wood.

Appendix G

Wetlands Delineation Report

wood.

WETLAND DELINEATION REPORT
PORT OF CORPUS CHRISTI

Port of Corpus Christi
Harbor Island
Port Aransas
Nueces County, Texas
Project # 6703180051 Port of Corpus Christi Authority

Prepared for:

Port of Corpus Christi
222 Power St, Corpus Christi, Texas

June 10, 2019

WETLAND DELINEATION REPORT
PORT OF CORPUS CHRISTI

Port of Corpus Christi
Harbor Island
Port Aransas
Nueces County, Texas
Project # 6703180051 Port of Corpus Christi Authority

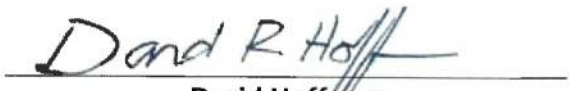
Prepared for:

Port of Corpus Christi
222 Power St, Corpus Christi, Texas

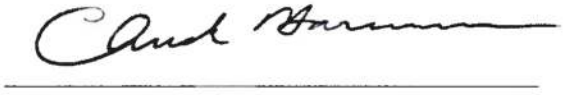
Prepared by:

Wood Environment & Infrastructure Solutions, Inc
17325 Park Row
Houston, Texas 77084
T: 832-809-8000

6/10/2019



David Hoffman
Vice President, Houston Branch



Charles R. Harman
Project Manager

Copyright and non-disclosure notice

Third-party disclaimer

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Appendices

List of Acronyms and Abbreviations

CCSC	Corpus Christi Ship Channel
CFR	Code of Federal Regulation
CWA	Clean Water Act
DBH	Diameter at Breast Height
FAC	Facultative wetland plant
FACU	Facultative upland plant
FACW	Facultative wetland plant
FEMA	Federal Emergency Management Agency
GIS	Geographic Information Systems
NA	Not Applicable
NI	No Indicator
NL	Not Listed
NRCS	Natural Resource Conservation Service
NWI	National Wetlands Inventory
OBL	Obligate wetland plant
PCCA	Port of Corpus Christi Authority
Site	Harbor Island Project Site
TCEQ	Texas Commission on Environmental Quality
UPL	Upland plant
USACE	United States Army Corps of Engineers
U.S.C.	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
Wood	Wood Environment & Infrastructure Solutions

1.0 Introduction

This Wetland Delineation Report has been prepared on behalf of the Port of Corpus Christi Authority (PCCA) by Wood Environment & Infrastructure Solutions, Inc. (Wood) for Harbor Island (the Site). The Site is located in Port Aransas, Nueces County, Texas (**Figure 1**). This wetland delineation was performed in support of the future application to the Texas Commission on Environmental Quality (TCEQ) and United States Corps of Engineers (USACE) for Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act for the construction of a crude oil export terminal and associated marine berths that will service Very Large Crude Carriers (VLCCs). This report presents a description of the Site, the methods used to perform the delineation, the findings of a desktop delineation, the findings of a field delineation, and supporting documentation in the form of maps, photographs, notes, and wetland delineation datasheets.

1.1 Site Description

The Project Area is located at the convergence of Aransas Pass, the Corpus Christi Ship Channel, and Lydia Ann Channel between Nueces and Aransas Counties, Texas. It is a 254-acre parcel identified by Nueces County as Property ID 2411473 and 241506 owned by PCCA. However, this delineation was conducted on a smaller portion of 127 acres of the parcel. The project is located on the portion of Harbor Island that is east of TX-361 and is bordered to the east by the Tributary of the Aransas Pass. The coordinates for the approximate center of the Site are presented in the table below.

Table 1-1: Coordinates for the Approximate Center of the Site Port of Corpus Christi, Corpus Christi,Nueces County, Texas

Latitude (North)	Longitude (West)
27.846162	-97.065775

Note: All coordinates are in presented in North American 1983 Datum.

2.0 Methods

The CWA of 1977 (33 United States Code [U.S.C.] 1344) defines wetlands as "those areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas" (33 Code of Federal Regulations [CFR] 230.3).

From this regulatory definition, a three-parameter approach (i.e., vegetation, soils, and hydrology) was developed by the USACE in order to identify and delineate wetland for purposes of Section 404 of the CWA and Section 10 of the Rivers and Harbors Act (33 U.S.C. 403). This approach dictates that areas meeting the defined criteria of hydrophytic vegetation, hydric soils, and wetland hydrology will be designated as jurisdictional wetlands. The three-parameter approach is described in the *Corps of Engineers Wetlands Delineation Manual*, often referred to as either the "Corps Manual" or the "87 Manual" (Environmental Laboratory, 1987). After the issuance of the Corps Manual, a series of Regional Supplements have been developed or are in various stages of development that are specific to regional wetland characteristics across the United States. These Regional Supplements are designed for use with, not as a replacement for, the current version of the Corps Manual.

For vegetation, the criteria mean that more than 50% of the composition of the dominant species from all strata must be categorized as hydrophytic or adapted to living in saturated areas. That is, the plant species must be classified as obligate, facultative wetland or facultative as defined in the *National List of Plant Species That Occur in Wetlands*, published by the United States Fish & Wildlife Service (USFWS). Soils are considered hydric if they meet the criteria defined by the National Technical Committee for Hydric Soils in *Hydric Soils of the United States* (United States Department of Agriculture [USDA], 1987). Wetland hydrology must be present to affect either permanent or periodic saturation of the soil.

The first criterion, hydrophytic vegetation, is present when a predominance of the plant species present in a community is either obligate, facultative wetland, or facultative. The USFWS has compiled data on the habitat characteristics of plants of the United States based on frequency of observation in various regions. This list categorizes plant species by their frequency of occurrence as follows:

Obligate Wetland Plants (OBL): Those species that occur almost exclusively in wetlands (>99 percent of the time)

Facultative Wetland Plants (FACW): Those species that usually occur in wetlands (67 - 99 percent of the time)

Facultative Plants (FAC): Those species equally likely to occur in wetland or non-wetland (34 - 66 percent of the time)

Facultative Upland Plants (FACU): Those species that usually occur in non-wetlands (67 - 99 percent of the time)

Upland Plants (UPL): Those species that occur almost exclusively in uplands (>99 percent of the time).

Species for which insufficient information is available for classification are listed in the USFWS list with a designation of No Indicator (NI) for regional status. A designation of Not Listed (NL) was assigned by Wood if a species was not present on the USFWS list. According to the "1989 Manual", plants not listed are presumed to be upland species. A designation of Not Applicable (NA) was assigned by Wood for vegetation that could not be identified to species level.

To accurately describe the vegetation at each sampling point, data on each horizontal strata or layer was collected. Vegetative strata for which dominants were determined included:

Tree (≥ 5.0 inches diameter at breast height [dbh] and 20 feet or taller)

Sapling (0.4 to < 5.0 inches dbh and 20 feet or taller)

Shrub (usually 3 to 20 feet tall, including multi-stemmed, bushy shrubs and small trees and saplings)

Woody vine (determined by morphological characteristics and botanical classification)

Herb (herbaceous plants, including graminoids, forbs, ferns, fern allies, herbaceous vines, and tree seedlings)

The dominant species was determined by making visual estimates of tree, sapling, shrub, woody vine, and herb strata and by assigning one of the following cover classes, with the midpoints of each cover class in parentheses:

T < 1 percent (0)
1 = 1-5 percent (3.0)
2 = 6-15 percent (10.5)
3 = 16-25 percent (20.5)
4 = 26-50 percent (38.0)
5 = 51-75 percent (63.0)
6 = 76-95 percent (85.5)
7 = 96-100 percent (98.0)

The midpoints of each species were averaged at each sample point and ranked. The dominance threshold number was calculated and used to determine dominant species. Those species composing 50 percent of the total cover were considered to be the dominants, as were additional species representing 20 percent or more of the total cover class midpoint values for each stratum. The affinity of the dominant species to wetlands was used in determining the wetland status of each sample point.

A two-step process was used to determine the presence of hydric soils at each site. A preliminary desk-top assessment was first conducted that involved reviewing USDA Natural Resource Conservation Service (NRCS) soil maps and Geographic Information Systems (GIS) data. This desk-top assessment provided a coarse-scale examination of the potential locations for hydric soils on each site.

The second step of this process was the field examination of site soils. Soil borings were used to examine the nature of the soil below the "A" horizon. The hydric nature of soils can generally be determined by color changes resulting from the chemical reduction of soil components, which occurs because of extended periods of saturation or inundation. The Munsell Soil Color Charts were developed to assign values to these colors to simplify classification. The Munsell system uses three components in assigning color to a soil: hue, value, and chroma:

Hue: Related to one of the main spectral colors: red, yellow, green, blue, or purple, or various mixtures of these principal colors;

Value: Refers to the degree of lightness;

Chroma: Indicates the color strength or purity.

In mineral soils, two or more colors may exist within the same soil. The dominant color is referred to as the matrix while the less dominant is referred to as the mottle. Mottling tends to occur under fluctuating conditions of saturation. Mineral soils are considered hydric if the matrix chroma is 2 or less when mottling is present, or when the matrix chroma is 1 or less if no mottling is present. Other soil characteristics, such as high organic content, gleying, histic epipedons, sulfidic materials, aquic or peraquic moisture regime, root pore linings, and iron or manganese concretions, are also indicators of a hydric soil condition.

The last parameter, wetland hydrology, is present when inundation or saturation of the soil within 6 inches to 18 inches of the surface occurs for a minimum of 7 consecutive days during the growing season. In periods during which inundation or saturation is not present, field indicators are typically used to determine the presence of wetland hydrology. Wetland hydrology field indicators are grouped into two categories: primary indicators and secondary indicators. Primary indicators are typically considered to be robust indicators of wetland hydrology and include, but are not limited to, inundation and saturation (as noted above), water marks, drift lines, sediment deposits, and drainage patterns in the ground layer. Secondary indicators are relatively less robust and include, but are not limited to, the presence of a high frequency of oxidized root channels (i.e., pore linings) near the soil surface, water-stained leaves, local soil survey hydrology data, and various environmental or ecological indicators.

A desktop survey was conducted to develop a preliminary understanding of the possible extent of the wetlands in advance of the field delineation. The desktop survey included a review of available information, including USGS 7.5-foot quadrangle topographic maps, USFWS National Wetlands Inventory (NWI) maps, USDA NRCS soil maps and data, and aerial photographs of the Site.

In the field, wetland delineation involves determining the boundary line between the areas in which the three-wetland parameters are present and where they are not. Using perceived changes in elevation and vegetation as a guide, representative observation points were selected along the apparent border of any potential wetland areas. Soil borings were made to determine the presence of hydric soil and wetland hydrology at each of the observation points. Observations were made on both the suspect wetland and upland side. The boundary between the wetland

and upland was then identified and marked in the field with survey flagging. The field delineation was performed by a Wood wetland scientist on March 19, 2019.

3.0 Results

This section presents the results of the desk-top delineation and the field delineation. **Appendix A** presents photographs of the Site, **Appendix B** presents the wetland delineation datasheets, **Appendix C** presents a list of plant species observed during the delineation effort, and **Appendix D** presents the resume of personnel involved with the field delineation.

Delineation was conducted using routine on-site determination method as described in 1987 Corps Manual. To capture the data points within the project a Trimble Pro XRS GPS unit was carried. This system is real-time GIS grade system with an accuracy of 1 foot horizontally and 1.5 feet vertically.

3.1 USGS Topographic Map

A review of the USGS topographic map for the Site area indicates the nearest watercourses are the Aransas Channel to the east and The Corpus Christi Ship Channel (CCSC) to the south (**Figure 2**). The Site is approximately one mile from the Gulf of Meixco.

3.2 USFWS NWI Map

A review of the USFWS NWI map for the Site indicates the presence of a freshwater emergent wetland habitat on the Site (**Figure 3**). The NWI map shows that the site is bordered to the south and east by estuarine and marine deepwater habitat. The freshwater emergent wetland habitat is located on the northwestern edge of the project boundary.

3.3 USDA Soils

A review of the USDA NRCS soils map for the Site area indicates that Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded occur on the Site (**Figure 4**):

Mustang fine sand (0 to 1 percent slopes) is the dominant soil mapping unit on this Site. Mustang fine sand is found in low areas alogn the coast and are marshy most of the time. This soil hosts abundant amount of native plants and is used as range for cattle. It is classified as poorly drained, negligible runoff class, and is considered hydric.

3.4 FEMA Floodplain Map

A review of the Federal Emergency Management Agency (FEMA) flooplain map for the Site area indicates that part of the site is in a Zone AE and Zone X flood zone (**Figure 5**). Zone AE is considered a 100-year flood location, while Zone X can be either a 500-year flood or outside a 500-year flood area.

