichlis littoralis*	15	Yes	OBL
4. *Lycium carolinianum*	10	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**35**	x 1 =	**35**
FACW species	**10**	x 2 =	**20**
FAC species	**30**	x 3 =	**90**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**75** (A)		**145** (B)

Prevalence Index = B/A = **1.93**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/2	80	10YR 4/6	20	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB011_PSS
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.862568 Long: -97.080144 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USN
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No ____	Depth (inches):	**2**
Water Table Present?	Yes ____ No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes ____ No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: fish.

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

Sampling Point: **DPB011_PSS**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**100**	x 1 =	**100**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**100** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	N 5	95	None	—	—	—	Clay	
0-20	N 2.5	5	None	—	—	—	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___X___ **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB012_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.862052 Long: -97.079516 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No ____
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No ____			
Hydric Soil Present?	Yes **X**	No ____	**Is the Sampled Area**		
Wetland Hydrology Present?	Yes ____	No **X**	**within a Wetland?**	**Yes** ____	**No** **X**

Remarks:

This point was determined not to be within a wetland due to the lack of wetland hydrology.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No **X**	Depth (inches): **N/A**		
Water Table Present?	Yes ____	No **X**	Depth (inches): **>20**		
Saturation Present? (includes capillary fringe)	Yes ____	No **X**	Depth (inches): **>20**	**Wetland Hydrology Present?**	**Yes** ____ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB012_U**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Tridens albescens*	30	Yes	FAC
2. *Borrichia frutescens*	20	Yes	OBL
3. *Distichlis littoralis*	15	Yes	OBL
4. *Lycium carolinianum*	10	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**35**	x 1 =	**35**
FACW species	**10**	x 2 =	**20**
FAC species	**30**	x 3 =	**90**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**75** (A)		**145** (B)

Prevalence Index = B/A = **1.93**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/2	80	10YR 4/6	20	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB013_PSS
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.862055 Long: -97.079616 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USN
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes **X** No
Wetland Hydrology Present?	Yes **X**	No	

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No	Depth (inches):	**2**
Water Table Present?	Yes No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? Yes **X** No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: fish.

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

Sampling Point: **DPB013_PSS**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**100**	x 1 =	**100**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**100** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	N 5	95	None	—	—	—	Clay	
0-20	N 2.5	5	None	—	—	—	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___X___ **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB014_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Convex Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.861043 Long: -97.079601 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB014_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Eleocharis palustris*	40	Yes	OBL
2. *Prosopis glandulosa*	5	No	UPL
3. *Galium aparine*	10	No	FACU
4. *Heterotheca subaxillaris*	15	No	UPL
5. *Schizachyrium scoparium*	10	No	FACU
6. *Bothriochloa ischaemum*	20	Yes	UPL
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **50%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**40**	x 1 =	**40**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**20**	x 4 =	**80**
UPL species	**40**	x 5 =	**200**
Column Totals:	**100** (A)		**320** (B)

Prevalence Index = B/A = **3.20**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/3	99	10YR 4/6	1	C	M	Sandy Clay Loam	Shovel Restriction

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): 5

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB015_PSS
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.861135 Long: -97.079618 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches): **2**	
Water Table Present?	Yes	No **X**	Depth (inches): **>20**	
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**	**Wetland Hydrology Present? Yes X No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: fish.

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

Sampling Point: **DPB015_PSS**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**100**	x 1 =	**100**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**100** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	N 5	95	None	—	—	—	Clay	
0-20	N 2.5	5	None	—	—	—	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___X___ **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB016_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): Convex Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.861518 Long: -97.079958 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USP
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 _____	No **X**	
Hydric Soil Present?	Yes **X**	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No **X**
Wetland Hydrology Present?	Yes **X**	No _____	

Remarks:

This point was determined not to be within a wetland due to the lack of hydrophytic vegetation.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- **X** High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes **X**	No _____	Depth (inches): **4**
Saturation Present? (includes capillary fringe)	Yes _____	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes **X** No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: crabs.

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

Sampling Point: **DPB016_U**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

SOIL

Sampling Point: **DPB016_U**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/3	95	10YR 4/6	5	C	PL	Sandy Loam	Dual Matrix
4-20	N 5	60	None	—	—	—	Sandy Loam	
4-20	N 4	40	None	—	—	—	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB017_PSS
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.861436 Long: -97.079991 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E1UBL
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes **X** No
Wetland Hydrology Present?	Yes **X**	No	

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No		Depth (inches): **2**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes **X** No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: fish.

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

Sampling Point: **DPB017_PSS**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**100**	x 1 =	**100**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**100** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	N 5	95	None	—	—	—	Clay	
0-20	N 2.5	5	None	—	—	—	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___X___ **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB018_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.862647 Long: -97.081215 Datum: North American Datum 1983
Soil Map Unit Name: Tidal flats, occasionally ponded NWI Classification: E2EM1N
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- **X** High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____ No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes **X** No ____	Depth (inches):	**0**
Saturation Present? (includes capillary fringe)	Yes ____ No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPB018_PEM**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	**100**	x 1 =	**100**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**100** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	2.5Y 5/1	100	None	—	—	—	Sandy Loam	
3-20	N 4	98	10YR 5/4	2	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB019_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.862612 Long: -97.081117 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USP
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 _____	No **X**	
Hydric Soil Present?	Yes **X**	No _____	**Is the Sampled Area within a Wetland?** Yes _____ No **X**
Wetland Hydrology Present?	Yes **X**	No _____	

Remarks:

This point was determined not to be within a wetland due to the lack of hydrophytic vegetation.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No _____	Depth (inches): **2**	
Water Table Present?	Yes _____ No **X**	Depth (inches): **>20**	
Saturation Present? (includes capillary fringe)	Yes _____ No **X**	Depth (inches): **>20**	**Wetland Hydrology Present?** Yes **X** No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPB019_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	N 4	100	None	—	—	—	Sandy Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___X___ **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB020_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.862819 Long: -97.081142 Datum: North American Datum 1983
Soil Map Unit Name: Tidal flats, occasionally ponded NWI Classification: E2EM1N
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No _____	
Hydric Soil Present?	Yes **X**	No _____	**Is the Sampled Area within a Wetland?** Yes **X** No _____
Wetland Hydrology Present?	Yes **X**	No _____	

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- **X** High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes **X**	No _____	Depth (inches): **0**
Saturation Present? (includes capillary fringe)	Yes _____	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes **X** No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPB020_PEM**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**100**	x 1 =	**100**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**100** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	2.5Y 5/1	100	None	—	—	—	Sandy Loam	
3-20	N 4	98	10YR 5/4	2	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB021_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.862551 Long: -97.081019 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USP
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 _____	No **X**	**Is the Sampled Area within a Wetland?**	**Yes** _____	**No** **X**
Hydric Soil Present?	Yes _____	No **X**			
Wetland Hydrology Present?	Yes **X**	No _____			

Remarks:

This point was determined not to be within a wetland due to the lack of hydrophytic vegetation and hydric soils.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- _____ High Water Table (A2)
- _____ Saturation (A3)
- _____ Water Marks (B1)
- _____ Sediment Deposits (B2)
- _____ Drift Deposits (B3)
- _____ Algal Mat or Crust (B4)
- _____ Iron Deposits (B5)
- _____ Inundation Visible on Aerial Imagery (B7)
- _____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- _____ Marl Deposits (B15) **(LRR U)**
- _____ Hydrogen Sulfide Odor (C1)
- _____ Oxidized Rhizospheres on Living Roots(C3)
- _____ Presence of Reduced Iron (C4)
- _____ Recent Iron Reduction in Tilled Soils (C6)
- _____ Thin Muck Surface (C7)
- _____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- _____ Surface Soil Cracks (B6)
- _____ Sparsely Vegetated Concave Surface (B8)
- _____ Drainage Patterns (B10)
- _____ Moss Trim Lines (B16)
- _____ Dry-Season Water Table (C2)
- _____ Crayfish Burrows (C8)
- _____ Saturation Visible on Aerial Imagery (C9)
- _____ Geomorphic Position (D2)
- _____ Shallow Aquitard (D3)
- _____ FAC-Neutral Test (D5)
- _____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No _____	Depth (inches): **5**	
Water Table Present?	Yes _____	No **X**	Depth (inches): **>20**	
Saturation Present? (includes capillary fringe)	Yes _____	No **X**	Depth (inches): **>20**	**Wetland Hydrology Present?** **Yes** **X** **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: crabs, fish.

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

Sampling Point: **DPB021_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

SOIL

Sampling Point: **DPB021_U**

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	N 3	100	None	—	—	—	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB022_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.862829 Long: -97.081215 Datum: North American Datum 1983
Soil Map Unit Name: Tidal flats, occasionally ponded NWI Classification: E2USN
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No _____			
Hydric Soil Present?	Yes **X**	No _____	**Is the Sampled Area within a Wetland?**	Yes **X**	No _____
Wetland Hydrology Present?	Yes **X**	No _____			

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- **X** High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes **X**	No _____	Depth (inches):	**0**
Saturation Present? (includes capillary fringe)	Yes _____	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? Yes **X** No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPB022_PEM**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**100**	x 1 =	**100**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**100** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y 5/1	100	None	—	—	—	Sandy Loam	
3-20	N 4	98	10YR 5/4	2	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB023_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.862538 Long: -97.080890 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USP
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes **X**	No	

Remarks:

This point was determined not to be within a wetland due to the lack of hydrophytic vegetation.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No	Depth (inches):	**2**
Water Table Present?	Yes No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? Yes **X** No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPB023_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	N 4	100	None	—	—	—	Sandy Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___X___ **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB024_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.862999 Long: -97.080512 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USP
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes **X** No
Wetland Hydrology Present?	Yes **X**	No	

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- **X** High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____ No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes **X** No ____	Depth (inches):	**2**
Saturation Present? (includes capillary fringe)	Yes ____ No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? Yes **X** No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: crabs.

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

Sampling Point: **DPB024_PEM**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**100**	x 1 =	**100**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**100** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y 5/1	100	None	—	—	—	Sandy Loam	
3-20	N 4	98	10YR 5/4	2	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB025_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.862947 Long: -97.080559 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USP
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 _____	No **X**	**Is the Sampled Area within a Wetland?**	**Yes** _____	**No** **X**
Hydric Soil Present?	Yes _____	No **X**			
Wetland Hydrology Present?	Yes _____	No **X**			

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes _____	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes _____	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes** _____ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB025_U**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10YR 5/1	100	None	—	—	—	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB026_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.862977 Long: -97.080464 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USP
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No _____	
Hydric Soil Present?	Yes **X**	No _____	**Is the Sampled Area within a Wetland?** Yes **X** No _____
Wetland Hydrology Present?	Yes **X**	No _____	

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- **X** High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes **X**	No _____	Depth (inches): **2**
Saturation Present? (includes capillary fringe)	Yes _____	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes **X** No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: crabs.

