# REPORT OF FINDINGS ECOLOGICAL HABITAT & BATHYMETRIC SURVEY

AXIS MIDSTREAM PARTNERS, LLC Midway to Harbor Island Pipeline Project Nueces and San Patricio Counties, Texas

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#### 1.0 BACKGROUND & INTRODUCTION

Triton Environmental Solutions, LLC (Triton) performed a seagrass, vegetation, annual high tide, mean high water, oyster, and sounding survey of the proposed Midway to Harbor Island Pipeline Project on November 10, November 14-17, November 19-21, November 26-29, 2018. The vicinity, location, survey results, and approximate sensitive resource boundaries are included in Figures 1-4. Survey photos are provided in Appendix B.

The purpose of the survey was to identify and map the presence of seagrass bed(s), oyster reef(s), determine depth of bay bottom, depth of soft sediment, substrate type, delineate the annual high tide (AHTL), mean high water (MHW) within the survey corridor.

The project, as proposed, comprises three major land forms: Harbor Island, Redfish Bay, and the mainland area between Aransas Pass and Ingleside (Figure 1). The proposed project terminus occurs at a highly industrial and residential developed section of land between Aransas Pass and Ingleside.

Harbor Island forms a flood-tidal delta complex that is large, triangular, and shallow and is bordered and bisected by dredged channels and dredged-material disposal sites. It is bounded on the east by Lydia Ann Channel, which connects to the Gulf Intracoastal Waterway (GIWW) in Aransas Bay; on the west by Redfish Bay; on the north by Aransas Bay; and on the south by the Corpus Christi Ship Channel, which separates it from Mustang Island. Bisecting this large bay-delta complex is the Aransas Channel. In addition, there are several smaller and tributary intrabay channels. This bay and tidal delta complex (approximately 4,047 hectares, or 10,000 acres) represents the most extensive and northernmost estuarine tropical wetlands on the Texas coast and is primarily composed of black mangrove (*Avicennia germinans*) and Spartina marsh, seagrass beds, and oyster reefs (Pulich, 2006).

Redfish Bay lies north of Corpus Christi Bay proper and southwest of Aransas Bay and parallels the mainland area between Ingleside and Rockport. The GIWW forms its western border, separating it from the mainland. This large, very shallow bay is protected from prevailing southeast winds by numerous saltmarsh islands, oyster reefs, and shoals and is well known for its extensive seagrass beds. Particularly, the Redfish Bay segment of Nueces estuary contains the most extensive, pristine seagrass beds on the Texas coast outside the Laguna Madre, with roughly 3,644 hectares (9,000 acres) estimated in 1994. Redfish Bay also contains the largest abundance of all five-seagrass species outside the lower Laguna Madre. Salinities are typically polyhaline, and water clarity is moderately high (Pulich, 2006).

Texas Parks and Wildlife Department (TPWD) proclaimed Redfish Bay (32,000 acres) as a state scientific area in 2000. For the next five years, voluntary "prop-up" zones were established to help boaters avoid further damage to seagrass habitat in the Redfish Bay State Scientific Area (RBSSA). But when voluntary efforts by boaters failed, mandatory regulations were established in 2006 that prohibited the uprooting of seagrass in RBSSA by propellers. The TPWD Coastal

Fisheries Division routinely monitored RBSSA to evaluate the effects of new regulations on seagrass. Fortunately, it was found that a significant reduction in propeller scarring occurred after mandatory regulations were passed in this area. Because of these promising results, in 2013 the Texas Legislature passed a statewide law making it illegal to uproot seagrass coastwide in Texas (TPWD, 2017).

#### 2.0 METHODOLOGY

Triton surveyed along transects oriented parallel to each route centerline. The preferred centerline totaled 5.4 miles and the alternative centerline totaled 6.0 miles. Transects extended 500 feet either side of the preferred pipeline alignment, alternative pipeline alignment and the horizontal directional drill (HDD) backstring (Figure 2), creating a 1,000-foot survey corridor. The transects were spaced 100-foot apart out to 500-feet from both sides of each centerline. A 1,000-foot corridor of the shorelines associated with the preferred pipeline and pipeline alternative was also surveyed. The approved survey plan translated to approximately 78 total miles of transects surveyed and 1,040.4 acres of survey area.

Triton mapped habitats, including U.S. Army Corps of Engineers (USACE) jurisdictional areas, elevations within the pipeline route corridor, the Annual High Tide Line (ATHL), Mean High Water (MHW), and the edge of seagrass within 500 feet of the pipeline. Sample stations were recorded every 500 feet on the centerline, and on the 200-foot and 500-foot transects within each survey corridor. Elevations, substrate and depth of soft sediment were recorded at these sample stations. This totaled 418 data stations within the survey corridor.