3.5 Field Wetland Delineation

The results of the field wetland delineation reveal that as of March 2019, the Site was composed of developed and distrubed lands and Persistent Emergent Wetlands (PEM).

Table 1-2: Coordinates for the Wetlands
Port of Corpus Christi, Corpus Christi,Nueces County, Texas

	Northing	Easting
Wetland 1	27.84694444	-97.06666
Wetland 2	27.84724100	-97.06696

Each of these communities is described below, and the wetland boundaries and upland points are depicted on **Figure 6**.

3.5.1 PEM

Two PEMs were located on the site. One PEM was in a small drainage depression that is 0.0184 acres and a larger habitat that is .312 acres. Below is the description of each sample point of the two PEMs (**Figure 6)**.

The first habitat (0.0184 acres) is located near a previously used parking area approximately 520 feet from CCSC (sampling point W18). This community was dominated by torpedograss (*Panicum repens*, FACW) and cone-cup spikerush (*Eleocharis tuberculosa*, OBL) in the herb stratum. No species were observed in the tree, sapling/shrub, or woody vine stratum. This community was considered to be a hydrophytic vegetation community due to the dominant species.

The representative soil boring collected from the community along the wetland revealed a 0 to 16-inch of 10YR 4/1 loamy sand with 1% distinct 7.5YR 5/8 redoximporhic features. This soil is considered to be hydric.

Field indicators of wetland hydrology observed in this community included surface water (maximum depth of 2 inches) and soil saturation in the upper 12 inches. A water table could not be determined due to the amount of saturation. Due to the dominance of hydrophitic vegetation, presence of hydric soil and wetland hydrology, this location is considered a wetland.

The second habitat (.312 Acres) is located in the central portion of the Site and is approximately 715 feet from the CCSC (sampling point 5). This community was dominated by torpedograss (*Panicum repens*, FACW). No species were observed in the tree, sapling/shrub, or woody vine stratum. This community was considered to be a hydrophytic vegetation community due to the dominant species.

The representative soil boring collected from the community along the wetland revealed a 0 to 13-inch 10YR 4/2 sandy clay surface strata, 3 to 12-inch 10YR 6/2 sand, and 12 to 16-inch 2.5YR 6/1 loamy sand. This soil is considered to be hydric.

Field indicators of wetland hydrology observed in this community included soil saturation in the upper 9 inches. Due to the dominance of hydrophitic vegetation, presence of hydric soil, and wetland hydrology, this location is considered a wetland.

3.5.2 Developed and Disturbed Land

The developed and disturbed land community includes the paved areas (i.e. parking lot and roads). These areas are not vegetated and were not identified as wetland. This property has deconstruction activities being preformed at the time of this wetland delentiation. This involved scrap metal and large machines (backhoes and other vehicles assocated with construction services) being moved and stored on site.

4.0 Summary and Conclusion

A wetland delineation was conducted Harbor Island, Port Arthur, Nueces County, Texas. This wetland delineation was performed in support of the future application to the TCEQ and USACE for Section 404 of the CWA and Section 10 of the Rivers and Harbors Act for the construction of a crude oil export terminal servicing marine berths for VLCCs. The delineation identified the outer boundaries of wetlands as defined by the USACE for the entire property.

The Project Area is located at the convergence of Aransas Pass, the Corpus Christi Ship Channel, and Lydia Ann Channel between Nueces and Aransas Counties, Texas. It is a 254-acre parcel identified by Nueces County as Property ID 2411473 and 241506 owned by PCCA. The project location is located on the portion of Harbor Island that is east of TX-361 and is bordered to the east by the Tributary of the Aransas Pass The coordinates for the approximate center of the Site are presented in the table below.

The results of a preliminary desktop delineation indicated that the site has one freshwater emergent wetland habitat and is bordered by estuarine and marine deep-water habitats. The identified two PEM wetland communities on the Site (**Figure 6**).

The smaller PEM (0.0184 acres) is located near a previously used parking area, approximately 520 feet from CCSC. The second, larger PEM The second habitat (.312 Acres) is located in the central portion of the Site and is approximately 715 feet from the CCSC. The results of this wetland delineation have not yet been reviewed by the any government authority, and as such, should be considered preliminary until confirmation of the boundaries and resource classification (i.e. ordinary, intermediate, and exceptional) has been received.

FIGURES

JUL 1 0 2019

Port Of Corpus Christi Authority of Nueces County	★ Site Location	**Project Location**	DATE: JUNE 2019
			SCALE: 1 " = 5 miles
wood.			PROJECT NO.: 6703180051
			FIGURE: 1

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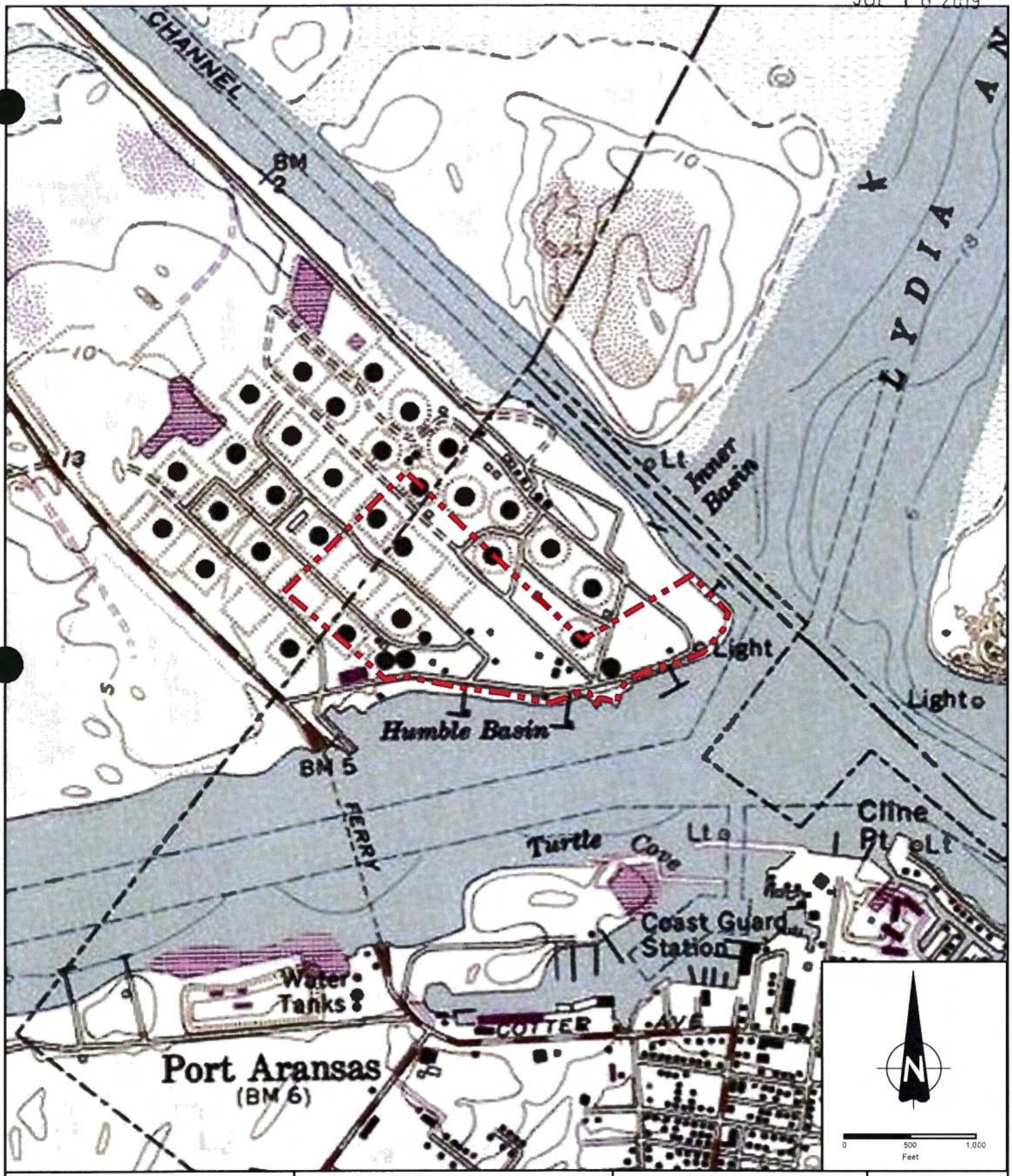

Port Of Corpus Christi Authority of Nueces County	Project Boundary	Topographic Map	DATE: JUNE 2019
			SCALE: 1 " =1,000 '
wood.		Service Layer Credits: Copyright:© 2013 National Geographic Society, i-cubed	PROJECT NO.: 6703180030
			FIGURE: 2

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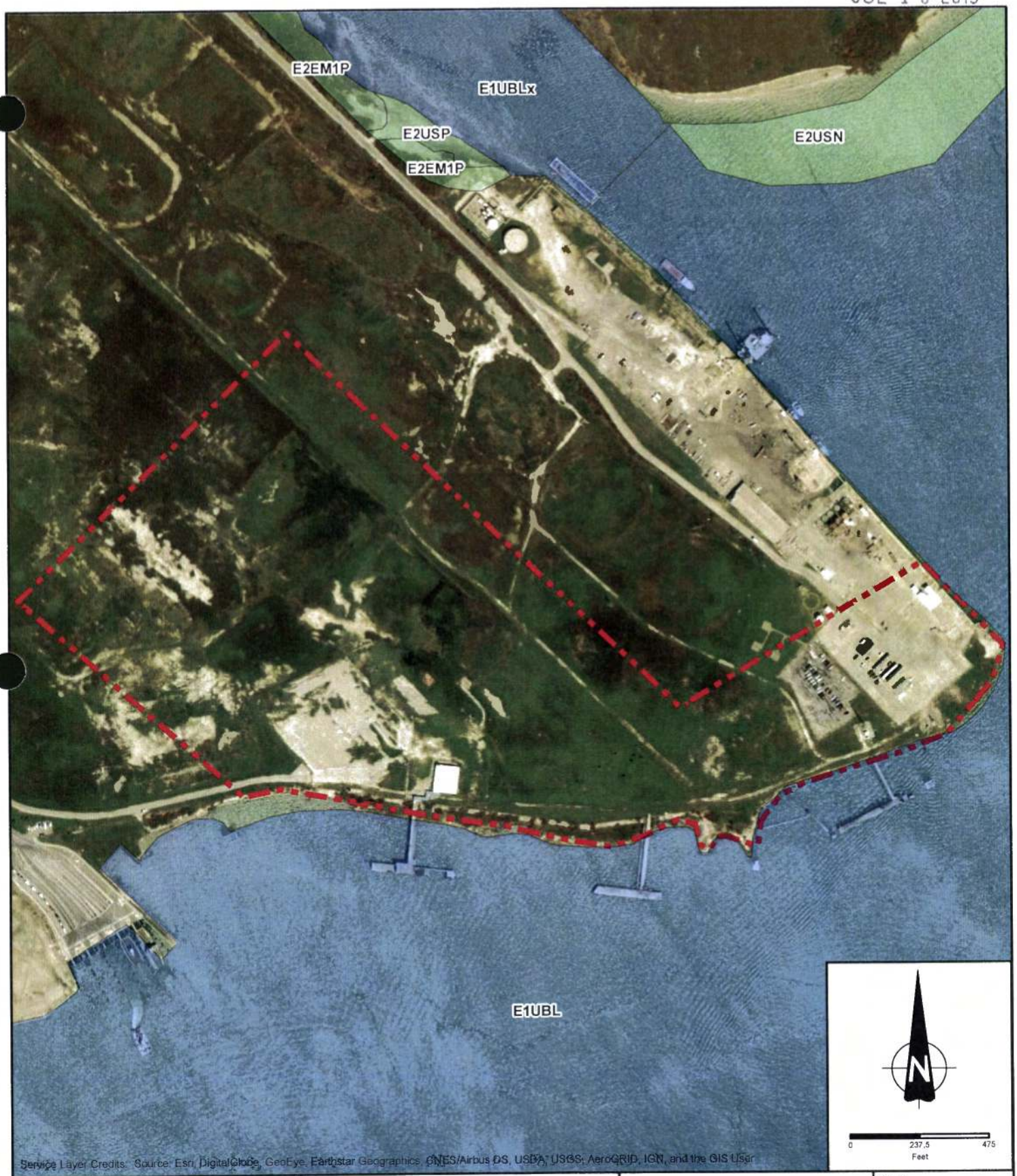