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

Sampling Point: **DPB026_PEM**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	**100**	x 1 =	**100**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**100** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y 5/1	100	None	—	—	—	Sandy Loam	
3-20	N 4	98	10YR 5/4	2	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB027_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.862908 Long: -97.080446 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USP
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 _____	No **X**	**Is the Sampled Area within a Wetland?**	**Yes** _____	**No** **X**
Hydric Soil Present?	Yes _____	No **X**			
Wetland Hydrology Present?	Yes _____	No **X**			

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No **X**	Depth (inches): **N/A**		
Water Table Present?	Yes _____	No **X**	Depth (inches): **>20**		
Saturation Present? (includes capillary fringe)	Yes _____	No **X**	Depth (inches): **>20**	**Wetland Hydrology Present?**	**Yes** _____ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB027_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10YR 5/1	100	None	—	—	—	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB028_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.864655 Long: -97.083574 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2EM1N
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No _____			
Hydric Soil Present?	Yes **X**	No _____	**Is the Sampled Area**		
Wetland Hydrology Present?	Yes **X**	No _____	**within a Wetland?**	**Yes X**	**No** _____

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- **X** High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No **X**	Depth (inches):	**N/A**	
Water Table Present?	Yes **X**	No _____	Depth (inches):	**2**	
Saturation Present? (includes capillary fringe)	Yes _____	No **X**	Depth (inches):	**>20**	**Wetland Hydrology Present?** **Yes X** **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: fish.

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

Sampling Point: **DPB028_PEM**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**100**	x 1 =	**100**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**100** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	2.5Y 5/1	100	None	—	—	—	Sandy Loam	
3-20	N 4	98	10YR 5/4	2	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB029_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.864665 Long: -97.083477 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USP
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 _____	No **X**	**Is the Sampled Area within a Wetland?**	**Yes** _____	**No** **X**
Hydric Soil Present?	Yes _____	No **X**			
Wetland Hydrology Present?	Yes _____	No **X**			

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No **X**	Depth (inches): **N/A**		
Water Table Present?	Yes _____	No **X**	Depth (inches): **>20**		
Saturation Present? (includes capillary fringe)	Yes _____	No **X**	Depth (inches): **>20**	**Wetland Hydrology Present?**	**Yes** _____ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB029_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10YR 5/1	100	None	—	—	—	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB030_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.864895 Long: -97.082785 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USN
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No		
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes **X**	No	**within a Wetland?**	**Yes X** **No**

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches): **1**	
Water Table Present?	Yes	No **X**	Depth (inches): **>20**	
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**	**Wetland Hydrology Present?** **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: fish, crabs.

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

Sampling Point: **DPB030_PEM**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	45	Yes	OBL
2. *Spartina alterniflora*	10	No	OBL
3. *Salicornia depressa*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**60**	x 1 =	**60**
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:	**60** (A)		**60** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	2.5Y 5/1	100	None	—	—	—	Sandy Loam	
3-20	N 4	98	10YR 5/4	2	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB031_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.864943 Long: -97.082841 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USP
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 _____	No **X**	**Is the Sampled Area within a Wetland?**	**Yes** _____	**No** **X**
Hydric Soil Present?	Yes _____	No **X**			
Wetland Hydrology Present?	Yes _____	No **X**			

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes _____	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes _____	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes** _____ **No** **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB031_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10YR 5/1	100	None	—	—	—	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB032_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.865049 Long: -97.082707 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- **X** Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____ No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes ____ No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes **X** No ____	Depth (inches):	**0**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: crabs.

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

Sampling Point: **DPB032_PEM**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	80	Yes	OBL
2. *Salicornia depressa*	15	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**95**	x 1 =	**95**
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:	**95** (A)		**95** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/2	95	10YR 4/6	5	C	M	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB033_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.865111 Long: -97.082703 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	**Is the Sampled Area within a Wetland?**	**Yes**	**No X**
Hydric Soil Present?	Yes	No **X**			
Wetland Hydrology Present?	Yes	No **X**			

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches):	**N/A**	
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**	
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**	**Wetland Hydrology Present? Yes No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB033_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

SOIL

Sampling Point: **DPB033_U**

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10YR 5/1	100	None	—	—	—	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB034_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.865166 Long: -97.083611 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USP
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area**		
Hydric Soil Present?	Yes **X**	No	**within a Wetland?**	**Yes**	**No X**
Wetland Hydrology Present?	Yes	No **X**			

Remarks:

This point was determined not to be within a wetland due to the lack of wetland hydrology.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**		
Water Table Present?	Yes	No **X**	Depth (inches): **>20**		
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**	**Wetland Hydrology Present?**	**Yes** **No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB034_U**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Salicornia depressa*	5	Yes	OBL
2. *Batis maritima*	5	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**10**	x 1 =	**10**
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:	**10** (A)		**10** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

SOIL

Sampling Point: **DPB034_U**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y 5/1	100	None	—	—	—	Sandy Loam	
3-20	N 4	98	10YR 5/4	2	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB035_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.865125 Long: -97.083236 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USP
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- **X** High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____ No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes **X** No ____	Depth (inches):	**2**
Saturation Present? (includes capillary fringe)	Yes ____ No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: crabs.

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

Sampling Point: **DPB035_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**100**	x 1 =	**100**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**100** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	2.5Y 5/1	100	None	—	—	—	Sandy Loam	
3-20	N 4	98	10YR 5/4	2	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB036_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.865165 Long: -97.083116 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USP
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes **X** No
Wetland Hydrology Present?	Yes **X**	No	

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No	Depth (inches):	**2**
Water Table Present?	Yes ____ No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes ____ No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? Yes **X** No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: fish, crabs.

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

Sampling Point: **DPB036_PEM**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	60	Yes	OBL
2. *Salicornia depressa*	5	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	65 = Total Cover		
50% of total cover: 32.5	20% of total cover: 13		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	**65**	x 1 =	**65**
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:	**65** (A)		**65** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	N 4	95	None	—	—	—	Sandy Loam	
0-20	N 2	5	None	—	—	—	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB037_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.865128 Long: -97.083499 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USP
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No ____
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 ____	No **X**	
Hydric Soil Present?	Yes ____	No **X**	**Is the Sampled Area within a Wetland?** Yes ____ No **X**
Wetland Hydrology Present?	Yes ____	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____ No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes ____ No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes ____ No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? Yes ____ No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB037_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10YR 5/1	100	None	—	—	—	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB038_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.866105 Long: -97.083001 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB038_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

SOIL

Sampling Point: **DPB038_U**

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10YR 5/1	100	None	—	—	—	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB039_PSS
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.866256 Long: -97.083114 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- **X** Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____ No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes ____ No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes **X** No ____	Depth (inches):	**0**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPB039_PSS**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**100**	x 1 =	**100**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**100** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	2.5Y 5/1	100	None	—	—	—	Sandy Loam	
3-20	N 4	98	10YR 5/4	2	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB040_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.866622 Long: -97.083647 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches): **1**	
Water Table Present?	Yes	No **X**	Depth (inches): **>20**	
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**	**Wetland Hydrology Present? Yes X No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: fish, crabs.

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

Sampling Point: **DPB040_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Batis maritima*	55	Yes	OBL
2. *Spartina alterniflora*	45	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**100**	x 1 =	**100**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**100** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	2.5Y 5/1	100	None	—	—	—	Sandy Loam	
3-20	N 4	98	10YR 5/4	2	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB041_PSS
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.867446 Long: -97.084496 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- **X** Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____ No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes ____ No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes **X** No ____	Depth (inches):	**0**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPB041_PSS**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**100**	x 1 =	**100**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**100** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	2.5Y 5/1	100	None	—	—	—	Sandy Loam	
3-20	N 4	98	10YR 5/4	2	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___X___ **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB042_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.867404 Long: -97.084543 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB042_U**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

SOIL

Sampling Point: **DPB042_U**

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10YR 5/1	100	None	—	—	—	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB043_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.868371 Long: -97.085511 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USN
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB043_U**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

SOIL

Sampling Point: **DPB043_U**

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10YR 5/1	100	None	—	—	—	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB044_PSS
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.868473 Long: -97.085591 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E2USN
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- **X** Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes **X**	No	Depth (inches):	**0**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPB044_PSS**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	100	Yes	OBL
2.			
3.			
4.			
5.			
6.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**100**	x 1 =	**100**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**100** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	2.5Y 5/1	100	None	—	—	—	Sandy Loam	
3-20	N 4	98	10YR 5/4	2	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB045_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.869597 Long: -97.086837 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- **X** Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes **X**	No	Depth (inches):	**0**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: crabs.

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

Sampling Point: **DPB045_PEM**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Salicornia depressa*	80	Yes	OBL
2. *Avicennia germinans*	100	Yes	OBL
3. *Salicornia bigelovii*	10	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	190 = Total Cover		
50% of total cover: 95	20% of total cover: 38		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**190**	x 1 =	**190**
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:	**190** (A)		**190** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	2.5Y 5/1	100	None	—	—	—	Sandy Loam	
3-20	N 4	98	10YR 5/4	2	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB046_PSS
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.872426 Long: -97.090045 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- **X** Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____ No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes ____ No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes **X** No ____	Depth (inches):	**2**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: crabs.

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

Sampling Point: **DPB046_PSS**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	45	Yes	OBL
2.			
3.			
4.			
5.			
6.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Herb Stratum (Plot size: 30 ft.)			
1. *Salicornia bigelovii*	35	Yes	OBL
2. *Lycium carolinianum*	20	No	FACW
3. *Salicornia depressa*	10	No	OBL
4. *Distichlis littoralis*	40	Yes	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	105 = Total Cover		
50% of total cover: 52.5	20% of total cover: 21		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**130**	x 1 =	**130**
FACW species	**20**	x 2 =	**40**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**150** (A)		**170** (B)

Prevalence Index = B/A = **1.13**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 3/2	95	10YR 3/6	5	C	PL	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB047_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.872477 Long: -97.090189 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	**Is the Sampled Area within a Wetland?**	**Yes**	**No X**
Hydric Soil Present?	Yes	No **X**			
Wetland Hydrology Present?	Yes	No **X**			

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches):	**N/A**	
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**	
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**	**Wetland Hydrology Present? Yes No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB047_U**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/1	100	None	—	—	—	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB048_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.873819 Long: -97.092048 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	**Is the Sampled Area within a Wetland?**	**Yes**	**No X**
Hydric Soil Present?	Yes	No **X**			
Wetland Hydrology Present?	Yes	No **X**			

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches):	**N/A**	
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**	
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**	**Wetland Hydrology Present? Yes No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB048_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

SOIL

Sampling Point: **DPB048_U**

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10YR 5/1	100	None	—	—	—	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB049_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.873851 Long: -97.092148 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No		
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes **X**	No	**within a Wetland?**	**Yes X** **No**

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- **X** Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches):	**0**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

VEGETATION (Five Strata) - Use scientific names of plants. Sampling Point: **DPB049_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Distichlis littoralis*	80	Yes	OBL
2. *Salicornia depressa*	10	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**90**	x 1 =	**90**
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:	**90** (A)		**90** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	2.5Y 5/1	100	None	—	—	—	Sandy Loam	
3-20	N 4	98	10YR 5/4	2	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB050_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.874327 Long: -97.092659 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No		
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes **X**	No	**within a Wetland?**	**Yes X** **No**

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- **X** Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches):	**2**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: crabs.

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

Sampling Point: **DPB050_PEM**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Lycium carolinianum*	60	Yes	FACW
2. *Salicornia bigelovii*	30	Yes	OBL
3. *Carex cherokeensis*	5	No	FACW
4. *Axonopus fissifolius*	10	No	FACW
5. *Eleocharis palustris*	10	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	115 = Total Cover		
50% of total cover: 57.5	20% of total cover: 23		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**40**	x 1 =	**40**
FACW species	**75**	x 2 =	**150**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**115** (A)		**190** (B)

Prevalence Index = B/A = **1.65**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	2.5Y 5/1	100	None	—	—	—	Sandy Loam	
3-20	N 4	98	10YR 5/4	2	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB051_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.874500 Long: -97.092852 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes **X**	No	

Remarks:

This point was determined not to be within a wetland due to the lack of hydrophytic vegetation and hydric soils.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- **X** Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes **X**	No	Depth (inches): **0**

Wetland Hydrology Present? Yes **X** No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPB051_U**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0								Shovel restriction

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: Concrete

Depth (inches): 0

Hydric Soil Present? Yes _____ No X

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB052_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.875722 Long: -97.093804 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes **X** No
Wetland Hydrology Present?	Yes **X**	No	

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No	Depth (inches):	**2**
Water Table Present?	Yes No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? Yes **X** No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: fish, crabs.

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

Sampling Point: **DPB052_PEM**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Salicornia depressa*	15	Yes	OBL
2. *Spartina alterniflora*	10	Yes	OBL
3. *Avicennia germinans*	5	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**30**	x 1 =	**30**
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:	**30** (A)		**30** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

SOIL

Sampling Point: **DPB052_PEM**

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	2.5Y 5/1	100	None	—	—	—	Sand	Gravel mixed with matrix.
3-20	N 4	98	10YR 5/4	2	C	PL	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

____ 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 Mucky Mineral (S1) **(LRR O, S)**
X Sandy Gleyed Matrix (S4)
X Sandy Redox (S5)
____ Stripped Matrix (S6)
____ Dark Surface (S7) **(LRR P, S, T, U)**
____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
____ Thin Dark Surface (S9) **(LRR S, T, U)**
____ Loamy Mucky Mineral (F1) **(LRR O)**
____ Loamy Gleyed Matrix (F2)
____ Depleted Matrix (F3)
____ Redox Dark Surface (F6)
____ Depleted Dark Surface (F7)
____ Redox Depressions (F8)
____ Marl (F10) **(LRR U)**
____ Depleted Ochric (F11) **(MLRA 151)**
____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
____ Umbric Surface (F13) **(LRR P, T, U)**
____ Delta Ochric (F17) **(MLRA 151)**
____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

____ 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)

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

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB053_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.875774 Long: -97.093841 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No ____
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 ____	No **X**	
Hydric Soil Present?	Yes ____	No **X**	**Is the Sampled Area within a Wetland?** Yes ____ No **X**
Wetland Hydrology Present?	Yes ____	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____ No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes ____ No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes ____ No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? Yes ____ No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB053_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10YR 5/1	100	None	—	—	—	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB054_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.876708 Long: -97.095071 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes **X**	No	

Remarks:

This point was determined not to be within a wetland due to the lack of hydrophytic vegetation.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No	Depth (inches):	**0**
Water Table Present?	Yes No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? Yes **X** No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: crabs.

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

Sampling Point: **DPB054_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 4/2	98	10YR 3/6	2	C	PL	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

____ 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 Mucky Mineral (S1) **(LRR O, S)**
____ Sandy Gleyed Matrix (S4)
X Sandy Redox (S5)
____ Stripped Matrix (S6)
____ Dark Surface (S7) **(LRR P, S, T, U)**
____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
____ Thin Dark Surface (S9) **(LRR S, T, U)**
____ Loamy Mucky Mineral (F1) **(LRR O)**
____ Loamy Gleyed Matrix (F2)
____ Depleted Matrix (F3)
____ Redox Dark Surface (F6)
____ Depleted Dark Surface (F7)
____ Redox Depressions (F8)
____ Marl (F10) **(LRR U)**
____ Depleted Ochric (F11) **(MLRA 151)**
____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
____ Umbric Surface (F13) **(LRR P, T, U)**
____ Delta Ochric (F17) **(MLRA 151)**
____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

____ 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)

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

Restrictive Layer (if observed):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB055_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.877191 Long: -97.095292 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: E1UBLx
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No		
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes **X**	No	**within a Wetland?**	**Yes X** **No**

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- **X** Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- **X** Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes **X**	No	Depth (inches):	**0**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: crabs.

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

Sampling Point: **DPB055_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	30	Yes	OBL
2. *Salicornia depressa*	70	Yes	OBL
3. *Salicornia bigelovii*	15	No	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	115 = Total Cover		
50% of total cover: 57.5	20% of total cover: 23		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**115**	x 1 =	**115**
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:	**115** (A)		**115** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10GY 5/1	90					Clay	
0-20	5PB 4/1	10					Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ___X___ **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB056_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.878575 Long: -97.097310 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB056_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0								Shovel Restriction

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): 0

Hydric Soil Present? Yes _____ No X

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB057_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.878633 Long: -97.097256 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches):	**2**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPB057_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Eleocharis palustris*	60	Yes	OBL
2. *Axonopus fissifolius*	10	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**60**	x 1 =	**60**
FACW species	**10**	x 2 =	**20**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**70** (A)		**80** (B)

Prevalence Index = B/A = **1.14**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	2.5Y 5/1	100	None	—	—	—	Sandy Loam	
3-20	N 4	98	10YR 5/4	2	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB058_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.878822 Long: -97.097612 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X**	**No**
Hydric Soil Present?	Yes **X**	No			
Wetland Hydrology Present?	Yes **X**	No			

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches):	**2**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPB058_PEM**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Eleocharis palustris*	60	Yes	OBL
2. *Axonopus fissifolius*	10	No	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**60**	x 1 =	**60**
FACW species	**10**	x 2 =	**20**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**70** (A)		**80** (B)

Prevalence Index = B/A = **1.14**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	2.5Y 5/1	100	None	—	—	—	Sandy Loam	
3-20	N 4	98	10YR 5/4	2	C	PL	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Nueces Sampling Date: February 5, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPB059_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.878791 Long: -97.097529 Datum: North American Datum 1983
Soil Map Unit Name: Ijam clay loam, rarely flooded NWI Classification: N/A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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	No **X**	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of all three wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**	
Water Table Present?	Yes	No **X**	Depth (inches): **>20**	
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**	**Wetland Hydrology Present?** Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPB059_U**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0								Shovel Restriction

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: Gravel

Depth (inches): 0

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Aransas Sampling Date: February 7, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA060_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Beach Local relief (concave, convex, none): Convex Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.853614 Long: -97.040937 Datum: North American Datum 1983
Soil Map Unit Name: Beaches NWI Classification: M2USP
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No ____
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 ____	No **X**	
Hydric Soil Present?	Yes ____	No **X**	**Is the Sampled Area within a Wetland?** Yes ____ No **X**
Wetland Hydrology Present?	Yes **X**	No ____	

Remarks:

This point was determined not to be within a wetland due to the lack of hydrophytic vegetation and hydric soils.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- **X** Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____ No **X**	Depth (inches): **N/A**	
Water Table Present?	Yes ____ No **X**	Depth (inches): **>20**	
Saturation Present? (includes capillary fringe)	Yes ____ No **X**	Depth (inches): **>20**	**Wetland Hydrology Present?** Yes **X** No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPA060_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: **0** (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: **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	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**0** (A)		**0** (B)

Prevalence Index = B/A = **N/A**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is >50%

____ 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X**

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

No positive indication of hydrophytic vegetation was observed (≥50% of dominant species indexed as FAC− or drier).

No vegetation present.

SOIL

Sampling Point: **DPA060_U**

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-20	10YR 8/1	100	None	—	—	—	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Aransas Sampling Date: February 7, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA061_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Dune Local relief (concave, convex, none): Convex Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.854082 Long: -97.043379 Datum: North American Datum 1983
Soil Map Unit Name: Beaches NWI Classification: January 0, 1900
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of hydric soils and wetland hydrology.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA061_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Fimbristylis puberula*	25	No	OBL
2. *Juncus nodatus*	20	No	OBL
3. *Rhynchospora colorata*	15	No	FACW
4. *Juncus effusus*	10	No	OBL
5. *Andropogon glomeratus*	80	Yes	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	150 = Total Cover		
50% of total cover: 75	20% of total cover: 30		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**55**	x 1 =	**55**
FACW species	**95**	x 2 =	**190**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**150** (A)		**245** (B)

Prevalence Index = B/A = **1.63**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 6/3	95	5YR 4/6	5	C	PL	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Aransas Sampling Date: February 7, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA062_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.853951 Long: -97.044925 Datum: North American Datum 1983
Soil Map Unit Name: Psamments, rarely flooded NWI Classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No**, Soil **Yes**, or Hydrology **No** 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 **X**	No _____		
Hydric Soil Present?	Yes **X**	No _____	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes **X**	No _____	**within a Wetland?**	**Yes X** **No** _____

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- **X** Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No _____	Depth (inches):	**12**
Water Table Present?	Yes _____	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes _____	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPA062_PEM**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Schoenoplectus pungens*	80	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	**80**	x 1 =	**80**
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:	**80** (A)		**80** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0								Shovel Restriction

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)
- **X** Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Deep water

Depth (inches): 0

Hydric Soil Present? Yes X No ____

Remarks:

A positive indication of hydric soil was observed.