Port Of Corpus Christi Authority of Nueces County	Project Boundary	U.S. Fish & Wildlife Service National Wetlands Inventory Map	DATE: JUNE 2019
	Estuarine & Marine Deepwater		SCALE: 1" =450'
wood.	Estuarine & Marine Wetland		PROJECT NO.: 6703180030
			FIGURE: 3

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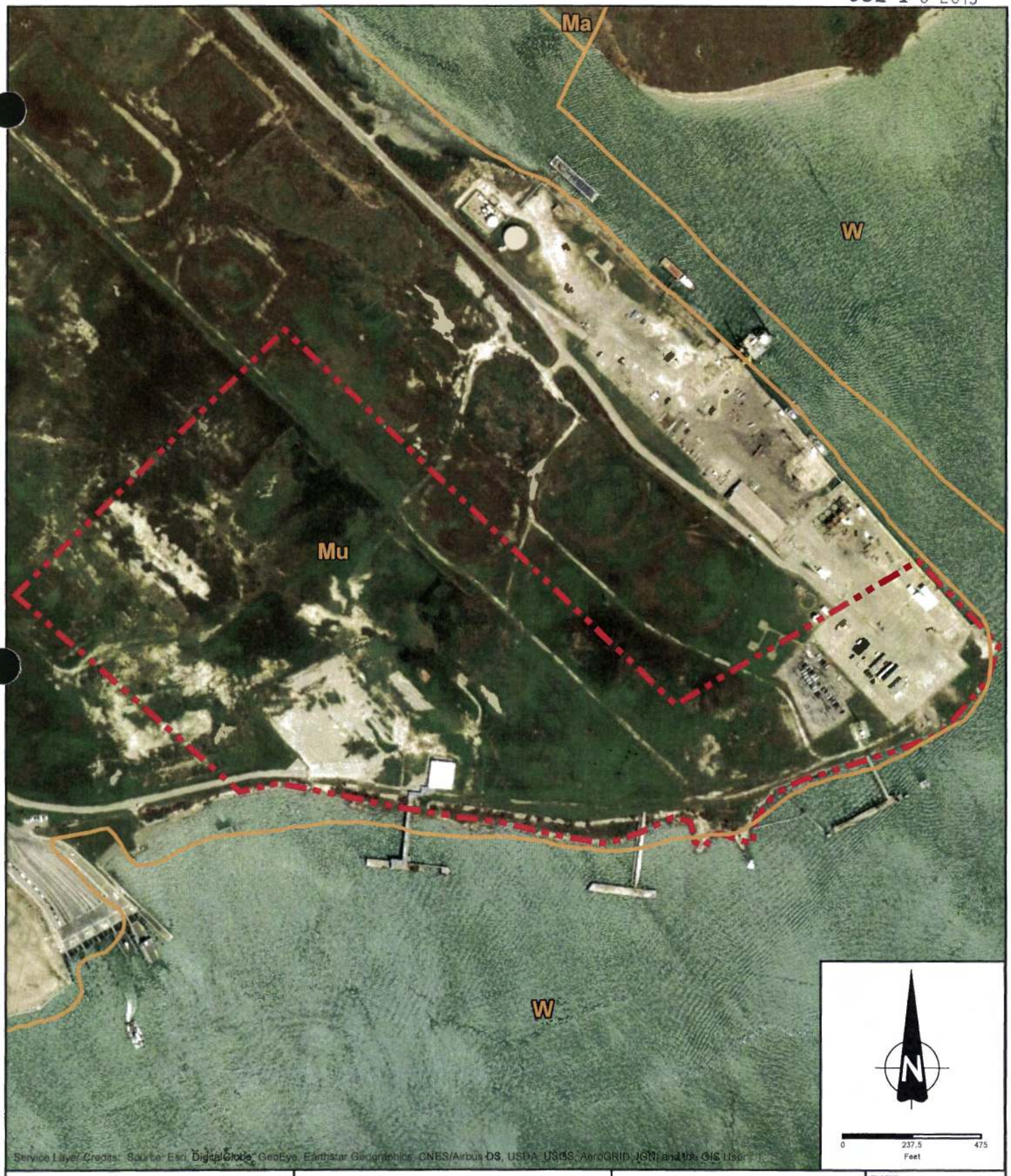

Port Of Corpus Christi Authority of Nueces County

wood.

Project Boundary

Mu - Mustang fine sand, 0 to 1 percent slopes, occasionally flooded, frequently ponded

W - Water

U.S. Department of Agriculture Soil Survey Map

DATE: JUNE 2019

SCALE: 1 " =450 '

PROJECT NO.: 6703180030

FIGURE: 4

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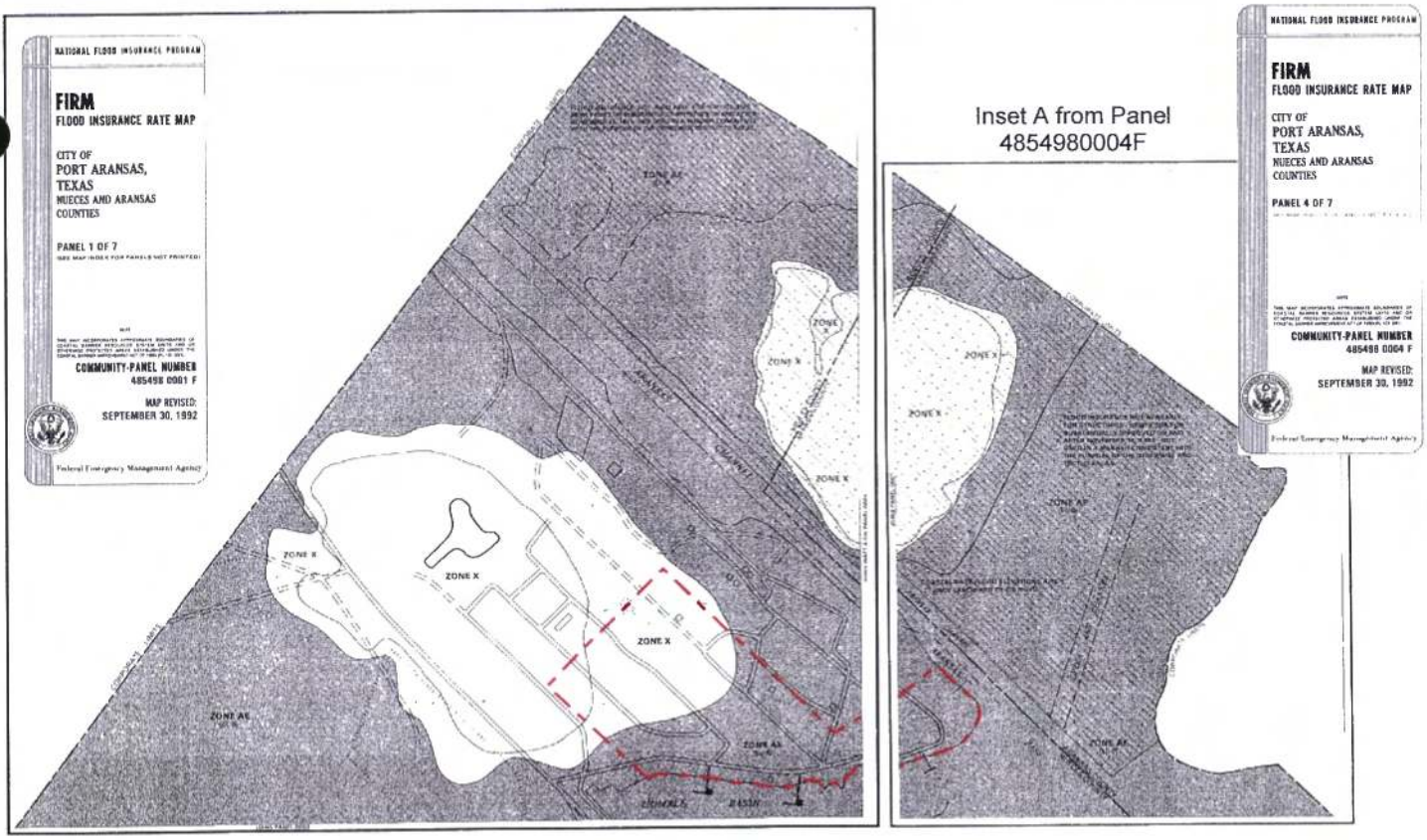
JUL 1 0 2019



LEGEND

SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD

- ZONE A — No base flood elevations determined.
- ZONE AE — Base flood elevations determined.
- ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); base flood elevations determined.
- ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE A99 — To be protected from 100-year flood by Federal flood protection system under construction; no base flood elevations determined.
- ZONE V — Coastal flood with velocity hazard (wave action); no base flood elevations determined.
- ZONE VE — Coastal flood with velocity hazard (wave action); base flood elevations determined.

FLOODWAY AREAS IN ZONE AE

OTHER FLOOD AREAS

- ZONE X — Areas of 500-year flood; areas of 100-year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood.

OTHER AREAS

- ZONE X — Areas determined to be outside 500-year floodplain.
- ZONE D — Areas in which flood hazards are undetermined.

UNDEVELOPED COASTAL BARRIERS†

Identified 1983 | Identified 1990 | Otherwise Protected Areas

†Coastal barrier areas are normally located within or adjacent to special flood hazard areas.

- Floodplain Boundary
- Floodway Boundary
- Zone D Boundary
- Boundary Dividing Special Flood Hazard Zones, and Boundary Dividing Areas of Different Coastal Base Flood Elevations Within Special Flood Hazard Zones.
- 513 — Base Flood Elevation Line; Elevation in Feet*
- (D) — (D) — Cross Section Line
- (EL 987) — Base Flood Elevation in Feet Where Uniform Within Zone*
- RM 7$_X$ — Elevation Reference Mark
- •M1.5 — River Mile

*Referenced to the National Geodetic Vertical Datum of 1929

NOTES

This map is for use in administering the National Flood Insurance Program; it does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size, or all planimetric features outside Special Flood Hazard Areas. The community map repository should be consulted for possible updated flood hazard information prior to use of this map for property purchase or construction purposes.

Coastal base flood elevations apply only landward of 0.0 NGVD, and include the effects of wave action; these elevations may also differ significantly from those developed by the National Weather Service for hurricane evacuation planning.

Areas of special flood hazard (100-year flood) include Zones A, AE, AH, AO, A99, V, and VE.

Certain areas not in Special Flood Hazard Areas may be protected by flood control structures.

Boundaries of the floodways were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the Federal Emergency Management Agency.

Floodway widths in some areas may be too narrow to show to scale. Floodway widths are provided in the Flood Insurance Study Report.

For adjoining map panels see separately printed Map Index.

MAP REPOSITORY

Port Aransas City Hall, 710 West Avenue Way, Port Aransas, Texas 78373 (Maps available for reference only, not for distribution).

INITIAL IDENTIFICATION:

JUNE 26, 1971

FLOOD HAZARD BOUNDARY MAP REVISIONS:

NONE

FLOOD INSURANCE RATE MAP EFFECTIVE:

JUNE 26, 1971

FLOOD INSURANCE RATE MAP REVISIONS:

September 8, 1972 - to change base flood elevations.

November 23, 1973 - to add zones.

July 1, 1974 - to change zone designations.

August 13, 1976 - to reflect curvilinear flood boundary, to change community boundary, and to add special flood hazard areas

December 8, 1976 - to change base flood elevations.

March 18, 1985 - to increase and decrease base flood elevations, to increase zone designations, to revise special flood hazard areas, and to revise corporate limits.

September 30, 1992 - to update corporate limits, to increase base flood elevations, to change special flood hazard areas, to update map format, to reflect updated topographic information and to add otherwise protected areas.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at (800) 638-6620.

Port Of Corpus Christi Authority of Nueces County

Project Boundary

FEMA Floodplain Map

DATE: JUNE 2019

SCALE: Not to Scale

PROJECT NO.: 6703180030

FIGURE: 5

wood.