Water too deep to dig; soils assumed hydric.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Aransas Sampling Date: February 7, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA063_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): Convex Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.853981 Long: -97.045047 Datum: North American Datum 1983
Soil Map Unit Name: Psamments, rarely flooded NWI Classification: PEM1C
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No _____	
Hydric Soil Present?	Yes _____	No **X**	**Is the Sampled Area within a Wetland?** Yes _____ No **X**
Wetland Hydrology Present?	Yes _____	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of hydric soils and wetland hydrology.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes _____	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes _____	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes _____ No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA063_U**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Schoenoplectus pungens*	55	Yes	OBL
2. *Andropogon glomeratus*	20	Yes	FACW
3. *Setaria parviflora*	10	No	FACW
4. *Hydrocotyle bonariensis*	10	No	FACW
5. *Borrichia frutescens*	15	No	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	110 = Total Cover		
50% of total cover: 55	20% of total cover: 22		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**70**	x 1 =	**70**
FACW species	**40**	x 2 =	**80**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**110** (A)		**150** (B)

Prevalence Index = B/A = **1.36**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 6/3	90	5YR 4/6	10	C	PL	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Aransas Sampling Date: February 7, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA064_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): Convex Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.854052 Long: -97.045173 Datum: North American Datum 1983
Soil Map Unit Name: Psamments, rarely flooded NWI Classification: January 0, 1900
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area**		
Hydric Soil Present?	Yes **X**	No	**within a Wetland?**	**Yes**	**No X**
Wetland Hydrology Present?	Yes	No **X**			

Remarks:

This point was determined not to be within a wetland due to the lack of wetland hydrology.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches):	**N/A**	
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**	
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**	**Wetland Hydrology Present?** **Yes** **No X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA064_U**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Hydrocotyle bonariensis*	10	No	FACW
2. *Juncus effusus*	20	Yes	OBL
3. *Gomphrena serrata*	5	No	UPL
4. *Andropogon virginicus*	55	Yes	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**20**	x 1 =	**20**
FACW species	**10**	x 2 =	**20**
FAC species	**55**	x 3 =	**165**
FACU species	**0**	x 4 =	**0**
UPL species	**5**	x 5 =	**25**
Column Totals:	**90** (A)		**230** (B)

Prevalence Index = B/A = **2.56**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 4/4	98	10YR 3/6	2	C	PL	Sand	
5-20	10YR 5/2	80	10YR 3/6	10	C	PL	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Aransas Sampling Date: February 7, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA065_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.854028 Long: -97.045100 Datum: North American Datum 1983
Soil Map Unit Name: Psamments, rarely flooded NWI Classification: January 0, 1900
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **Yes**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X**	**No**
Hydric Soil Present?	Yes **X**	No			
Wetland Hydrology Present?	Yes **X**	No			

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- **X** Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches):	**18**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPA065_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Typha latifolia*	95	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47.5	20% of total cover: 19		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**95**	x 1 =	**95**
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:	**95** (A)		**95** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0								Shovel Restriction

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)
- **X** Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Deep water

Depth (inches): 0

Hydric Soil Present? Yes X No ____

Remarks:

A positive indication of hydric soil was observed.

Water too deep to dig; soils assumed hydric.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Aransas Sampling Date: February 7, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA066_U
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Hilltop Local relief (concave, convex, none): Convex Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.854469 Long: -97.047599 Datum: North American Datum 1983
Soil Map Unit Name: Psamments, rarely flooded NWI Classification: January 0, 1900
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	
Hydric Soil Present?	Yes	No **X**	**Is the Sampled Area within a Wetland?** Yes No **X**
Wetland Hydrology Present?	Yes	No **X**	

Remarks:

This point was determined not to be within a wetland due to the lack of hydric soils and wetland hydrology.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes	No **X**	Depth (inches): **>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes No **X**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No positive indication of wetland hydrology was observed.

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

Sampling Point: **DPA066_U**

	Absolute % cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Spartina spartinae*	60	Yes	OBL
2. *Andropogon virginicus*	25	Yes	FAC
3. *Rhynchospora colorata*	35	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	120 = Total Cover		
50% of total cover: 60	20% of total cover: 24		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**60**	x 1 =	**60**
FACW species	**35**	x 2 =	**70**
FAC species	**25**	x 3 =	**75**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**120** (A)		**205** (B)

Prevalence Index = B/A = **1.71**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/3	100	None	—	—	—	Sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ **No** **X**

Remarks:

No positive indication of hydric soils was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Aransas Sampling Date: February 7, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA067_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): T Lat: 27.853575 Long: -97.047098 Datum: North American Datum 1983
Soil Map Unit Name: Beaches NWI Classification: E2USN
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area**		
Hydric Soil Present?	Yes **X**	No	**within a Wetland?**	**Yes X**	**No**
Wetland Hydrology Present?	Yes **X**	No			

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- **X** High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches):	**N/A**	
Water Table Present?	Yes **X**	No	Depth (inches):	**10**	
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**	**Wetland Hydrology Present? Yes X No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPA067_PEM**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Spartina spartinae*	15	No	OBL
2. *Borrichia frutescens*	30	Yes	OBL
3. *Distichlis spicata*	80	Yes	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	125 = Total Cover		
50% of total cover: 62.5	20% of total cover: 25		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

	Total % Cover of:		Multiply by:
OBL species	**125**	x 1 =	**125**
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:	**125** (A)		**125** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 5/3	80	10YR 4/3	20	C	PL	Sand	
6-20	N 4	80	10YR 4/3	5	C	PL	Sandy Clay Loam	Dual Matrix
6-20	10YR 5/3	15	None	—	—	—	Sandy Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- **X** Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Aransas Sampling Date: February 7, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA069_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.854216 Long: -97.050501 Datum: North American Datum 1983
Soil Map Unit Name: Beaches NWI Classification: E2USN
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area within a Wetland?**	**Yes X** **No**
Hydric Soil Present?	Yes **X**	No		
Wetland Hydrology Present?	Yes **X**	No		

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- **X** Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes	No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes **X**	No	Depth (inches):	**0**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: crabs.

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

Sampling Point: **DPA069_PEM**

	Absolute	Dominant	Indicator
Tree Stratum (Plot size: 30 ft.)	% cover	Species?	Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Salicornia bigelovii*	90	Yes	OBL
2. *Lycium carolinianum*	5	No	FACW
3. *Sesuvium portulacastrum*	5	No	FACW
4. *Distichlis littoralis*	5	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	105 = Total Cover		
50% of total cover: 52.5	20% of total cover: 21		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**95**	x 1 =	**95**
FACW species	**10**	x 2 =	**20**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**105** (A)		**115** (B)

Prevalence Index = B/A = **1.10**

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤ 3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/2	90	10YR 5/8	5	C	PL	Sandy Clay	
0-20	N 2.5	5	None	—	—	—	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Aransas Sampling Date: February 7, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA070_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): Convex Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.854171 Long: -97.050407 Datum: North American Datum 1983
Soil Map Unit Name: Beaches NWI Classification: E2USN
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No ____
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No ____			
Hydric Soil Present?	Yes **X**	No ____	**Is the Sampled Area within a Wetland?**	Yes **X**	No ____
Wetland Hydrology Present?	Yes **X**	No ____			

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- **X** High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No **X**	Depth (inches):	**N/A**
Water Table Present?	Yes **X**	No ____	Depth (inches):	**15**
Saturation Present? (includes capillary fringe)	Yes ____	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? Yes **X** No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPA070_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Distichlis littoralis*	95	Yes	OBL
2. *Salicornia bigelovii*	5	No	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**100**	x 1 =	**100**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**100** (A)		**100** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/2	98	10YR 5/8	2	C	PL	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Aransas Sampling Date: February 7, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA072_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.854289 Long: -97.051967 Datum: North American Datum 1983
Soil Map Unit Name: Beaches NWI Classification: January 0, 1900
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	
Hydric Soil Present?	Yes **X**	No	**Is the Sampled Area within a Wetland?** Yes **X** No
Wetland Hydrology Present?	Yes **X**	No	

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No	Depth (inches):	**1**
Water Table Present?	Yes No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? Yes **X** No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: crabs.

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

Sampling Point: **DPA072_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Avicennia germinans*	60	Yes	OBL
2. *Salicornia bigelovii*	35	Yes	OBL
3. *Salicornia depressa*	3	No	OBL
4. *Distichlis spicata*	10	No	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	108 = Total Cover		
50% of total cover: 54	20% of total cover: 21.6		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**108**	x 1 =	**108**
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:	**108** (A)		**108** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ___

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5	10YR 5/2	98	10YR 4/6	2	C	M	Sandy Clay	
5-20	N 2.5	100	None	—	—	—	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Aransas Sampling Date: February 7, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA074_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Marsh, Saltwater Local relief (concave, convex, none): Concave Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.853607 Long: -97.051891 Datum: North American Datum 1983
Soil Map Unit Name: Beaches NWI Classification: PEM1A
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No	**Is the Sampled Area**		
Hydric Soil Present?	Yes **X**	No	**within a Wetland?**	**Yes X**	**No**
Wetland Hydrology Present?	Yes **X**	No			

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- **X** Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X**	No	Depth (inches):	**2**
Water Table Present?	Yes	No **X**	Depth (inches):	**>20**
Saturation Present? (includes capillary fringe)	Yes	No **X**	Depth (inches):	**>20**

Wetland Hydrology Present? **Yes X** **No**

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

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

Sampling Point: **DPA074_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Distichlis spicata*	75	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	75 = Total Cover		
50% of total cover: 37.5	20% of total cover: 15		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

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%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**75**	x 1 =	**75**
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:	**75** (A)		**75** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Redox Features Type[1]	Redox Features Loc[2]	Texture	Remarks
0-3	10YR 3/1	100	None	—	—	—	Silty Sand	
3-20	10YR 4/2	97	10YR 4/6	3	C	PL	Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

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

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM County: Aransas Sampling Date: February 7, 2019
Applicant/Owner: Lloyd Engineering State: Texas Sample Point: DPA076_PEM
Investigator(s): C. Bailey and N. Trivino Section, Township, Range: N/A
Landform (hillslope, terrace, etc.): Prairie Local relief (concave, convex, none): None Slope (%): 0-5
Subregion (LRR or MLRA): None Lat: 27.853799 Long: -97.049351 Datum: North American Datum 1983
Soil Map Unit Name: Beaches NWI Classification: E2USN
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) YES (if no, explain in Remarks.)
Are Vegetation **No**, Soil **No**, or Hydrology **No** significantly disturbed? Are "Normal Circumstances" present? Yes **X** No _____
Are Vegetation **No**, Soil **No**, or Hydrology **No** 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 **X**	No _____	
Hydric Soil Present?	Yes **X**	No _____	**Is the Sampled Area within a Wetland?** Yes **X** No _____
Wetland Hydrology Present?	Yes **X**	No _____	

Remarks:

This point was determined to be within a wetland due to the presence of all 3 wetland criteria.

HYDROLOGY

Wetland hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- **X** High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- **X** Aquatic Fauna (B13)
- ____ Marl Deposits (B15) **(LRR U)**
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots(C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- **X** FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No **X**	Depth (inches): **N/A**
Water Table Present?	Yes **X**	No _____	Depth (inches): **10**
Saturation Present? (includes capillary fringe)	Yes _____	No **X**	Depth (inches): **>20**

Wetland Hydrology Present? Yes **X** No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

A positive indication of wetland hydrology was observed (at least one primary indicator).

Aquatic Fauna: crabs.

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

Sampling Point: **DPA076_PEM**

Tree Stratum (Plot size: 30 ft.)	Absolute % cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 30 ft.)			
1. *Salicornia depressa*	15	Yes	OBL
2. *Distichlis littoralis*	30	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
50% of total cover: 22.5	20% of total cover: 9		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: **100%** (A/B)

Prevalence Index Worksheet:

Total % Cover of:		Multiply by:	
OBL species	**45**	x 1 =	**45**
FACW species	**0**	x 2 =	**0**
FAC species	**0**	x 3 =	**0**
FACU species	**0**	x 4 =	**0**
UPL species	**0**	x 5 =	**0**
Column Totals:	**45** (A)		**45** (B)

Prevalence Index = B/A = **1.00**

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- **X** 2 - Dominance Test is >50%
- **X** 3 - Prevalence Index is ≤ 3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6m) 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.