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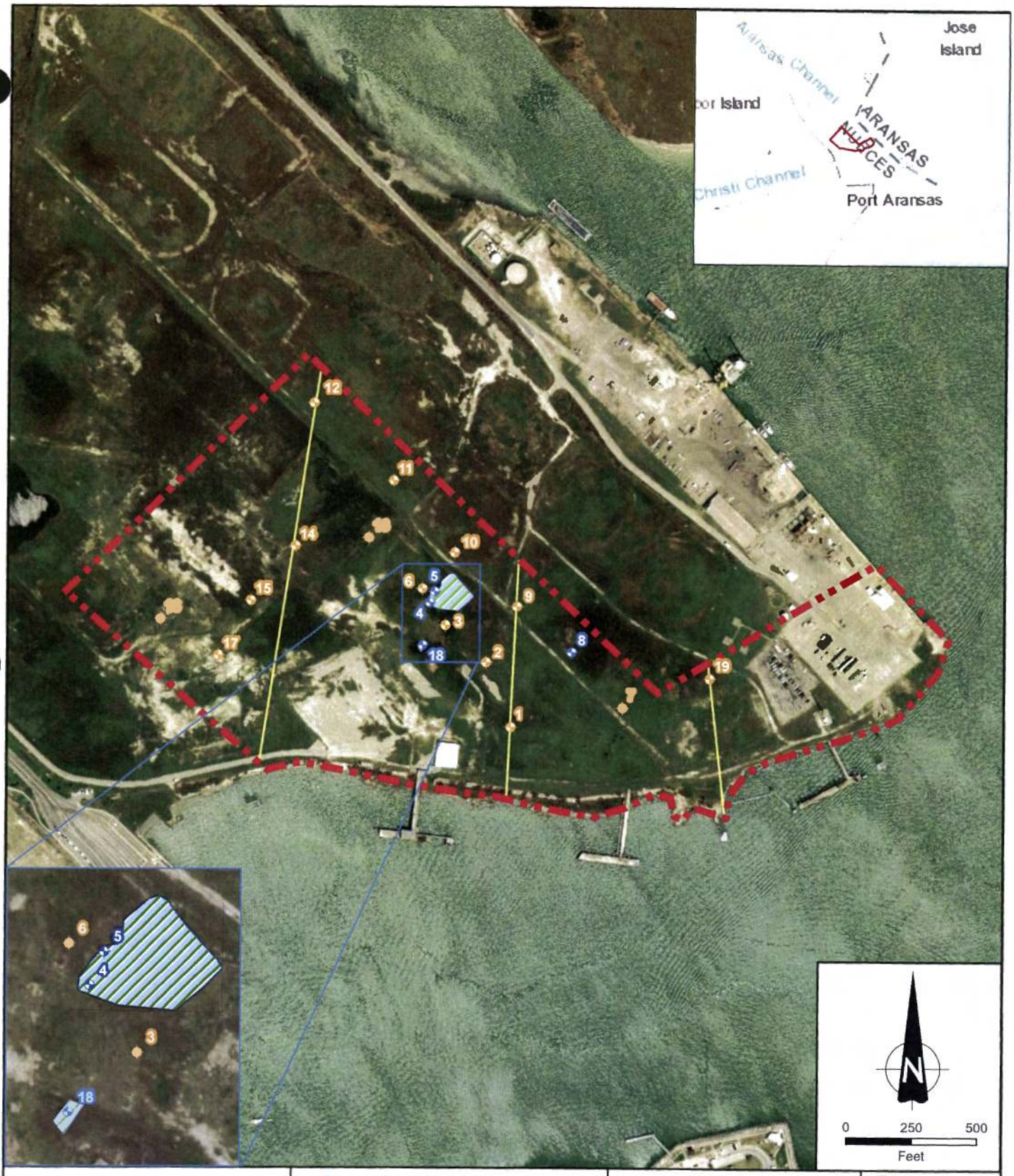

Port Of Corpus Christi Authority of Nueces County	Upland Point Wetland Point Project Boundary Transects Wetlands	**Wetland Boundary Map**	DATE: JUNE 2019 SCALE: 1 " = 500 ' PROJECT NO.: 6703180030 FIGURE: 6
wood.		Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI,	

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Z:\01 Projects\EIS Projects\PCCC\03 Finals\05 WLT, ANDF\Fig 6 Wetland Boundary Map.mxd - stacy.brooks - 6/20/2019 - 11:14:34 AM

APPENDIX A

Photographs

wood.

PHOTO 1:

Sample Point 1:
27.84579415
-97.0659235

Photograph facing northeast.

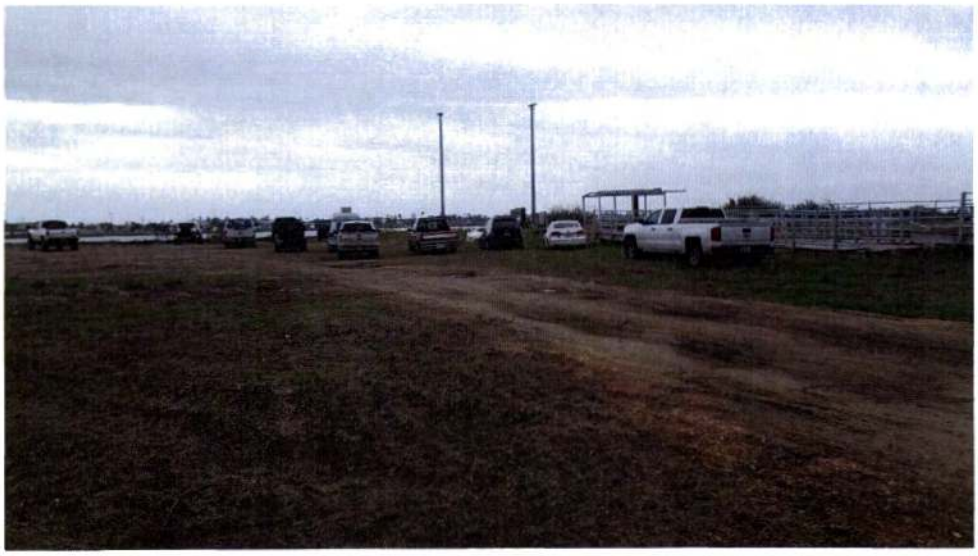

PHOTO 2:

Sample Point 1:
27.845776
-97.065925

Photograph facing west.

PHOTO 3:

Sample Point 1:
27.845776
-97.065926

Photograph facing northwest.

PHOTO 4:

Sample Point 2:
27.846435
-97.066169

Photograph facing northeast.

wood.

PHOTO 5:

Sample Point 2:
27.846451
-97.066192

Photograph facing west.

PHOTO 6:

Sample Point 2:
27.846453
-97.066195

Photograph facing north.

PHOTO 7:

Sample Point 3:
27.846886
-97.06671

Photograph facing north.

PHOTO 8:

Sample Point 3:
27.846907
-97.066721

Photograph facing west.

wood.

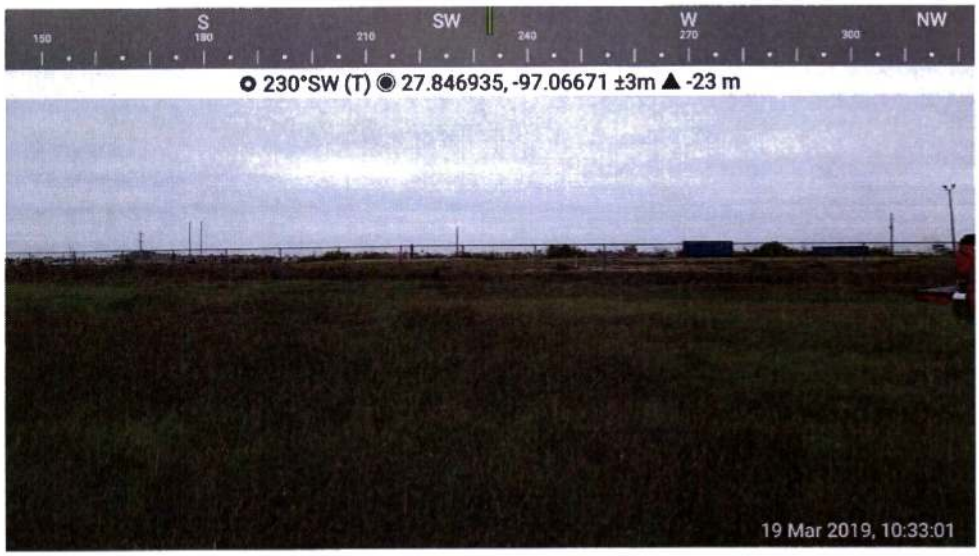

PHOTO 9:

Sample Point 3:
27.846935
-97.06671

Photograph facing southwest.

PHOTO 10:

Sample Point 3:
27.846935
-97.06671

Photograph facing southwest.

PHOTO 11:

Sample Point 4:
27.84712500
-97.066769

Photograph facing southwest.

PHOTO 12:

Sample Point 5:
27.847217
-97.066811

Photograph facing east.

wood.

PHOTO 13:

Sample Point 5:
27.847217
-97.066811

Photograph facing west.

PHOTO 14:

Sample Point 6:
27.847266
-97.066943

Photograph facing north.

PHOTO 15:

Sample Point 6:
27.847266
-97.066943

Photograph facing east.

PHOTO 16:

Sample Point 6:
27.847265
-97.066944

Photograph facing west.

wood.

PHOTO 17:

Sample Point 7:
27.846009
-97.064602

Photograph facing north.

PHOTO 18:

Sample Point 7:
27.846009
-97.064602

Photograph facing east.

PHOTO 19:

Sample Point 7:
27.846011
-97.064602

Photograph facing west.

PHOTO 20:

Sample Point 8:
27.846588
-97.065192

Photograph facing north.

wood.

PHOTO 21:

Sample Point 8:
27.846577
-97.065209

Photograph facing east.

PHOTO 22:

Sample Point 8:
27.846577
-97.065209

Photograph facing west.

PHOTO 23:

Sample Point 10:
27.847646
-97.066556

Photograph facing north.

PHOTO 24:

Sample Point 10:
27.847646
-97.066556

Photograph facing west.

wood.

PHOTO 25:

Sample Point 11:
27.84842
-97.067287

Photograph facing northwest.

PHOTO 26:

Sample Point 11:
27.84842
-97.067287

Photograph facing north.

PHOTO 27:

Sample Point 11:
27.848425
-97.067282

Photograph facing east.

PHOTO 28:

Sample Point 12:
27.849249
-97.06821

Photograph facing southeast.

wood.

PHOTO 29:

Sample Point 12:
27.849249
-97.06821

Photograph facing north.

PHOTO 30:

Sample Point 12:
27.84925
-97.068208

Photograph facing west.

PHOTO 31:

Sample Point 13:
27.847859
-97.067555

Photograph facing west.

PHOTO 32:

Sample Point 13:
27.847859
-97.067555

Photograph facing north.

wood.

PHOTO 33:

Sample Point 13:
27.847853
-97.067554

Photograph facing east.

PHOTO 34:

Sample Point 14:
27.847744
-97.068421

Photograph facing north.

PHOTO 35:

Sample Point 14:
27.847729
-97.068426

Photograph facing northwest.

PHOTO 36:

Sample Point 14:
27.847729
-97.068426

Photograph facing west.

wood.

PHOTO 37:

Sample Point 15:
27.847337
-97.069051

Photograph facing north.

PHOTO 38:

Sample Point 15:
27.847337
-97.069051

Photograph facing west.

PHOTO 39:

Sample Point 15:
27.847336
-97.069089

Photograph facing south.

PHOTO 40:

Sample Point 16:
27.847007
-97.070052

Photograph facing north.

wood.

PHOTO 41:

Sample Point 16:
27.847007
-97.070052

Photograph facing east.

PHOTO 42:

Sample Point 16:
27.847001
-97.070055

Photograph facing west.

PHOTO 43:

Sample Point 17:
27.846541
-97.069355

Photograph facing west.

PHOTO 44:

Sample Point 17:
27.846541
-97.069355

Photograph facing south.

wood.

PHOTO 45:

Sample Point 17:
27.846541
-97.069355

Photograph facing north.

PHOTO 46:

Sample Point 18:
27.846535
-97.067032

Photograph facing northwest.

PHOTO 47:

Sample Point 18:
27.846535
-97.067032

Photograph facing northeast.

PHOTO 48:

Sample Point 18:
27.846535
-97.067032

Photograph facing west.