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** **X** **No** ____

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

A positive indication of hydrophytic vegetation was observed (>50% of dominant species indexed as OBL, FACW, or FAC).

A positive indication of hydrophytic vegetation was observed (Prevalence Index is ≤ 3.00).

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 5/2	97	10YR 4/6	2	C	PL	Sand	
0-20	N 2.5	1	None	—	—	—	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soils Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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 Mucky Mineral (S1) **(LRR O, S)**
- ____ Sandy Gleyed Matrix (S4)
- **X** Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) **(LRR P, S, T, U)**
- ____ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ____ Thin Dark Surface (S9) **(LRR S, T, U)**
- ____ Loamy Mucky Mineral (F1) **(LRR O)**
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) **(LRR U)**
- ____ Depleted Ochric (F11) **(MLRA 151)**
- ____ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ____ Umbric Surface (F13) **(LRR P, T, U)**
- ____ Delta Ochric (F17) **(MLRA 151)**
- ____ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ____ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ____ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes **X** **No** _____

Remarks:

A positive indication of hydric soil was observed.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM City/County: Aransas Sampling Date: 2/7/2019

Applicant/Owner: P66 State: TX Sampling Point: DP-WET-01

Investigator(s): J. Wiedeman / C. Gerken Section, Township, Range: NA

Landform (hillslope, terrace, etc.): depression, dunes Local relief (concave, convex, none): concave Slope (%): 1-2%

Subregion (LRR or MLRA): Atlantic and Gulf Coast Lowland (LRR T) Lat: 27.853894 Long: -97.042695 Datum: NAD 83

Soil Map Unit Name: Beaches, Psamments NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X No	
Wetland Hydrology Present?	Yes X No	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- Algal Mat or Crust (B4)
- Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- Marl Deposits (B15) (**LRR U**)
- Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- X Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- Sphagnum moss (D8) (**LRR T, U**)

Field Observations:

Surface Water Present?	Yes X	No	Depth (inches): 4
Water Table Present?	Yes X	No	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes X	No	Depth (inches): 0

Wetland Hydrology Present? Yes X No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-WET-01

Tree Stratum (Plot size: 30-ft Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5-ft Radius)			
1. *Eleocharis sp.*	80	Y	OBL
2. *Schenoplectus pungens*	20	Y	OBL
3. *Hydrocotyle bonariensis*	5	N	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	105 = Total Cover		
50% of total cover: 52	20% of total cover: 21		
Woody Vine Stratum (Plot size: 30-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant2 Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Test is ≤3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five 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.

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 X No ____

Remarks:

SOIL

Sampling Point: DP-WET-01

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 5/1	90	7.5YR 6/4	10	C	M/PL	sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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)
- ____ Coastal Prairie Redox (A16) (**MLRA 150A**)
- ____ Sandy Mucky Mineral (S1) (**RLRR O, S**)
- ____ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) (**LRR P, S, T, U**)
- ____ Polyvalue Below Surface (S8) (**LRR S, T, U**)
- ____ Thin Dark Surface (S9) (**LRR S, T, U**)
- ____ Loamy Mucky Mineral (F1) (**LRR O**)
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) (**LRR U**)
- ____ Depleted Ochric (F11) (**MLRA 151**)
- ____ Iron-Manganese Masses (F12) (**LRR O, P, T**)
- ____ Umbric Surface (F13) (**LRR P, T, U**)
- ____ Delta Ochric (F17) (**MLRA, 151**)
- ____ Reduced Vertic (F18) (**MLRA 150A, 150B**)
- ____ Piedmont Floodplain Soils (F19) (**MLRA 149A**)
- ____ Anomalous Bright Loamy Soils (F20) (**MLRA 149A, 153C, 153D**)

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM City/County: Aransas Sampling Date: 2/7/2019

Applicant/Owner: P66 State: TX Sampling Point: UDP-WET-01

Investigator(s): J. Wiedeman / C. Gerken Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 1-2%

Subregion (LRR or MLRA): Atlantic and Gulf Coast Lowland (LRR T) Lat: 27.853854 Long: -97.042751 Datum: NAD 83

Soil Map Unit Name: Beaches, Psamments NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _____ Surface Water (A1)
- _____ High Water Table (A2)
- _____ Saturation (A3)
- _____ Water Marks (B1)
- _____ Sediment Deposits (B2)
- _____ Drift Deposits (B3)
- _____ Algal Mat or Crust (B4)
- _____ Iron Deposits (B5)
- _____ Inundation Visible on Aerial Imagery (B7)
- _____ Water-Stained Leaves (B9)
- _____ Aquatic Fauna (B13)
- _____ Marl Deposits (B15) (**LRR U**)
- _____ Hydrogen Sulfide Odor (C1)
- _____ Oxidized Rhizospheres along Living Roots (C3)
- _____ Presence of Reduced Iron (C4)
- _____ Recent Iron Reduction in Tilled Soils (C6)
- _____ Thin Muck Surface (C7)
- _____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- _____ Surface Soil Cracks (B6)
- _____ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- _____ Moss Trim Lines (B16)
- _____ Dry-Season Water Table (C2)
- _____ Crayfish Burrows (C8)
- _____ Saturation Visible on Aerial Imagery (C9)
- _____ Geomorphic Position (D2)
- _____ Shallow Aquitard (D3)
- _____ FAC-Neutral Test (D5)
- _____ Sphagnum moss (D8) (**LRR T, U**)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: UDP-WET-01

Tree Stratum (Plot size: 30-ft Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5-ft Radius)			
1. *Andropogon virginicus*	50	Y	FAC
2. *Andropogon glomeratus*	20	N	FACW
3. *Schizachyrium scoparium*	20	N	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 30-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)

Total Number of Dominant2 Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species _____	x 3 = _____
FACU species _____	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____	(A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

_X_ 2 - Dominance Test is >50%

____ 3 - Prevalence Test is ≤3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five 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.

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 _X_ No _____

Remarks: Facultative salt prairie grasses

SOIL Sampling Point: UDP-WET-01

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 6/2	99	10YR 5/6	1	C	M	sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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)
- ____ Coastal Prairie Redox (A16) (**MLRA 150A**)
- ____ Sandy Mucky Mineral (S1) (**RLRR O, S**)
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) (**LRR P, S, T, U**)
- ____ Polyvalue Below Surface (S8) (**LRR S, T, U**)
- ____ Thin Dark Surface (S9) (**LRR S, T, U**)
- ____ Loamy Mucky Mineral (F1) (**LRR O**)
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) (**LRR U**)
- ____ Depleted Ochric (F11) (**MLRA 151**)
- ____ Iron-Manganese Masses (F12) (**LRR O, P, T**)
- ____ Umbric Surface (F13) (**LRR P, T, U**)
- ____ Delta Ochric (F17) (**MLRA, 151**)
- ____ Reduced Vertic (F18) (**MLRA 150A, 150B**)
- ____ Piedmont Floodplain Soils (F19) (**MLRA 149A**)
- ____ Anomalous Bright Loamy Soils (F20) (**MLRA 149A, 153C, 153D**)

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No __X__

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM City/County: Aransas Sampling Date: 2/7/2019

Applicant/Owner: P66 State: TX Sampling Point: DP-WET-02

Investigator(s): J. Wiedeman / C. Gerken Section, Township, Range: NA

Landform (hillslope, terrace, etc.): depression, dunes Local relief (concave, convex, none): concave Slope (%): 1-2%

Subregion (LRR or MLRA): Atlantic and Gulf Coast Lowland (LRR T) Lat: 27.852828 Long: -97.045437 Datum: NAD 83

Soil Map Unit Name: Beaches, Psamments NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- _____ Water Marks (B1)
- _____ Sediment Deposits (B2)
- _____ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- _____ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- _____ Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- _____ Marl Deposits (B15) (**LRR U**)
- _____ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- X Presence of Reduced Iron (C4)
- _____ Recent Iron Reduction in Tilled Soils (C6)
- _____ Thin Muck Surface (C7)
- _____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- _____ Surface Soil Cracks (B6)
- _____ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- _____ Moss Trim Lines (B16)
- _____ Dry-Season Water Table (C2)
- _____ Crayfish Burrows (C8)
- _____ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- _____ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- _____ Sphagnum moss (D8) (**LRR T, U**)

Field Observations:

Surface Water Present?	Yes X	No _____	Depth (inches): 0-18
Water Table Present?	Yes X	No _____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Wetland area along levee, some areas of deeper surface water throughout

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-WET-02

Tree Stratum (Plot size: 30-ft Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5-ft Radius)			
1. *Eleocharis sp.*	10	N	OBL
2. *Schenoplectus pungens*	40	Y	OBL
3. *Hydrocotyle bonariensis*	5	N	FACW
4. *Borrichia frutescens*	15	N	OBL
5. *Spartina patens*	30	Y	FACW
6. *Juncus roemerianus*	5	N	OBL
7.			
8.			
9.			
10.			
11.			
	105 = Total Cover		
50% of total cover: 52	20% of total cover: 21		
Woody Vine Stratum (Plot size: 30-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant2 Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Test is ≤3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five 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.

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 X No ____

Remarks:

SOIL

Sampling Point: DP-WET-02

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	90	10YR 5/6	10	C	M/PL	sand	
4-16	10YR 5/1	90	10YR 4/6	10	C	M/PL	sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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)
- ____ Coastal Prairie Redox (A16) (**MLRA 150A**)
- ____ Sandy Mucky Mineral (S1) (**RLRR O, S**)
- ____ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) (**LRR P, S, T, U**)
- ____ Polyvalue Below Surface (S8) (**LRR S, T, U**)
- ____ Thin Dark Surface (S9) (**LRR S, T, U**)
- ____ Loamy Mucky Mineral (F1) (**LRR O**)
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) (**LRR U**)
- ____ Depleted Ochric (F11) (**MLRA 151**)
- ____ Iron-Manganese Masses (F12) (**LRR O, P, T**)
- ____ Umbric Surface (F13) (**LRR P, T, U**)
- ____ Delta Ochric (F17) (**MLRA, 151**)
- ____ Reduced Vertic (F18) (**MLRA 150A, 150B**)
- ____ Piedmont Floodplain Soils (F19) (**MLRA 149A**)
- ____ Anomalous Bright Loamy Soils (F20) (**MLRA 149A, 153C, 153D**)

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM City/County: Aransas Sampling Date: 2/7/2019

Applicant/Owner: P66 State: TX Sampling Point: UDP-WET-02

Investigator(s): J. Wiedeman / C. Gerken Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 1-2%

Subregion (LRR or MLRA): Atlantic and Gulf Coast Lowland (LRR T) Lat: 27.85275 Long: -97.04511 Datum: NAD 83