APPENDIX B

Wetland Delineation Datasheets

JUL 10 2019

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: **Harbor Island** City/County: **Nueces County** Sampling Date: **March 19, 2019**

Applicant/Owner: **POCCA** State: **TX** Sampling Point: **1**

Investigator(s): **Ashley Bogrand, Orlando Recio** Section, Township, Range: **None**

Landform (hillslope, terrace, etc.): **Prairie** Local relief (concave, convex, none): **None** Slope (%): **0**

Subregion (LRR or MLRA): **LRR T** Lat: **27.84579415** Long: **-97.06592535** Datum: **NAD83**

Soil Map Unit Name: **Mustang Fine Sand, 0 to 1 percent** NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of the 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 ____	No **X**	**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 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): ____
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 (Four Strata) - Use scientific names of plants

Sampling Point: 1

Tree Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot Size: 30')			
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot Size: 30')			
1 *Cynodon dactylon*	65	Y	FACU
2 *Houstonia pusilla*	20	Y	FACU
3 *Coreopsis basalis*	20	Y	UPL
4 *Sorghum halepense*	15	N	FACU
5 *Medicago polymorpha*	10	N	FACU
6 *Oenothera grandis*	5	N	UPL
7 *Lepidium virginicum*	2	N	UPL
8			
9			
10			
11			
12			
	137 = Total Cover		
50% of total cover: 68.5	20% of total cover: 27.4		
Woody Vine Stratum (Plot Size: 30')			
1 *None*			
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: 0.00% (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	110	x 4 =	440
UPL species	27	x 5 =	135
Column totals	137 (A)		575 (B)

Prevalence Index = B/A = 4.20

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 Four Vegetation Strata:

Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes ___ No X

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

JUL 1 0 2019

SOIL

Sampling Point: 1

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]	Loc2	Texture	Remarks
0-9	10YR 5 / 3	98	7.5YR 5 8	2	C	PL	Loamy Sand	
9-12	10YR 4 / 1	85	7.5YR 4 / 4	15	C	PL	Sandy Loam	
12-15	10YR 4 / 1	85	5YR 4 / 6	15	C	PL	Sandy Clay	

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

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

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Suface (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: N/A

Depth (inches): N/A

Hydric soil present? Yes X No ___

Remarks:

JUL 1 0 2019

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: **Harbor Island** City/County: **Nueces County** Sampling Date: **March 19, 2019**

Applicant/Owner: **POCCA** State: **TX** Sampling Point: **2**

Investigator(s): **Ashley Bogrand, Orlando Recio** Section, Township, Range: **None**

Landform (hillslope, terrace, etc.): **Prairie** Local relief (concave, convex, none): **None** Slope (%): **0**

Subregion (LRR or MLRA): **LRR T** Lat: **27.84675000** Long: **-97.066218** Datum: **NAD83**

Soil Map Unit Name: **Mustang Fine Sand, 0 to 1 percent** NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of the 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 ____	No **X**	**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 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): ____
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 (Four Strata) - Use scientific names of plants

Sampling Point: 2

Tree Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot Size: 30')			
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot Size: 30')			
1 *Cynodon dactylon*	80	Y	FACU
2 *Coreopsis basalis*	40	Y	UPL
3 *Sonchus asper*	10	N	FACU
4 *Thymophylla tenuiloba*	5	N	UPL
5 *Vicia sativa*	5	N	FACU
6			
7			
8			
9			
10			
11			
12			
	140 = Total Cover		
50% of total cover: 70	20% of total cover: 28		
Woody Vine Stratum (Plot Size: 30')			
1 *None*			
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: 0.00% (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	45	x 5 =	225
Column totals	140 (A)		605 (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 Four Vegetation Strata:

Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes ___ No X

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

JUL 1 0 2019

SOIL

Sampling Point: 2

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
0-8	10YR 5 / 2	93	5YR 5 / 8	7	C	PL	Sandy Loam	
8-14	10YR 4 / 2	90	7.5YR 5 / 6	10	C	PL	Sandy Loam	

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

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

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- X 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: **N/A**

Depth (inches): **N/A**

Hydric soil present? Yes X No ___

Remarks:

JUL 1 0 2019

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: **Harbor Island** City/County: **Nueces County** Sampling Date: **March 19, 2019**

Applicant/Owner: **POCCA** State: **TX** Sampling Point: **3**

Investigator(s): **Ashley Bogrand, Orlando Recio** Section, Township, Range: **None**

Landform (hillslope, terrace, etc.): **Prairie** Local relief (concave, convex, none): **None** Slope (%): **0**

Subregion (LRR or MLRA): **LRR T** Lat: **27.84690100** Long: **-97.066684** Datum: **NAD83**

Soil Map Unit Name: **Mustang Fine Sand, 0 to 1 percent** NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of the 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 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): ____
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 (Four Strata) - Use scientific names of plants

Sampling Point: 3

Tree Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot Size: 30')			
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot Size: 30')			
1 *Panicum repens*	70	Y	FACW
2 *Eleocharis tuberculosa*	40	Y	OBL
3 *Nothoscordum bivalve*	10	N	FACU
4			
5			
6			
7			
8			
9			
10			
11			
12			
	120 = Total Cover		
50% of total cover: 60	20% of total cover: 24		
Woody Vine Stratum (Plot Size: 30')			
1 *None*			
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: 100.00% (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species	40	x 1 =	40
FACW species	70	x 2 =	140
FAC species	0	x 3 =	0
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column totals	120 (A)		220 (B)

Prevalence Index = B/A = 1.83

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 Four Vegetation Strata:

Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes X No ___

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

JUL 1 0 2019

SOIL

Sampling Point: 3

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]	Loc2	Texture	Remarks
0-4	10YR 3 / 2	100					Sandy Clay Loam	
4-9	2.5YR 7 / 1	95	5YR 5 / 8	5	C	PL	Sandy Loam	
9-12	10YR 3 / 1	95	7.5YR 4 / 6	5	C	PL	Loamy Sand	
12-16	10YR 6 / 2	98	10YR 7 / 8	2	C	PL	Loamy Sand	

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

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

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Suface (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: N/A

Depth (inches): N/A

Hydric soil present? Yes X No ___

Remarks:

JUL 1 0 2019

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: **Harbor Island** City/County: **Nueces County** Sampling Date: **March 19, 2019**

Applicant/Owner: **POCCA** State: **TX** Sampling Point: **4**

Investigator(s): **Ashley Bogrand, Orlando Recio** Section, Township, Range: **None**

Landform (hillslope, terrace, etc.): **Prairie** Local relief (concave, convex, none): **None** Slope (%): **0**

Subregion (LRR or MLRA): **LRR T** Lat: **27.84712500** Long: **-97.066869** Datum: **NAD83**

Soil Map Unit Name: **Mustang Fine Sand, 0 to 1 percent** NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of the 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 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): ____
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 (Four Strata) - Use scientific names of plants

Sampling Point: 4

Tree Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot Size: 30')			
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot Size: 30')			
1 *Panicum repens*	60	Y	FACW
2 *Eleocharis tuberculosa*	35	Y	OBL
3 *Schoenoplectus americanus*	7	N	OBL
4 *Vicia sativa*	2	N	FACU
5			
6			
7			
8			
9			
10			
11			
12			
	104 = Total Cover		
50% of total cover: 52	20% of total cover: 20.8		
Woody Vine Stratum (Plot Size: 30')			
1 *None*			
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: 100.00% (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species	42	x 1 =	42
FACW species	60	x 2 =	120
FAC species	0	x 3 =	0
FACU species	2	x 4 =	8
UPL species	0	x 5 =	0
Column totals	104 (A)		170 (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 Four Vegetation Strata:

Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes X No ___

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

JUL 1 0 2019

SOIL

Sampling Point: 4

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]	Loc2	Texture	Remarks
0-1	10YR 4 / 2	100					Loamy Sand	
1-9	10YR 5 / 2	95	7.5YR 4 / 6	5	C	PL	Loamy Sand	
9-11	10YR 4 / 2	100					Loamy Sand	Shells and Debris
11-16	10YR 5 / 1	95	7.5YR 4 / 6	5	C	PL	Loamy Sand	

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

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

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- X 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: N/A

Depth (inches): N/A

Hydric soil present? Yes X No ___

Remarks:

JUL 1 0 2019

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: **Harbor Island** City/County: **Nueces County** Sampling Date: **March 19, 2019**

Applicant/Owner: **POCCA** State: **TX** Sampling Point: **5**

Investigator(s): **Ashley Bogrand, Orlando Recio** Section, Township, Range: **None**

Landform (hillslope, terrace, etc.): **Prairie** Local relief (concave, convex, none): **Concave** Slope (%): **0-1**

Subregion (LRR or MLRA): **LRR T** Lat: **27.84724100** Long: **-97.066814** Datum: **NAD83**

Soil Map Unit Name: **Mustang Fine Sand, 0 to 1 percent** NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of the 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)
- ___ 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)
- ___ 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 **X**	No ____	Depth (inches): **9**

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

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

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: 5

Tree Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot Size: 30')			
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot Size: 30')			
1 *Panicum repens*	99	Y	FACW
2 *Eleocharis tuberculosa*	10	N	OBL
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
	109 = Total Cover		
50% of total cover: 54.5	20% of total cover: 21.8		
Woody Vine Stratum (Plot Size: 30')			
1 *None*			
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: 100.00% (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species	10	x 1 =	10
FACW species	99	x 2 =	198
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	109 (A)		208 (B)

Prevalence Index = B/A = 1.91

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 Four Vegetation Strata:

Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes X No ___

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

JUL 1 0 2019

SOIL

Sampling Point: 5

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]	Loc2	Texture	Remarks
0-3	10YR 4 / 2	100					Sandy Clay	
3-12	10YR 6 / 2	100					Sand	
12-16	2.5YR 6 / 1	100					Loamy Sand	

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

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

- __ Histisol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Suface (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: N/A

Depth (inches): N/A

Hydric soil present? Yes X No ____

Remarks:

JUL 1 0 2019

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: **Harbor Island** City/County: **Nueces County** Sampling Date: **March 19, 2019**

Applicant/Owner: **POCCA** State: **TX** Sampling Point: **6**

Investigator(s): **Ashley Bogrand, Orlando Recio** Section, Township, Range: **None**

Landform (hillslope, terrace, etc.): **Prairie** Local relief (concave, convex, none): **Concave** Slope (%): **0-1**

Subregion (LRR or MLRA): **LRR T** Lat: **27.84727300** Long: **-97.066953** Datum: **NAD83**

Soil Map Unit Name: **Mustang Fine Sand, 0 to 1 percent** NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of the 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 ____	No **X**	**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 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): ____
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 (Four Strata) - Use scientific names of plants

Sampling Point: 6

Tree Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot Size: 30')			
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot Size: 30')			
1 *Schizachyrium scoparium*	90	Y	FACU
2 *Vicia sativa*	10	N	FACU
3 *Sisyrinchium langloisii*	2	N	UPL
4			
5			
6			
7			
8			
9			
10			
11			
12			
	102 = Total Cover		
50% of total cover: 51	20% of total cover: 20.4		
Woody Vine Stratum (Plot Size: 30')			
1 *None*			
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: 0.00% (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	100	x 4 =	400
UPL species	2	x 5 =	10
Column totals	102 (A)		410 (B)

Prevalence Index = B/A = 4.02

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 Four Vegetation Strata:

Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes ___ No X

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

JUL 1 0 2019

SOIL

Sampling Point: 6

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]	Loc2	Texture	Remarks
0-2	10YR 5 / 2	100					Loamy Sand	
2-10	10YR 7 / 3	97	10YR 6 / 8	3	C	PL	Loamy Sand	
10-15	10YR 6 / 2	98	10YR 5 / 6	2	C	PL	Sandy Loam	

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

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

- __ Histisol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Suface (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: N/A

Depth (inches): N/A

Hydric soil present? Yes X No ____

Remarks:

JUL 1 0 2019

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: **Harbor Island** City/County: **Nueces County** Sampling Date: **March 19, 2019**

Applicant/Owner: **POCCA** State: **TX** Sampling Point: **7**

Investigator(s): **Ashley Bogrand, Orlando Recio** Section, Township, Range: **None**

Landform (hillslope, terrace, etc.): **Prairie** Local relief (concave, convex, none): **Concave** Slope (%): **0-1**

Subregion (LRR or MLRA): **LRR T** Lat: **27.84599500** Long: **-97.064603** Datum: **NAD83**

Soil Map Unit Name: **Mustang Fine Sand, 0 to 1 percent** NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of the 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 ____	No **X**	**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 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): ____
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 (Four Strata) - Use scientific names of plants

Sampling Point: 7

Tree Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot Size: 15')			
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot Size: 5')			
1 *Anagallis arvensis*	70	Y	FACU
2 *Arundo donax*	20	Y	FAC
3 *Vicia sativa*	4	N	FACU
4			
5			
6			
7			
8			
9			
10			
11			
12			
	94 = Total Cover		
50% of total cover: 47	20% of total cover: 18.8		
Woody Vine Stratum (Plot Size: 30')			
1 *None*			
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: 50.00% (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	20	x 3 =	60
FACU species	74	x 4 =	296
UPL species	0	x 5 =	0
Column totals	94 (A)		356 (B)

Prevalence Index = B/A = 3.79

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 Four Vegetation Strata:

Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes ___ No X

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

JUL 1 0 2019

SOIL

Sampling Point: 7

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]	Loc2	Texture	Remarks
0-2	10YR 5 / 2	100					Loamy Sand	
2-10	10YR 7 / 3	97	10YR 6 / 8	3	C	PL	Loamy Sand	
10-15	10YR 6 / 2	98	10YR 5 / 6	2	C	PL	Sandy Loam	
	/							