Soil Map Unit Name: Beaches, Psamments NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _____ Surface Water (A1)
- _____ High Water Table (A2)
- _____ Saturation (A3)
- _____ Water Marks (B1)
- _____ Sediment Deposits (B2)
- _____ Drift Deposits (B3)
- _____ Algal Mat or Crust (B4)
- _____ Iron Deposits (B5)
- _____ Inundation Visible on Aerial Imagery (B7)
- _____ Water-Stained Leaves (B9)
- _____ Aquatic Fauna (B13)
- _____ Marl Deposits (B15) (**LRR U**)
- _____ Hydrogen Sulfide Odor (C1)
- _____ Oxidized Rhizospheres along Living Roots (C3)
- _____ Presence of Reduced Iron (C4)
- _____ Recent Iron Reduction in Tilled Soils (C6)
- _____ Thin Muck Surface (C7)
- _____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- _____ Surface Soil Cracks (B6)
- _____ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- _____ Moss Trim Lines (B16)
- _____ Dry-Season Water Table (C2)
- _____ Crayfish Burrows (C8)
- _____ Saturation Visible on Aerial Imagery (C9)
- _____ Geomorphic Position (D2)
- _____ Shallow Aquitard (D3)
- _____ FAC-Neutral Test (D5)
- _____ Sphagnum moss (D8) (**LRR T, U**)

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No _____ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: UDP-WET-02

Tree Stratum (Plot size: 30-ft Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5-ft Radius)			
1. *Andropogon virginicus*	30	Y	FAC
2. *Andropogon glomeratus*	20	Y	FACW
3. *Rhynchospora colorata*	10	N	FACW
4. *Spartina patens*	15	N	FACW
5. *Shenoplectus robustus*	15	N	OBL
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 30-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant2 Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals:	(A) (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- ____ 3 - Prevalence Test is ≤3.0[1]
- ____ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five 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.

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 X No ____

Remarks: Facultative salt prairie grasses

SOIL

Sampling Point: UDP-WET-02

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 5/3	90	10YR 5/6	10	C	M	sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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)
- ____ Coastal Prairie Redox (A16) (**MLRA 150A**)
- ____ Sandy Mucky Mineral (S1) (**RLRR O, S**)
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) (**LRR P, S, T, U**)
- ____ Polyvalue Below Surface (S8) (**LRR S, T, U**)
- ____ Thin Dark Surface (S9) (**LRR S, T, U**)
- ____ Loamy Mucky Mineral (F1) (**LRR O**)
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) (**LRR U**)
- ____ Depleted Ochric (F11) (**MLRA 151**)
- ____ Iron-Manganese Masses (F12) (**LRR O, P, T**)
- ____ Umbric Surface (F13) (**LRR P, T, U**)
- ____ Delta Ochric (F17) (**MLRA, 151**)
- ____ Reduced Vertic (F18) (**MLRA 150A, 150B**)
- ____ Piedmont Floodplain Soils (F19) (**MLRA 149A**)
- ____ Anomalous Bright Loamy Soils (F20) (**MLRA 149A, 153C, 153D**)

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM City/County: Aransas Sampling Date: 2/7/2019

Applicant/Owner: P66 State: TX Sampling Point: DP-WET-03

Investigator(s): J. Wiedeman / C. Gerken Section, Township, Range: NA

Landform (hillslope, terrace, etc.): depression, dunes Local relief (concave, convex, none): concave Slope (%): 1-2%

Subregion (LRR or MLRA): Atlantic and Gulf Coast Lowland (LRR T) Lat: 27.852774 Long: -97.046752 Datum: NAD 83

Soil Map Unit Name: Beaches, Psamments NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes X No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- _____ Water Marks (B1)
- _____ Sediment Deposits (B2)
- _____ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- _____ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- _____ Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- _____ Marl Deposits (B15) (**LRR U**)
- _____ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- X Presence of Reduced Iron (C4)
- _____ Recent Iron Reduction in Tilled Soils (C6)
- _____ Thin Muck Surface (C7)
- _____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- _____ Surface Soil Cracks (B6)
- _____ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- _____ Moss Trim Lines (B16)
- _____ Dry-Season Water Table (C2)
- _____ Crayfish Burrows (C8)
- _____ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- _____ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- _____ Sphagnum moss (D8) (**LRR T, U**)

Field Observations:

Surface Water Present?	Yes X	No _____	Depth (inches): 0-18
Water Table Present?	Yes X	No _____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 0

Wetland Hydrology Present? Yes X No _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-WET-03

Tree Stratum (Plot size: 30-ft Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover0		
50% of total cover: 0	20% of total cover:		
Herb Stratum (Plot size: 5-ft Radius)			
1. *Eleocharis sp.*	10	N	OBL
2. *Schenoplectus pungens*	15	Y	OBL
3. *Hydrocotyle bonariensis*	5	N	FACW
4. *Borrichia frutescens*	30	Y	OBL
5. *Spartina patens*	15	Y	FACW
6. *Juncus roemerianus*	15	Y	OBL
7. *Andropogon glomeratus*	5	N	FACW
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47	20% of total cover: 19		
Woody Vine Stratum (Plot size: 30-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant2 Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Test is ≤3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five 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.

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 X No ____

Remarks:

SOIL Sampling Point: DP-WET-03

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	5Y 5/1C	90	Gley 1 5/5y 1	10	C	M/PL	sand	
6-16	10YR 6/4	90	Gley 1 5/5y 1	10	C	M/PL	sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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)
- ____ Coastal Prairie Redox (A16) (**MLRA 150A**)
- ____ Sandy Mucky Mineral (S1) (**RLRR O, S**)
- X Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) (**LRR P, S, T, U**)
- ____ Polyvalue Below Surface (S8) (**LRR S, T, U**)
- ____ Thin Dark Surface (S9) (**LRR S, T, U**)
- ____ Loamy Mucky Mineral (F1) (**LRR O**)
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) (**LRR U**)
- ____ Depleted Ochric (F11) (**MLRA 151**)
- ____ Iron-Manganese Masses (F12) (**LRR O, P, T**)
- ____ Umbric Surface (F13) (**LRR P, T, U**)
- ____ Delta Ochric (F17) (**MLRA, 151**)
- ____ Reduced Vertic (F18) (**MLRA 150A, 150B**)
- ____ Piedmont Floodplain Soils (F19) (**MLRA 149A**)
- ____ Anomalous Bright Loamy Soils (F20) (**MLRA 149A, 153C, 153D**)

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM City/County: Aransas Sampling Date: 2/7/2019

Applicant/Owner: P66 State: TX Sampling Point: UDP-WET-03

Investigator(s): J. Wiedeman / C. Gerken Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 1-2%

Subregion (LRR or MLRA): Atlantic and Gulf Coast Lowland (LRR T) Lat: 27.852813064 Long: -97.046547233 Datum: NAD 83

Soil Map Unit Name: Beaches, Psamments NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes _____ No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _____ Surface Water (A1)
- _____ High Water Table (A2)
- _____ Saturation (A3)
- _____ Water Marks (B1)
- _____ Sediment Deposits (B2)
- _____ Drift Deposits (B3)
- _____ Algal Mat or Crust (B4)
- _____ Iron Deposits (B5)
- _____ Inundation Visible on Aerial Imagery (B7)
- _____ Water-Stained Leaves (B9)
- _____ Aquatic Fauna (B13)
- _____ Marl Deposits (B15) (**LRR U**)
- _____ Hydrogen Sulfide Odor (C1)
- _____ Oxidized Rhizospheres along Living Roots (C3)
- _____ Presence of Reduced Iron (C4)
- _____ Recent Iron Reduction in Tilled Soils (C6)
- _____ Thin Muck Surface (C7)
- _____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- _____ Surface Soil Cracks (B6)
- _____ Sparsely Vegetated Concave Surface (B8)
- _____ Drainage Patterns (B10)
- _____ Moss Trim Lines (B16)
- _____ Dry-Season Water Table (C2)
- _____ Crayfish Burrows (C8)
- _____ Saturation Visible on Aerial Imagery (C9)
- _____ Geomorphic Position (D2)
- _____ Shallow Aquitard (D3)
- _____ FAC-Neutral Test (D5)
- _____ Sphagnum moss (D8) (**LRR T, U**)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: UDP-WET-03

Tree Stratum (Plot size: 30-ft Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5-ft Radius)			
1. *Andropogon virginicus*	30	Y	FAC
2. *Andropogon glomeratus*	40	Y	FACW
3. *Shenoplectus robustus*	2	N	OBL
4. *Spartina patens*	25	Y	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	98 = Total Cover		
50% of total cover: 49	20% of total cover: 19		
Woody Vine Stratum (Plot size: 30-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant2 Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

_X_ 2 - Dominance Test is >50%

____ 3 - Prevalence Test is ≤3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five 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.

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 X No ____

Remarks: Facultative salt prairie grasses

SOIL Sampling Point: UDP-WET-03

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	90	10YR 5/6	10	C	M	sandy clay loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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)
- ____ Coastal Prairie Redox (A16) (**MLRA 150A**)
- ____ Sandy Mucky Mineral (S1) (**RLRR O, S**)
- ____ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) (**LRR P, S, T, U**)
- ____ Polyvalue Below Surface (S8) (**LRR S, T, U**)
- ____ Thin Dark Surface (S9) (**LRR S, T, U**)
- ____ Loamy Mucky Mineral (F1) (**LRR O**)
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) (**LRR U**)
- ____ Depleted Ochric (F11) (**MLRA 151**)
- ____ Iron-Manganese Masses (F12) (**LRR O, P, T**)
- ____ Umbric Surface (F13) (**LRR P, T, U**)
- ____ Delta Ochric (F17) (**MLRA, 151**)
- ____ Reduced Vertic (F18) (**MLRA 150A, 150B**)
- ____ Piedmont Floodplain Soils (F19) (**MLRA 149A**)
- ____ Anomalous Bright Loamy Soils (F20) (**MLRA 149A, 153C, 153D**)

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM City/County: Aransas Sampling Date: 2/7/2019

Applicant/Owner: P66 State: TX Sampling Point: DP-WET-04

Investigator(s): J. Wiedeman / C. Gerken Section, Township, Range: NA

Landform (hillslope, terrace, etc.): depression, dunes Local relief (concave, convex, none): concave Slope (%): 1-2%

Subregion (LRR or MLRA): Atlantic and Gulf Coast Lowland (LRR T) Lat: 27.853263 Long: -97.049533 Datum: NAD 83

Soil Map Unit Name: Beaches, Psamments NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- ____ Marl Deposits (B15) (**LRR U**)
- X Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- X Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) (**LRR T, U**)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-WET-04

Tree Stratum (Plot size: 30-ft Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5-ft Radius)			
1. *Avicennia germinans*	10	N	OBL
2. *Borrichia frutescens*	15	N	OBL
3. *Batis maritima*	20	Y	OBL
4. *Monanthochloe littoralis*	50	Y	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47	20% of total cover: 19		
Woody Vine Stratum (Plot size: 30-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant2 Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Test is ≤3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five 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.