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

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

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Suface (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: N/A

Depth (inches): N/A

Hydric soil present? Yes X No ___

Remarks:

JUL 1 0 2019

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: **Harbor Island** City/County: **Nueces County** Sampling Date: **March 19, 2019**

Applicant/Owner: **POCCA** State: **TX** Sampling Point: **8**

Investigator(s): **Ashley Bogrand, Orlando Recio** Section, Township, Range: **None**

Landform (hillslope, terrace, etc.): **Prairie** Local relief (concave, convex, none): **Concave** Slope (%): **0-1**

Subregion (LRR or MLRA): **LRR T** Lat: **27.84657400** Long: **-97.065198** Datum: **NAD83**

Soil Map Unit Name: **Mustang Fine Sand, 0 to 1 percent** NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of the 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 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): ____
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 (Four Strata) - Use scientific names of plants

Sampling Point: 8

Tree Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0	= Total Cover	
50% of total cover: 0		20% of total cover: 0	
Sapliing/Shrub Stratum (Plot Size: 15')			
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0	= Total Cover	
50% of total cover: 0		20% of total cover: 0	
Herb Stratum (Plot Size: 5')			
1 *Panicum repens*	80	Y	FACW
2 *Eleocharis tuberculosa*	25	Y	OBL
3 *Vicia sativa*	4	N	FACU
4			
5			
6			
7			
8			
9			
10			
11			
12			
	109	= Total Cover	
50% of total cover: 54.5		20% of total cover: 21.8	
Woody Vine Stratum (Plot Size: 30')			
1 *None*			
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: 100.00% (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species	25	x 1 =	25
FACW species	80	x 2 =	160
FAC species	0	x 3 =	0
FACU species	4	x 4 =	16
UPL species	0	x 5 =	0
Column totals	109 (A)		201 (B)

Prevalence Index = B/A = 1.84

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 Four Vegetation Strata:

Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes X No ___

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

JUL 1 0 2019

SOIL

Sampling Point: 8

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
0-2	10YR 2 / 2	99	7.5YR 5 / 8	1	C	PL	Loamy Sand	
2-6	10YR 4 / 2	99	7.5YR 5 / 8	1	C	PL	Loamy Sand	
6-7	Gley 1 4 / 10Y	90	7.5YR 4 / 6	10	C	PL	Sandy Clay	
7-16	10YR 2 / 2	100					Loamy Sand	

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

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

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Suface (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)**
- 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: N/A

Depth (inches): N/A

Hydric soil present? Yes X No ___

Remarks:

JUL 1 0 2019

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: **Harbor Island** City/County: **Nuece County** Sampling Date: **March 19, 2019**

Applicant/Owner: **POCCA** State: **TX** Sampling Point: **9**

Investigator(s): **Ashley Bogrand, Orlando Recio** Section, Township, Range: **None**

Landform (hillslope, terrace, etc.): **Prairie** Local relief (concave, convex, none): **Concave** Slope (%): **0-1**

Subregion (LRR or MLRA): **LRR T** Lat: **27.84705400** Long: **-97.065785** Datum: **NAD83**

Soil Map Unit Name: **Mustang Fine Sand, 0 to 1 percent** NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of the 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 ____	No **X**	**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 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): ____
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 (Four Strata) - Use scientific names of plants

Sampling Point: 9

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot Size: 30')			
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapliing/Shrub Stratum (Plot Size: 15')			
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot Size: 5')			
1 *Cynodon dactylon*	80	Y	FACU
2 *Andropogon gerardii*	40	Y	FAC
3 *Andropogon glomeratus*	20	N	FACW
4 *Anagallis arvensis*	20	N	FACU
5 *Taraxacum officinale*	10	N	FACU
6 *Linum berlandieri*	5	N	UPL
7			
8			
9			
10			
11			
12			
	175 = Total Cover		
50% of total cover: 87.5	20% of total cover: 35		
Woody Vine Stratum (Plot Size: 30')			
1 *None*			
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: 50.00% (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	40	x 3 =	120
FACU species	110	x 4 =	440
UPL species	5	x 5 =	25
Column totals	175 (A)		625 (B)

Prevalence Index = B/A = 3.57

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 Four Vegetation Strata:

Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes ___ No X

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

JUL 1 0 2019

SOIL

Sampling Point: 9

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 4 / 2	98	7.5YR 5 / 8	2	C	PL	Loamy Sand	
6-7	Gley 2 6 / 8	95	5YR 4 / 6	5	C	PL	Clay Loam	
7-16	10YR 4 / 2	98	7.5YR 5 / 8	2	C	PL	Loamy Sand	

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

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

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Suface (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)**
- 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: **N/A**

Depth (inches): **N/A**

Hydric soil present? Yes X No ___

Remarks:

JUL 1 0 2019

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: **Harbor Island** City/County: **Nueces County** Sampling Date: **March 19, 2019**

Applicant/Owner: **POCCA** State: **TX** Sampling Point: **10**

Investigator(s): **Ashley Bogrand, Orlando Recio** Section, Township, Range: **None**

Landform (hillslope, terrace, etc.): **Prairie** Local relief (concave, convex, none): **None** Slope (%): **0**

Subregion (LRR or MLRA): **LRR T** Lat: **27.94765500** Long: **-97.066561** Datum: **NAD83**

Soil Map Unit Name: **Mustang Fine Sand, 0 to 1 percent** NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of the 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 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): ____
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 (Four Strata) - Use scientific names of plants

Sampling Point: 10

Tree Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapliing/Shrub Stratum (Plot Size: 15')			
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot Size: 5')			
1 *Eleocharis tuberculosa*	60	Y	OBL
2 *Schoenoplectus americanus*	10	N	OBL
3 *Sisyrinchium langloisii*	4	N	UPL
4			
5			
6			
7			
8			
9			
10			
11			
12			
	74 = Total Cover		
50% of total cover: 37	20% of total cover: 14.8		
Woody Vine Stratum (Plot Size: 30')			
1 *None*			
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: 100.00% (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	4	x 5 =	20
Column totals	74 (A)		90 (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 Four Vegetation Strata:

Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes X No ___

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

JUL 1 0 2019

SOIL

Sampling Point: **10**

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]	Loc2	Texture	Remarks
0-1	10YR 4 / 3	100					Loamy Sand	
1-2	2.5YR 5 / 1	98	7.5YR 5 / 6	2	C	PL	Sandy Clay	
2-10	10YR 4 / 3	99	Gley 1 7 / 5	1	C	PL	Sandy Clay	Gley1 7/5G
10-16	10YR 6 / 1	100					Loamy Sand	

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

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

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Suface (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: **N/A**

Depth (inches): **N/A**

Hydric soil present? Yes X No ___

Remarks:

JUL 1 0 2019

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: **Harbor Island** City/County: **Nuece County** Sampling Date: **March 19, 2019**

Applicant/Owner: **POCCA** State: **TX** Sampling Point: **11**

Investigator(s): **Ashley Bogrand, Orlando Recio** Section, Township, Range: **None**

Landform (hillslope, terrace, etc.): **Prairie** Local relief (concave, convex, none): **None** Slope (%): **0**

Subregion (LRR or MLRA): **LRR T** Lat: **27.84842800** Long: **-97.067285** Datum: **NAD83**

Soil Map Unit Name: **Mustang Fine Sand, 0 to 1 percent** NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of the 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 ____	No **X**	**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 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): ____
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 (Four Strata) - Use scientific names of plants

Sampling Point: 11

Tree Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapliing/Shrub Stratum (Plot Size: 15')			
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot Size: 5')			
1 *Andropogon gerardii*	90	Y	FAC
2 *Anagallis arvensis*	35	Y	FACU
3 *Nothoscordum bivalve*	10	N	FACU
4			
5			
6			
7			
8			
9			
10			
11			
12			
	135 = Total Cover		
50% of total cover: 67.5	20% of total cover: 27		
Woody Vine Stratum (Plot Size: 30')			
1 *None*			
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: 50.00% (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	45	x 4 =	180
UPL species	0	x 5 =	0
Column totals	135 (A)		450 (B)

Prevalence Index = B/A = 3.33

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 Four Vegetation Strata:

Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes ___ No X

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

JUL 1 0 2019

SOIL

Sampling Point: **11**

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]	Loc2	Texture	Remarks
0-2	7.5YR 3 / 1	98	7.5YR 4 / 4	2	C	PL	Loamy Sand	
2-9	10YR 5 / 1	92	7.5YR 4 / 6	8	C	PL	Loamy Sand	
9-11	7.5YR 2.5 / 1	85	5YR 4 / 6	15	C	PL	Sandy Clay	
11-15	7.5YR 6 / 1	85	7.5YR 5 / 8	15	C	PL	Loamy Sand	

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

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

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Suface (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: **N/A**

Depth (inches): **N/A**

Hydric soil present? Yes **X** No ___

Remarks:

JUL 1 0 2019

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: **Harbor Island** City/County: **Nueces County** Sampling Date: **March 19, 2019**

Applicant/Owner: **POCCA** State: **TX** Sampling Point: **12**

Investigator(s): **Ashley Bogrand, Orlando Recio** Section, Township, Range: **None**

Landform (hillslope, terrace, etc.): **Prairie** Local relief (concave, convex, none): **None** Slope (%): **0**

Subregion (LRR or MLRA): **LRR T** Lat: **27.84926800** Long: **-97.068213** Datum: **NAD83**

Soil Map Unit Name: **Mustang Fine Sand, 0 to 1 percent** NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of the 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 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): ____
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 (Four Strata) - Use scientific names of plants

Sampling Point: 12

Tree Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot Size: 15')			
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot Size: 5')			
1 *Andropogon gerardii*	98	Y	FAC
2 *Anagallis arvensis*	30	N	FACU
3 *Vicia sativa*	30	N	FACU
4 *Gonolobus suberosus*	5	N	FACW
5			
6			
7			
8			
9			
10			
11			
12			
	163 = Total Cover		
50% of total cover: 81.5	20% of total cover: 32.6		
Woody Vine Stratum (Plot Size: 30')			
1 *None*			
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: 100.00% (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	98	x 3 =	294
FACU species	60	x 4 =	240
UPL species	0	x 5 =	0
Column totals	163 (A)		544 (B)

Prevalence Index = B/A = 3.34

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 Four Vegetation Strata:

Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes X No ___

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

JUL 1 0 2019

SOIL

Sampling Point: 12

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]	Loc2	Texture	Remarks
1-14	10YR 4 / 2	95	5YR 4 / 6	5	C	PL	Sandy Clay	

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

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

- __ Histisol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Suface (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: **N/A**

Depth (inches): **N/A**

Hydric soil present? Yes ____ No **X**

Remarks:

JUL 1 0 2019

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: **Harbor Island** City/County: **Nueces County** Sampling Date: **March 19, 2019**

Applicant/Owner: **POCCA** State: **TX** Sampling Point: **13**

Investigator(s): **Ashley Bogrand, Orlando Recio** Section, Township, Range: **None**

Landform (hillslope, terrace, etc.): **Prairie** Local relief (concave, convex, none): **None** Slope (%): **0**

Subregion (LRR or MLRA): **LRR T** Lat: **27.84782600** Long: **-97.067601** Datum: **NAD83**

Soil Map Unit Name: **Mustang Fine Sand, 0 to 1 percent** NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of the 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 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): ____
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 (Four Strata) - Use scientific names of plants

Sampling Point: 13

Tree Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapliing/Shrub Stratum (Plot Size: 15')			
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot Size: 5')			
1 *Panicum repens*	100	Y	FACW
2 *Eleocharis tuberculosa*	70	Y	OBL
3 *Schoeneoplectus americanus*	10	N	
4 *Nothoscordum bivalve*	5	N	FACU
5			
6			
7			
8			
9			
10			
11			
12			
	185 = Total Cover		
50% of total cover: 92.5	20% of total cover: 37		
Woody Vine Stratum (Plot Size: 30')			
1 *None*			
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: 100.00% (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species	70	x 1 =	70
FACW species	100	x 2 =	200
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column totals	175 (A)		290 (B)

Prevalence Index = B/A = 1.66

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 Four Vegetation Strata:

Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes X No ___

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

JUL 1 0 2019

SOIL

Sampling Point: 13

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
0-7	10YR 5 / 4	98	7.5YR 5 / 8	2	C	PL	Loamy Sand	
7-13	10YR 4 / 1	95	7.5YR 6 / 8	5	C	PL	Silty Clay Loam	

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

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

- __ Histisol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Suface (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: N/A

Depth (inches): N/A

Hydric soil present? Yes X No ____

Remarks:

JUL 1 0 2019

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: **Harbor Island** City/County: **Nuece County** Sampling Date: **March 19, 2019**

Applicant/Owner: **POCCA** State: **TX** Sampling Point: **14**

Investigator(s): **Ashley Bogrand, Orlando Recio** Section, Township, Range: **None**

Landform (hillslope, terrace, etc.): **Prairie** Local relief (concave, convex, none): **None** Slope (%): **0**

Subregion (LRR or MLRA): **LRR T** Lat: **27.84776900** Long: **-97.06847** Datum: **NAD83**

Soil Map Unit Name: **Mustang Fine Sand, 0 to 1 percent** NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of the 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 ____	No **X**	**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 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): ____
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 (Four Strata) - Use scientific names of plants

Sampling Point: 14

Tree Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot Size: 15')			
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot Size: 5')			
1 *Cynodon dactylon*	75	Y	FACU
2 *Coreopsis basalis*	30	Y	UPL
3 *Erigeron pulchellus*	5	N	FACU
4 *Eleocharis tuberculosa*	3	N	OBL
5 *Polygala polygama*	3	N	FACU
6			
7			
8			
9			
10			
11			
12			
	116 = Total Cover		
50% of total cover: 58	20% of total cover: 23.2		
Woody Vine Stratum (Plot Size: 30')			
1 *None*			
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: 0.00% (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species	3	x 1 =	3
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	83	x 4 =	332
UPL species	30	x 5 =	150
Column totals	116 (A)		485 (B)

Prevalence Index = B/A = 4.18

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 Four Vegetation Strata:

Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes ___ No X

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

JUL 1 0 2019

SOIL

Sampling Point: 14

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]	Loc2	Texture	Remarks
0-8	10YR 5 / 4	98	7.5YR 4 / 6	2	C	PL	Loamy Sand	
8-15	10YR 7 / 1	99	7.5YR 6 / 8	1	C	PL	Loamy Sand	

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

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

- __ Histisol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Suface (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: N/A

Depth (inches): N/A

Hydric soil present? Yes X No ____

Remarks:

JUL 1 0 2019

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: **Harbor Island** City/County: **Nuece County** Sampling Date: **March 19, 2019**

Applicant/Owner: **POCCA** State: **TX** Sampling Point: **15**

Investigator(s): **Ashley Bogrand, Orlando Recio** Section, Township, Range: **None**

Landform (hillslope, terrace, etc.): **Prairie** Local relief (concave, convex, none): **None** Slope (%): **0**

Subregion (LRR or MLRA): **LRR T** Lat: **27.84717100** Long: **-97.069007** Datum: **NAD83**

Soil Map Unit Name: **Mustang Fine Sand, 0 to 1 percent** NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of the 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 ____	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:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- **X** 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)
- ___ 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 **X** No ____

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

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: 15

Tree Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot Size: 15')			
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot Size: 5')			
1 *Carex nigromarginata*	25	Y	FACU
2 *Eleocharis tuberculosa*	1	N	OBL
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
	26 = Total Cover		
50% of total cover: 13	20% of total cover: 5.2		
Woody Vine Stratum (Plot Size: 30')			
1 *None*			
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: 0.00% (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species	1	x 1 =	1
FACW species	0	x 2 =	0
FAC species	0	x 3 =	0
FACU species	25	x 4 =	100
UPL species	0	x 5 =	0
Column totals	26 (A)		101 (B)

Prevalence Index = B/A = 3.88

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 Four Vegetation Strata:

Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes ___ No X

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

JUL 1 0 2019

SOIL

Sampling Point: **15**

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]	Loc2	Texture	Remarks
0-16	10YR 4 / 3	99	7.5YR 5 / 8	1	C	PL	Loamy Sand	

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

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

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Suface (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: **N/A**

Depth (inches): **N/A**

Hydric soil present? Yes ____ No **X**

Remarks:

JUL 1 0 2019

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: **Harbor Island** City/County: **Nueces County** Sampling Date: **March 19, 2019**

Applicant/Owner: **POCCA** State: **TX** Sampling Point: **16**

Investigator(s): **Ashley Bogrand, Orlando Recio** Section, Township, Range: **None**

Landform (hillslope, terrace, etc.): **Prairie** Local relief (concave, convex, none): **None** Slope (%): **0**

Subregion (LRR or MLRA): **LRR T** Lat: **27.84697200** Long: **-97.070058** Datum: **NAD83**

Soil Map Unit Name: **Mustang Fine Sand, 0 to 1 percent** NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of the 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 ____	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:

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): ____
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 (Four Strata) - Use scientific names of plants

Sampling Point: 16

Tree Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot Size: 15')			
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot Size: 5')			
1 *Cynodon dactylon*	90	Y	FACU
2 *Sisyrinchium langloisii*	10	N	UPL
3 *Nothoscordum bivalve*	5	N	FACU
4 *Gaillardia pulchella*	5	N	UPL
5 *Anagallis arvensis*	5	N	FACU
6 *Verbena officinalis*	5	N	FACU
7			
8			
9			
10			
11			
12			
	120 = Total Cover		
50% of total cover: 60	20% of total cover: 24		
Woody Vine Stratum (Plot Size: 30')			
1 *None*			
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: 0.00% (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	105	x 4 =	420
UPL species	15	x 5 =	75
Column totals	120 (A)		495 (B)

Prevalence Index = B/A = 4.13

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 Four Vegetation Strata:

Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes ___ No X

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

JUL 1 0 2019

SOIL

Sampling Point: **16**

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]	Loc2	Texture	Remarks
0-16	10YR 5 / 4	100	/				Loamy Sand	

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

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

- __ Histisol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Suface (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: **N/A**

Depth (inches): **N/A**

Hydric soil present? Yes ____ No **X**

Remarks:

JUL 1 0 2019

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: **Harbor Island** City/County: **Nueces County** Sampling Date: **March 19, 2019**

Applicant/Owner: **POCCA** State: **TX** Sampling Point: **17**

Investigator(s): **Ashley Bogrand, Orlando Recio** Section, Township, Range: **None**

Landform (hillslope, terrace, etc.): **Prairie** Local relief (concave, convex, none): **None** Slope (%): **0**

Subregion (LRR or MLRA): **LRR T** Lat: **27.84660200** Long: **-97.069393** Datum: **NAD83**

Soil Map Unit Name: **Mustang Fine Sand, 0 to 1 percent** NWI classification:

Are climatic / hydrologic conditions on the site typical for this time of the 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 ____	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:

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): ____
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 (Four Strata) - Use scientific names of plants

Sampling Point: 17

Tree Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot Size: 15')			
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot Size: 5')			
1 *Andropogon gerardii*	60	Y	FAC
2 *Dalea purpurea*	30	Y	UPL
3 *Verbena officinalis*	5	N	FACU
4 *Gaillardia pulchella*	5	N	UPL
5			
6			
7			
8			
9			
10			
11			
12			
	100 = Total Cover		
50% of total cover: 50	20% of total cover: 20		
Woody Vine Stratum (Plot Size: 30')			
1 *None*			
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: 50.00% (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	60	x 3 =	180
FACU species	5	x 4 =	20
UPL species	35	x 5 =	175
Column totals	100 (A)		375 (B)

Prevalence Index = B/A = 3.75

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 Four Vegetation Strata:

Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes ___ No X

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

JUL 1 0 2019

SOIL

Sampling Point: 17

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 / 4	99	7.5YR 5 / 8	1	C	PL	Loamy Sand	

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

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

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Suface (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: **N/A**

Depth (inches): **N/A**

Hydric soil present? Yes ___ No **X**

Remarks:

JUL 1 0 2019

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: **Harbor Island** City/County: **Nueces County** Sampling Date: **March 19, 2019**

Applicant/Owner: **POCCA** State: **TX** Sampling Point: **18**

Investigator(s): **Ashley Bogrand, Orlando Recio** Section, Township, Range: **None**

Landform (hillslope, terrace, etc.): **Prairie** Local relief (concave, convex, none): **Concave** Slope (%): **10-May**

Subregion (LRR or MLRA): **LRR T** Lat: **27.84667400** Long: **-97.06696** Datum: **NAD83**

Soil Map Unit Name: **Mustang Fine Sand, 0 to 1 percent** NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of the 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)
- ____ 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 **X**	No ____	Depth (inches): ____
Water table present?	Yes ____	No **X**	Depth (inches): ____
Saturation present? (includes capillary fringe)	Yes **X**	No ____	Depth (inches): ____

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

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

Remarks:

VEGETATION (Four Strata) - Use scientific names of plants

Sampling Point: 18

Tree Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot Size: 15')			
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot Size: 5')			
1 *Panicum repens*	50	Y	FACW
2 *Eleocharis tuberculosa*	30	Y	OBL
3 *Nothoscordum bivalve*	5	N	FACU
4			
5			
6			
7			
8			
9			
10			
11			
12			
	85 = Total Cover		
50% of total cover: 42.5	20% of total cover: 17		
Woody Vine Stratum (Plot Size: 30')			
1 *None*			
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: 100.00% (A/B)

Prevalence Index worksheet

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	50	x 2 =	100
FAC species	0	x 3 =	0
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column totals	85 (A)		150 (B)

Prevalence Index = B/A = 1.76

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 Four Vegetation Strata:

Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes X No ___

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

JUL 1 0 2019

SOIL

Sampling Point: **18**

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]	Loc2	Texture	Remarks
0-16	10YR 4 / 1	99	7.5YR 5 / 8	1	C	PL	Loamy Sand	

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

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

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Suface (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: **N/A**

Depth (inches): **N/A**

Hydric soil present? Yes X No ___

Remarks:

JUL 1 0 2019

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: **Harbor Island** City/County: **Nueces County** Sampling Date: **March 19, 2019**

Applicant/Owner: **POCCA** State: **TX** Sampling Point: **19**

Investigator(s): **Ashley Bogrand, Orlando Recio** Section, Township, Range: **None**

Landform (hillslope, terrace, etc.): **Prairie** Local relief (concave, convex, none): **None** Slope (%): **0**

Subregion (LRR or MLRA): **LRR T** Lat: **27.84627000** Long: **-97.063546** Datum: **NAD83**

Soil Map Unit Name: **Mustang Fine Sand, 0 to 1 percent** NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of the 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 ____	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:

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): ____
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 (Four Strata) - Use scientific names of plants

Sampling Point: 19

Tree Stratum (Plot Size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Sapling/Shrub Stratum (Plot Size: 15')			
1 *None*			
2			
3			
4			
5			
6			
7			
8			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		
Herb Stratum (Plot Size: 5')			
1 *Dichanthium aristatum*	95	Y	FACU
2 *Taraxacum officinale*	10	N	FACU
3 *Anagallis arvensis*	5	N	FACU
4 *Oenothera speciosa*	2	N	UPL
5 *Verbena officinalis*	2	N	FACU
6			
7			
8			
9			
10			
11			
12			
	114 = Total Cover		
50% of total cover: 57	20% of total cover: 22.8		
Woody Vine Stratum (Plot Size: 30')			
1 *None*			
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: 0.00% (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	112	x 4 =	448
UPL species	2	x 5 =	10
Column totals	114 (A)		458 (B)

Prevalence Index = B/A = 4.02

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 Four Vegetation Strata:

Tree - Woody plants, excluding vines 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

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

Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes ___ No X

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

JUL 1 0 2019

SOIL

Sampling Point: **19**

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]	Loc2	Texture	Remarks
0-16	**10YR 7 / 2**	**99**	**10YR 7 / 8**	**1**	**C**	**PL**	**Loamy Sand**	

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

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

- __ Histisol (A1)
- __ Histic Epipedon (A2)
- __ Black Histic (A3)
- __ Hydrogen Sulfide (A4)
- __ Stratified Layers (A5)
- __ Organic Bodies (A6) **(LRR P, T, U)**
- __ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- __ Muck Presence (A8) **(LRR U)**
- __ 1 cm Muck (A9) **(LRR P, T)**
- __ Depleted Below Dark Suface (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: **N/A**

Depth (inches): **N/A**

Hydric soil present? Yes ____ No **X**

Remarks:

List of Plant Species

Motiva Savannah Site

Common Name	Scientific Name	Indicator Status
Bermuda Grass	*Cynodon dactylon*	FACU
Black-Edge Sedge	*Carex nigromarginata*	FACU
Robin's-Plantain	*Erigeron pulchellus*	FACU
Racemed Milkwort	*Polygala polygama*	FACU
Garden Vetch	*Vicia sativa*	FACU
Pink Evening Rose	*Oenothera speciosa*	UPL
Firewheel	*Gaillardia pulchella*	UPL
Crowpoison	*Nothoscordum bivalve*	FACU
Scarlet Pimpernel	*Anagallis arvensis*	UPL
Common Dandelion	*Taraxacum officinale*	FACU
Berlandier's Yellow Flax	*Linum berlandieri*	UPL
Giant-Reed	*Arundo donax*	FAC
Angular-Fruit Anglepod	*Gonolobus suberosus*	FACW
Angleton's Bluestem	*Dichanthium aristatum*	FACU
Roadside Blue-Eyed Grass	*Sisyrinchium langloisii*	UPL
Big Bluestem	*Andropogon gerardii*	FAC
Bushy Bluestem	*Andropogon glomeratus*	FACW
Chairmaker's Club-Rush	*Schoenoplectus americanus*	OBL
Tiny Blulet	*Houstonia pusilla*	FACU
Goldenmane Tickseed	*Coreopsis basalis*	UPL
Showy Evening Primrose	*Oenothera grandis*	UPL
Virginia pepperweed	*Lepidium virginicum*	UPL
Spiny-Leaf Sow-Thistle	*Sonchus asper*	UPL
Purple Prairie Clover	*Dalea purpurea*	UPL
Bristleleaf Pricklyleaf	*Thymophylla tenuiloba*	UPL
Torpedo Grass	*Panicum repens*	FACW

APPENDIX D

Resumes of Field Personnel

Ashley Bogrand, M.S.
Biologist

wood.