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 X No ____

Remarks:

SOIL Sampling Point: DP-WET-04

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	5Y 5/1C	90	Gley 1 5/5y 1	10	C	M/PL	sand	
6-16	Gley 1 5/5y 1	90	10YR 5/6	10	C	M/PL	sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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)
- ____ Coastal Prairie Redox (A16) (**MLRA 150A**)
- ____ Sandy Mucky Mineral (S1) (**RLRR O, S**)
- X Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) (**LRR P, S, T, U**)
- ____ Polyvalue Below Surface (S8) (**LRR S, T, U**)
- ____ Thin Dark Surface (S9) (**LRR S, T, U**)
- ____ Loamy Mucky Mineral (F1) (**LRR O**)
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) (**LRR U**)
- ____ Depleted Ochric (F11) (**MLRA 151**)
- ____ Iron-Manganese Masses (F12) (**LRR O, P, T**)
- ____ Umbric Surface (F13) (**LRR P, T, U**)
- ____ Delta Ochric (F17) (**MLRA, 151**)
- ____ Reduced Vertic (F18) (**MLRA 150A, 150B**)
- ____ Piedmont Floodplain Soils (F19) (**MLRA 149A**)
- ____ Anomalous Bright Loamy Soils (F20) (**MLRA 149A, 153C, 153D**)

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM City/County: Aransas Sampling Date: 2/7/2019

Applicant/Owner: P66 State: TX Sampling Point: UDP-WET-04

Investigator(s): J. Wiedeman / C. Gerken Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 1-2%

Subregion (LRR or MLRA): Atlantic and Gulf Coast Lowland (LRR T) Lat: 27.853953 Long: -97.046783 Datum: NAD 83

Soil Map Unit Name: Beaches, Psamments NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _____ Surface Water (A1)
- _____ High Water Table (A2)
- _____ Saturation (A3)
- _____ Water Marks (B1)
- _____ Sediment Deposits (B2)
- _____ Drift Deposits (B3)
- _____ Algal Mat or Crust (B4)
- _____ Iron Deposits (B5)
- _____ Inundation Visible on Aerial Imagery (B7)
- _____ Water-Stained Leaves (B9)
- _____ Aquatic Fauna (B13)
- _____ Marl Deposits (B15) (**LRR U**)
- _____ Hydrogen Sulfide Odor (C1)
- _____ Oxidized Rhizospheres along Living Roots (C3)
- _____ Presence of Reduced Iron (C4)
- _____ Recent Iron Reduction in Tilled Soils (C6)
- _____ Thin Muck Surface (C7)
- _____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- _____ Surface Soil Cracks (B6)
- _____ Sparsely Vegetated Concave Surface (B8)
- _____ Drainage Patterns (B10)
- _____ Moss Trim Lines (B16)
- _____ Dry-Season Water Table (C2)
- _____ Crayfish Burrows (C8)
- _____ Saturation Visible on Aerial Imagery (C9)
- _____ Geomorphic Position (D2)
- _____ Shallow Aquitard (D3)
- _____ FAC-Neutral Test (D5)
- _____ Sphagnum moss (D8) (**LRR T, U**)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Ridge area with sand mounds

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: UDP-WET-04

Tree Stratum (Plot size: 30-ft Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5-ft Radius)			
1. *Andropogon virginicus*	30	Y	FAC
2. *Andropogon glomeratus*	60	Y	FACW
3. *Shenoplectus robustus*	10	N	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant2 Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

_X_ 2 - Dominance Test is >50%

____ 3 - Prevalence Test is ≤3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five 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.

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 X No ____

Remarks: Facultative salt prairie grasses

SOIL Sampling Point: UDP-WET-04

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 5/3	99	10YR 5/6	1	C	M	sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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)
- ____ Coastal Prairie Redox (A16) (**MLRA 150A**)
- ____ Sandy Mucky Mineral (S1) (**RLRR O, S**)
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) (**LRR P, S, T, U**)
- ____ Polyvalue Below Surface (S8) (**LRR S, T, U**)
- ____ Thin Dark Surface (S9) (**LRR S, T, U**)
- ____ Loamy Mucky Mineral (F1) (**LRR O**)
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) (**LRR U**)
- ____ Depleted Ochric (F11) (**MLRA 151**)
- ____ Iron-Manganese Masses (F12) (**LRR O, P, T**)
- ____ Umbric Surface (F13) (**LRR P, T, U**)
- ____ Delta Ochric (F17) (**MLRA, 151**)
- ____ Reduced Vertic (F18) (**MLRA 150A, 150B**)
- ____ Piedmont Floodplain Soils (F19) (**MLRA 149A**)
- ____ Anomalous Bright Loamy Soils (F20) (**MLRA 149A, 153C, 153D**)

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes ____ No __X__

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM City/County: Aransas Sampling Date: 2/7/2019

Applicant/Owner: P66 State: TX Sampling Point: DP-05

Investigator(s): J. Wiedeman / C. Gerken Section, Township, Range: NA

Landform (hillslope, terrace, etc.): depression, dunes Local relief (concave, convex, none): concave Slope (%): 1-2%

Subregion (LRR or MLRA): Atlantic and Gulf Coast Lowland (LRR T) Lat: 27.852672 Long: -97.049952 Datum: NAD 83

Soil Map Unit Name: Beaches, Psamments NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No	**Is the Sampled Area within a Wetland?** Yes X No
Hydric Soil Present?	Yes X No	
Wetland Hydrology Present?	Yes X No	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- ____ Marl Deposits (B15) (**LRR U**)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres along Living Roots (C3)
- X Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) (**LRR T, U**)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): 0
Water Table Present?	Yes X	No ____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes X No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-05

Tree Stratum (Plot size: 30-ft Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5-ft Radius)			
1. *Andropogon glomeratus*	30	Y	FACW
2. *Schenoplectus pungens*	30	Y	OBL
3. *Spartina patens*	30	Y	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		
Woody Vine Stratum (Plot size: 30-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant2 Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Test is ≤3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five 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.

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 X No ____

Remarks:

SOIL Sampling Point: DP-05

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 5/2	90	10YR 5/6	10	C	M/PL	sand	
							s	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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)
- ____ Coastal Prairie Redox (A16) (**MLRA 150A**)
- ____ Sandy Mucky Mineral (S1) (**RLRR O, S**)
- X Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) (**LRR P, S, T, U**)
- ____ Polyvalue Below Surface (S8) (**LRR S, T, U**)
- ____ Thin Dark Surface (S9) (**LRR S, T, U**)
- ____ Loamy Mucky Mineral (F1) (**LRR O**)
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) (**LRR U**)
- ____ Depleted Ochric (F11) (**MLRA 151**)
- ____ Iron-Manganese Masses (F12) (**LRR O, P, T**)
- ____ Umbric Surface (F13) (**LRR P, T, U**)
- ____ Delta Ochric (F17) (**MLRA, 151**)
- ____ Reduced Vertic (F18) (**MLRA 150A, 150B**)
- ____ Piedmont Floodplain Soils (F19) (**MLRA 149A**)
- ____ Anomalous Bright Loamy Soils (F20) (**MLRA 149A, 153C, 153D**)

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM City/County: Aransas Sampling Date: 2/7/2019

Applicant/Owner: P66 State: TX Sampling Point: DP-06

Investigator(s): J. Wiedeman / C. Gerken Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 1-2%

Subregion (LRR or MLRA): Atlantic and Gulf Coast Lowland (LRR T) Lat: 27.852688 Long: -97.049278 Datum: NAD 83

Soil Map Unit Name: Beaches, Psamments NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No _____	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes X No _____	
Wetland Hydrology Present?	Yes _____ No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- _____ Surface Water (A1)
- _____ High Water Table (A2)
- _____ Saturation (A3)
- _____ Water Marks (B1)
- _____ Sediment Deposits (B2)
- _____ Drift Deposits (B3)
- _____ Algal Mat or Crust (B4)
- _____ Iron Deposits (B5)
- _____ Inundation Visible on Aerial Imagery (B7)
- _____ Water-Stained Leaves (B9)
- _____ Aquatic Fauna (B13)
- _____ Marl Deposits (B15) (**LRR U**)
- _____ Hydrogen Sulfide Odor (C1)
- _____ Oxidized Rhizospheres along Living Roots (C3)
- _____ Presence of Reduced Iron (C4)
- _____ Recent Iron Reduction in Tilled Soils (C6)
- _____ Thin Muck Surface (C7)
- _____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- _____ Surface Soil Cracks (B6)
- _____ Sparsely Vegetated Concave Surface (B8)
- _____ Drainage Patterns (B10)
- _____ Moss Trim Lines (B16)
- _____ Dry-Season Water Table (C2)
- _____ Crayfish Burrows (C8)
- _____ Saturation Visible on Aerial Imagery (C9)
- _____ Geomorphic Position (D2)
- _____ Shallow Aquitard (D3)
- _____ FAC-Neutral Test (D5)
- _____ Sphagnum moss (D8) (**LRR T, U**)

Field Observations:

Surface Water Present? Yes _____ No X Depth (inches): _____

Water Table Present? Yes _____ No X Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No X Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-06

Tree Stratum (Plot size: 30-ft Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5-ft Radius)			
1. *Andropogon virginicus*	30	Y	FAC
2. *Andropogon glomeratus*	40	Y	FACW
3. *Shenoplectus robustus*	2	N	OBL
4. *Spartina patens*	25	Y	FACW
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	98 = Total Cover		
50% of total cover: 49	20% of total cover: 19		
Woody Vine Stratum (Plot size: 30-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant2 Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

__X__ 2 - Dominance Test is >50%

____ 3 - Prevalence Test is ≤3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five 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.