Summary

Years of Experience
6

West US- Houston
17325 Park Row

Houston, TX 77084

Industries
- Oil and Gas
- Midstream

Areas of Expertise
- Biological Resources
- Wildlife Inventories
- Avian Biology
- Vegetation Assessment
- Invasive Species Removal
- NEPA documentation
- Wetland Delineation
- Environmental Site Assessment
- ArcGIS

Areas of Expertise
- Wetland Delineation - 2019

Professional Summary

Ms. Bogrand is an experienced biologist with six years in the environmental and wildlife consulting field. Ms. Bogrand's experience includes biological resource inventories with emphasis on avian and wildlife biology, vegetation assessments, wetland delineations, Phase I Environmental Site Assessments (ESA), National Environmental Policy Act (NEPA) documentation, and experience with ArcGIS map creation and data management.

Qualifications

Education

Bachelor of Science, Wildlife Biology, West Texas A&M University, 2009

Masters of Science, Biology, Sam Houston State University, 2013

Registrations / Certifications / Licenses

40 Hour HAZWOPER

Publications / Presentations

- Bogrand, A.L., D.L.H. Neudorf, P. Matich. 2017. Predator recognition and nest defence by Carolina Wrens *Thryothorus ludovicianus* in urban and rural environments: does experience matter? Bird Study. 64: 211-221.

Software / Skills

- ArcGIS

Current Projects

- Motiva Berth Expansion
- Corpus Christi Harbor Island Development
- INEOS Wastewater Pipe Installation

Experience

Biologist

Phillips 66, Gray Oak Pipeline, Texas

Ms. Bogrand assisted on field surveys and permitting support services to Phillips 66 on the 845-mile-long Gray Oak Pipeline Project, proposed to transport crude oil from the Permian Basin to the Corpus Christi area. Ms. Bogrand conducted field surveys for the evaluation and identification of waters of the United States (WOUS), including wetlands and streams and threatened and endangered species surveys along the proposed pipeline routes.

Experience

Motiva Enterprises LLC, Port Arthur Berth, Port Arthur, TX

- Motiva submitted pre-application packages to USACE Galveston to begin the process for the creation of a new liquid berth at the Motiva Refinery and Terminal in Port Arthur, TX. Ms. Bogrand assisted permitting specialists in designing responses to comments submitted by USACE and coordinating figure creation with the GIS sector.

Port of Corpus Christi Authority (POCCA), Harbor Island, Texas

- POCCA required sediment sampling (testing for aquatic vegetation, grain size, total organic carbons, and benthic invertebrates), water quality and velocity measurements, presence/absence of oyster reefs, and marine life netting and identification for the development of Harbor Island. Ms. Bogrand participated in composing work plans and health and safety plans. Ms. Bogrand also conducted surveys and testing for all necessary field sampling. This included using a Petite Ponar to collect benthic invertebrate and sediment samples, a Valeport 106 Water Velocity Meter to measure water velocity, and a flow meter to measure water quality. Future work will be participating in the composure of an EA.

Environmental Scientist

TPC Group, LLC, Houston Operations, Houston, TX

- Ms. Bogrand assisted in the renewal process of the Texas Commission on Environmental Quality (TCEQ) industrial wastewater discharge permit for TPC Group's Houston based facility. Activities included analyzing sampling data, FEMA records, outflow systems, and composure of TCEQ Form 10055.

Enbridge, Hockley Phase I Environmental Site Assessment (ESA), Hockley, TX

- Ms. Bogrand conducted the Phase I ESA for three residential locations located in Hockley, TX. Activities included field reconnaissance, review of state, county, and local records, and preparation of the Phase I ESA report.

Enbridge, Jefferson County Right of Way Phase I ESA, Beaumont, TX

- Ms. Bogrand conducted the Phase I ESA for an oil and gas pipeline right of way property. Activities included field reconnaissance, review of state, county, and local records, and preparation of the Phase I ESA report.

Lyondell, Waste Inventory Tracking Program Development, Channelview, TX

- Ms. Bogrand organized all current and expired waste streams at two LyondellBasell locations into a functioning, interactive database for the support of the waste management personnel. This database included organizing waste into categories, and providing notifications when updates were needed to the waste profile.

Site Supervisor

General Electric, Rose Equipment and Facility Decommissioning and Cleaning, Tyler, TX

- Ms. Bogrand acted as site supervisor for the decommissioning and cleaning of a GE Plant in Tyler, TX. The role of site supervisor included monitoring for OSHA compliance and demonstrating successful completion of the project.

INEOS Styrolution, Construction of a Waste Water Pipe, Texas City, TX

- Ms. Bogrand acted as construction supervisor and environmental monitor for installation of a wastewater pipeline located in Texas City. This role involved managing safety for all sub-contractors, meeting with the client, composing daily reports, and monitoring environmental issues such as spill cleanups, SWPPP compliance, and general oversight.

Pre-Wood Employment

Gulf South Research Corporation

- Ms. Bogrand managed and conducted field surveys for biological resources with an emphasis on avian and wildlife biology, contributing to the preparation of technical reports, data collection and analysis, and support on ecological restoration and invasive species removal projects. Specific projects include cowbird trapping, construction monitoring, breeding burrowing owl surveys, neo-tropical avian surveys, general wildlife inventory surveys in the Mojave Desert, wildlife hazard assessments and surveys for the Interior Least Tern on the Red River.

Western Eco-systems Technology

- Ms. Bogrand conducted aerial surveys of the Lesser and Greater Prairie Chickens. This included recording data and identifying between the two types of Prairie Chickens. She also managed and conducted post construction monitoring on wind farms. This involved using plot surveys following transect protocol to monitor bird and bat fatalities and using proper identification methods to identify bird and bat species.

The City of Amarillo

- Ms. Bogrand maintained and updated the water and waste water GIS database with record drawing information from project representatives. She operated computer workstation to update maps as new data is received relative to subdivisions, developments, capital improvement projects, and other projects. Ms. Bogrand prepared water and waste water drawings using GIS software. Assisted in the organization and filing of drawings, plans and other documents related to the maintenance and upkeep of record drawing information. This also included, producing printed water and waste water maps for both the Utilities office and the general public showing map features, platted lots, and distances.

Eco-logical Environmental Services

- Ms. Bogrand managed projects from initial client consultation through project completion. Conducted Phase I site assessments and reports and generated storm water discharge permitting and compliance. She generated technical and well-composed reports to clients and government regulatory agencies and provided communication to field personnel, vendors, and different government agencies to complete projects on time. This work also included conducting assessment and remediation processes and procedures on a variety of chemical spills and disposing of hazardous and non-hazardous waste from various industries.

Professional History

- Wood (2018 – Present)
- Gulf South Research Corporation (2016-2018)
- Western Ecosystem Technology (2015-2016)
- The City of Amarillo, Texas (2013-2015)
- Eco-logical Environmental Services (2013)

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Orlando Recio
Civil Engineer, EIT

Years of experience
9

Registrations/Certifications
Engineer In Training, Texas

Professional affiliations
American Society of Civil Engineers
Water Environment Association of Texas (WEAT)

Education
B.S., 2008, Civil Engieering, Texas A&M University-Kingsville, Kingsville, TX

Mr. Recio is currently an Engineer in WOOD's Corpus Christi, Texas office. Over the years Mr. Recio has gained experience, Subsurface Utility Engineering (SUE), utility design, construction, operations, and inspection of civil type projects (roads, highways, levees, pipelines). Projects have included design build projects, roadways, highways, drainage studies, environmental testing and analysis, and flood mitigation measures using GIS mapping techniques. Additionally, Mr. Recio also has extensive experience in Environmental assessment and site remediation for Industrial clients. In addition to project experience he has also served as a Site Health and Safety Representative whom was responsible for reviewing safety plans, addressing local safety issues and passing on important information to colleagues. As a Project Engineer, Mr. Recio understands the need for creating a friendly and reliable workplace culture conducive for project success and that the safety of the general public and fellow coworkers is paramount.

Selected project experience

Site Remediation, Industrial Client, Corpus Christi, TX.

Mr. Recio is responsible for the operation of on-site extraction and treatment of groundwater with a significant historical hydrocarbon release. He also assists in several field work activities such as sampling, construction oversight and general maintenance activities for the onsite Ground Water Recovery Unit. In addition to that Mr. Recio evaluates the effectiveness of the recovery network of wells and routinely updates the client. **Date:(October 2018-Current).**

Water Waste and Remediation Services, Industrial Client, Corpus Christi, TX

Mr. Recio was the Project Manager for a 5 year contract to provide Operation and Maintenance Services on a remediation site as well as provide regulatory and environmental consultation services to the client. Mr. Recio was the direct contact to the client and manages new tasks by developing budgets and pulling in company resources as needed. Mr. Recio also coordinated semi-annual sampling and reporting requirements to the TCEQ for two project locations. **Date: February 2017–September2018**

Harbor Bridge Design Build Utility Coordinator, Flatiron/Dragados LC. Corpus Christi, TX

Mr. Recio was the lead utility coordinator for a TxDOT project building a new bridge in Corpus Christi, TX. He was responsible for coordinating with Utility Stakeholders and project designers to adjust utilities in the way of construction. These efforts included conducting a SUE investigation, cataloging all utilities and assisting all utility stakeholders through a unique permit process. He managed a small team to ensure all stakeholders are being assisted promptly and all deliverables are being met promptly. **Date: (January 2016 – February 2017)**

Benzene Waste Operations Neshaps (BWON) Sampling Initiative, Industrial Client, Corpus Christi, TX.

Mr. Recio has worked with the client to develop a procedure for sampling over 800 high risk waste streams. Mr. Recio also was involved in hiring and training team for conducting field work. He is responsible for developing sampling schedule, analyzing results and providing continual updates to the client. Mr. Recio also will respond and coordinate any additional tasks that the client request. **Date: (December 2014 – December 2015)**.

Soil Vapor Extraction, Industrial Client, Corpus Christi, TX.

Mr. Recio has ran a "first of its kind" SVE unit and has been vital in its optimization. He routinely samples and monitors various points and ships out hazardous classified samples via FEDEX. Also, as new wells are installed he has coordinated with utility locators and drilling companies to ensure all the work is done safely and without incident. **Date: (2012-2015).**

Site Remediation, Industrial Client, Corpus Christi, TX.

Mr. Recio has designed an access road for a system responsible for the operation of on-site extraction and treatment of groundwater with a significant historical hydrocarbon release. He has also assisted in several field work activities such as sampling and semi-annual gauging events and construction oversight for a new Ground Water Recovery Unit. In addition to that Mr. Recio has performed several pump tests in order to maximize effectiveness of their recovery network of wells. **Date:(2008-2015).**

Phase I Environmental Site Assessment (ESA), Texas General Land Office, Rockport, TX.

Mr. Recio conducted environmental site assessments of several tracts of land and interviewed land owners, investigating any historic impacts. A detailed report was then put together by Mr. Recio and submitted to the Texas GLO. **Date: (2012 -2015)**

Ballard Sand Pits Monitoring, TCEQ, Robstown, TX.

Mr. Recio has air monitored the remediation site for high concentrations of benzene in the air and was responsible for alerting personnel when any high concentrations were present. This was so that immediate actions can be taken and the surrounding community and construction workers would remain safe. This area was used as a dumping site for several contaminants, most notably benzene. During this project he worked closely with the TCEQ as this was a Super Fund Site. **Date:(Sept –July 2009)**