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 X No ____

Remarks: Facultative salt prairie grasses

SOIL Sampling Point: DP-06

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	10YR 4/2	90	10YR 5/6	10	C	M	sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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)
- ____ Coastal Prairie Redox (A16) (**MLRA 150A**)
- ____ Sandy Mucky Mineral (S1) (**RLRR O, S**)
- ____ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) (**LRR P, S, T, U**)
- ____ Polyvalue Below Surface (S8) (**LRR S, T, U**)
- ____ Thin Dark Surface (S9) (**LRR S, T, U**)
- ____ Loamy Mucky Mineral (F1) (**LRR O**)
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) (**LRR U**)
- ____ Depleted Ochric (F11) (**MLRA 151**)
- ____ Iron-Manganese Masses (F12) (**LRR O, P, T**)
- ____ Umbric Surface (F13) (**LRR P, T, U**)
- ____ Delta Ochric (F17) (**MLRA, 151**)
- ____ Reduced Vertic (F18) (**MLRA 150A, 150B**)
- ____ Piedmont Floodplain Soils (F19) (**MLRA 149A**)
- ____ Anomalous Bright Loamy Soils (F20) (**MLRA 149A, 153C, 153D**)

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM City/County: Aransas Sampling Date: 2/7/2019

Applicant/Owner: P66 State: TX Sampling Point: DP-07

Investigator(s): J. Wiedeman / C. Gerken Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 0-1%

Subregion (LRR or MLRA): Atlantic and Gulf Coast Lowland (LRR T) Lat: 27.852629 Long: -97.051583 Datum: NAD 83

Soil Map Unit Name: Beaches, Psamments NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No Hydric Soil Present? Yes X No Wetland Hydrology Present? Yes X No	**Is the Sampled Area within a Wetland?** Yes X No
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- Water Marks (B1)
- Sediment Deposits (B2)
- Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- Marl Deposits (B15) (**LRR U**)
- X Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- X Presence of Reduced Iron (C4)
- Recent Iron Reduction in Tilled Soils (C6)
- Thin Muck Surface (C7)
- Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- Surface Soil Cracks (B6)
- Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- Moss Trim Lines (B16)
- Dry-Season Water Table (C2)
- Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- Sphagnum moss (D8) (**LRR T, U**)

Field Observations:

Surface Water Present? Yes No X Depth (inches):

Water Table Present? Yes X No Depth (inches): 4

Saturation Present? (includes capillary fringe) Yes X No Depth (inches): 0

Wetland Hydrology Present? Yes X No

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-07

Tree Stratum (Plot size: 30-ft Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5-ft Radius)			
1. *Distichlis spicata*	15	N	OBL
2. *Borrichia frutescens*	10	N	OBL
3. *Junucs roemerianus*	20	Y	OBL
4. *Monanthochloe littoralis*	10	N	OBL
5. *Spartina patens*	40	Y	FACW
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47	20% of total cover: 19		
Woody Vine Stratum (Plot size: 30-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant2 Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Test is ≤3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five 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.

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 X No ____

Remarks:

SOIL Sampling Point: DP-07

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-16	5 Y 5/1	90	10YR 5/6	10	C	M/PL	sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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)
- ____ Coastal Prairie Redox (A16) (**MLRA 150A**)
- ____ Sandy Mucky Mineral (S1) (**RLRR O, S**)
- ____ Sandy Gleyed Matrix (S4)
- X Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) (**LRR P, S, T, U**)
- ____ Polyvalue Below Surface (S8) (**LRR S, T, U**)
- ____ Thin Dark Surface (S9) (**LRR S, T, U**)
- ____ Loamy Mucky Mineral (F1) (**LRR O**)
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) (**LRR U**)
- ____ Depleted Ochric (F11) (**MLRA 151**)
- ____ Iron-Manganese Masses (F12) (**LRR O, P, T**)
- ____ Umbric Surface (F13) (**LRR P, T, U**)
- ____ Delta Ochric (F17) (**MLRA, 151**)
- ____ Reduced Vertic (F18) (**MLRA 150A, 150B**)
- ____ Piedmont Floodplain Soils (F19) (**MLRA 149A**)
- ____ Anomalous Bright Loamy Soils (F20) (**MLRA 149A, 153C, 153D**)

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Bluewater SPM City/County: Aransas Sampling Date: 2/7/2019

Applicant/Owner: P66 State: TX Sampling Point: DP-08

Investigator(s): J. Wiedeman / C. Gerken Section, Township, Range: NA

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 0-1%

Subregion (LRR or MLRA): Atlantic and Gulf Coast Lowland (LRR T) Lat: 27.853202 Long: -97.052216 Datum: NAD 83

Soil Map Unit Name: Beaches, Psamments NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X No ____	
Wetland Hydrology Present?	Yes X No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ____ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- X Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- X Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- X Aquatic Fauna (B13)
- ____ Marl Deposits (B15) (**LRR U**)
- X Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres along Living Roots (C3)
- X Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- X Saturation Visible on Aerial Imagery (C9)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ____ Sphagnum moss (D8) (**LRR T, U**)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 4
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes X No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP-08

Tree Stratum (Plot size: 30-ft Radius)	Absolute % Cover	Dominant Species?	Indicator Status
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Shrub Stratum (Plot size: 15-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot size: 5-ft Radius)			
1. *Distichlis spicata*	35	Y	OBL
2. *Borrichia frutescens*	10	N	OBL
3. *Batis maritima*	15	N	OBL
4. *Monanthochloe littoralis*	40	Y	OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot size: 30-ft Radius)			
1. *None Observed*			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

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

Total Number of Dominant2 Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species	x 3 =
FACU species	x 4 =
UPL species	x 5 =
Column Totals: (A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

____ 3 - Prevalence Test is ≤3.0[1]

____ Problematic Hydrophytic Vegetation[1] (Explain)

[1] Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Five 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.

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 X No ____

Remarks:

SOIL Sampling Point: DP-08

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	5Y 5/1C	90	Gley 1 5/5y 1	10	C	M/PL	sand	
6-16	Gley 1 5/5y 1	90	10YR 5/6	10	C	M/PL	sand	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ____ 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)
- ____ Coastal Prairie Redox (A16) (**MLRA 150A**)
- ____ Sandy Mucky Mineral (S1) (**RLRR O, S**)
- X Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Dark Surface (S7) (**LRR P, S, T, U**)
- ____ Polyvalue Below Surface (S8) (**LRR S, T, U**)
- ____ Thin Dark Surface (S9) (**LRR S, T, U**)
- ____ Loamy Mucky Mineral (F1) (**LRR O**)
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ Marl (F10) (**LRR U**)
- ____ Depleted Ochric (F11) (**MLRA 151**)
- ____ Iron-Manganese Masses (F12) (**LRR O, P, T**)
- ____ Umbric Surface (F13) (**LRR P, T, U**)
- ____ Delta Ochric (F17) (**MLRA, 151**)
- ____ Reduced Vertic (F18) (**MLRA 150A, 150B**)
- ____ Piedmont Floodplain Soils (F19) (**MLRA 149A**)
- ____ Anomalous Bright Loamy Soils (F20) (**MLRA 149A, 153C, 153D**)

Indicators for Problematic Hydric Soils[3]:

- ____ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

APPENDIX C

Photographic Log

Wetland Vegetation Communities –Emergent Wetlands

Figure 1. Palustrine emergent wetland WA011 as viewed from DPA026_PEM; view facing north.

Figure 2. Estuarine intertidal emergent wetland WA012 as viewed from DPA029_PEM; view facing east.

Figure 3. Palustrine emergent wetland WA019 as viewed from DPA044_PEM; view facing east.

Figure 4. Estuarine intertidal emergent wetland WB007 as viewed from DPB018_PEM; view facing west.

Figure 5. Palustrine emergent wetland WA018 as viewed from DPA049_PEM; view facing north.

Figure 6. Estuarine intertidal emergent wetland WB013 as viewed from DPB040_PEM; view facing north.

Wetland Vegetation Communities –Scrub-Shrub Wetlands

Figure 7. Palustrine scrub-shrub wetland WB003 as viewed from DPB007_PSS; view facing west.

Figure 8. Estuarine intertidal scrub-shrub wetland WB005 as viewed from DPB011_PSS; view facing east.

Figure 9. Estuarine intertidal scrub-shrub wetland WB006 as viewed from DPB017_PSS; view facing south.

Figure 10. Estuarine intertidal scrub-shrub wetland WB013 as viewed from DPB039_PSS; view facing south.

Figure 11. Estuarine intertidal scrub-shrub wetland WA006 as viewed from DPB017_PSS; view facing north.

Non-wetland Vegetation Communities – Herbaceous Uplands

Figure 12. An herbaceous upland as viewed from DPA027_U; view facing north.

Figure 13. An herbaceous upland as viewed from DPA028_U; view facing south.

Figure 14. An herbaceous upland as viewed from DPA038_U; view facing east.

Figure 15. An herbaceous upland as viewed from DPB061_U; view facing south.

Figure 16. An herbaceous upland as viewed from DPB060_U; view facing west.

Figure 17. An herbaceous upland as viewed from DPB012_U; view facing east.

Non-wetland Vegetation Communities – Scrub-Shrub Uplands

Figure 18. A scrub-shrub upland as viewed from DPA033_U; view facing east.

Figure 19. A scrub-shrub upland as viewed from DPB006_U; view facing west.

Waterbodies – Stream Waterbodies

Figure 20. Ephemeral ditch SA005; view facing west.

Figure 21. Intermittent stream SA006; view facing west.

Figure 22. Perennial stream SA007; view facing north.

Waterbodies – Ponded Waterbodies and Coastal Inlets

Figure 23. Coastal inlet waterbody PB001; view facing west.

Figure 24. Ponded waterbody PB003; view facing west.

Figure 25. Ponded waterbody PA001; view facing north.

APPENDIX D

NRCS Soil Map Unit Descriptions

ARANSAS COUNTY

Beaches (By). The Beaches is a miscellaneous area.

Psamments (Ps). The Psamments component makes up 80 percent of the map unit. Slopes are 0 to 3 percent. This component is on foredunes on barrier islands. The parent material consists of sandy eolian deposits. The natural drainage class is well drained. Water movement in the most restrictive layer is very high. Available water to a depth of 60 inches (or restricted depth) is low. This soil is rarely flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. This soil does not meet hydric criteria.

NUECES COUNTY

Ijam clay loam (Ma). The Ijam component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on flats on dredge spoil banks on lagoons. The parent material consists of sandy dredge spoils and/or loamy dredge spoils. The natural drainage class is poorly drained. Available water to a depth of 60 inches is moderate. This soil is rarely flooded. It is not ponded. A seasonal zone of water saturation is at 18 inches during January, February, March, April, May, September, October, November, December. This soil meets hydric criteria.

Mustang fine sand (Mu). The Mustang component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on shallow depressions on barrier flats on barrier islands. The parent material consists of sandy eolian and storm washover sediments of Holocene age. The natural drainage class is poorly drained. Available water to a depth of 60 inches is very low. This soil is occasionally flooded. It is not ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September, October, November, December. The soil meets hydric criteria.

Tidal flats (Ta). The Tidal flats is a miscellaneous area.

Water (W). The Water is a miscellaneous area.

SAN PATRICIO COUNTY

Dianola soils (Ds). The Dianola component makes up 85 percent of the map unit. Slopes are 0 to 1 percent. This component is on strand plains on low coastal plains. The parent material consists of loamy fluviomarine deposits of Quaternary age. The natural drainage class is poorly drained. Available water to a depth of 60 inches (or restricted depth) is very low. This soil is frequently flooded. It is not ponded. A seasonal zone of water saturation is at 30 inches during January, February, March, April, May, June, July, August, September, October, November, December. This soil meets hydric criteria.

Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded (Mu). The Mustang component makes up 85 percent of the map unit. This component is on shallow depressions on barrier flats on barrier islands. The parent material consists of storm washover and sandy eolian deposits derived from igneous, metamorphic and sedimentary rock. The natural drainage class is poorly drained. Available water to a depth of 60 inches (or restricted depth) is low. This soil is occasionally flooded. It is frequently ponded. A seasonal zone of water saturation is at 3 inches during January, February, March, April, May, June, July, August, September, October, November, December. This soil meets hydric criteria.

Water (W). The Water is a miscellaneous area.