To perform the jurisdictional determination/delineation on land areas within the survey corridor, Triton used the "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coast Plain Region (Version 2.0)" (U.S. Army Corps of Engineers, 2010) as well as the 1987 Corps of Engineers Wetlands Delineation Manual (TR Y-87-1). The routine method for plots greater than five acres was employed. According to the 1987 USACE Manual, three transects are required for a property with a baseline greater than 0.25 miles but less than 1.0 mile. A portion of the land-based survey in the vicinity of the Redfish Bay Facility is encompassed by roads and bermed areas, creating a rectangular boundary (Figure 3). As a result, transects were developed in this area to conduct the wetland delineation. Because the baseline for the Redfish Bay Facility property was determined to have a length of approximately 0.25 miles, only three transects were required by the USACE Manual. Transects were spaced approximately 370-400 feet apart and perpendicular to the hydrologic gradient of the survey area (Figure 3). Due to the linear nature of the Harbor Island component of the survey, wetland, boundary and upland sample pits were collected along the pipeline route to regularly determine the upland/wetland boundary (Figure 4).

Triton sampled observation points along each transect and throughout the remainder of the property within each vegetation community. To make a wetland determination, Triton recorded vegetation, soils and hydrology parameters at each observation point. Triton inspected all land-

based vegetation communities within the approximately 1,040.4-acre survey area. To determine hydric soils, Triton used the Regional Supplement to the USACE Manual along with the 1987 manual.

The jurisdictional boundary for Sections 404 and 10 was established by mapping the AHT line and MHW line, as well as the upper edge of estuarine wetlands that extended landward of the AHT line. To determine and delineate the AHT line and MHW line, Triton used the March 2018 verified NWP 13 permit (SWG-2014-00769) located in nearby Copano Bay, Texas. The methods from "Field Guide for Wetland Delineation: 1987 Corps of Engineers Manual" were used to determine the presence/absence of wetlands on the property. According to the verified plans in SWG-2014-00769, the AHT elevation in the project area is equivalent to +2.65 feet NAVD88 and the MHW elevation in the project area is +0.99 feet NAVD88.

To determine the presence of seagrass, Triton collected 6-inch diameter core samples in waters where seagrass could not be visually observed. In areas where hard substrate was encountered by soundings, Triton collected 6-inch diameter core samples from the bay bottom to determine if live reef, shell reef, shell hash or other shell was present.

Vertical data was recorded in NAVD88 (feet). A Trimble Sonarmite echosounder was employed to continually record bay bottom elevations at 20-foot intervals along marine sections of all transects within the survey corridor.

Triton deployed two Trimble Geo7x handheld GPSs with sub-meter accuracy, as well as a Trimble R10 RTK GPS receiving real-time sub-centimeter corrections from the VRS network, to perform the survey. All collected data was processed in the office using ArcGIS 10.4 software.

The methods deployed have historically been approved by the USACE.

#### 3.0 RESULTS

The AHTL and MHW delineation along the shorelines of the survey corridor is shown in Figures 3 and 4. Tidal fluctuation and meteorological observations were recorded for each survey day. This data is illustrated in Table 1. Air temperature ranged from 45 degrees (°F) on November 14 to 71 degrees on November 29. The average air temperature during the survey period was 56 °F. Water temperature ranged from 58 °F on November 27 to 67°F on November 10. Average water temperature during the survey period was 61°F. Winds ranged from calm to 20 miles per hour (mph). November 15, 16, and 28 had the calmest wind speed days and November 10 and 26 resulted in the windiest days during the survey period. No recordable precipitation occurred during the survey period. The tide level fluctuated from +0.31 feet on November 10 to +1.79 feet on November 14. The tidal fluctuation averaged +0.78 feet (NAVD88) during the survey period.

Sounding results are displayed in Figure 2. Elevations throughout the marine survey area ranged from 0 feet to -17.78 feet NAVD88, with an average of -3.96 feet NAVD88. Elevations throughout

the Redfish Bay Facility land-based portions of the survey area ranged from +2.54 feet to +6.33 feet NAVD88, with an average of +4.9 feet NAVD88. Elevations throughout the Harbor Island land-based portions of the survey area ranged from +0.2 feet to +16.21 feet NAVD88, with an average of +4.9 feet NAVD88.

Bay bottom substrate was either sand, mud or shell. Sand was the dominant substrate type. Depth of soft sediment ranged from 0 feet to 3.2 feet and averaged 0.3 feet (Figure 2). Soft sediment was the deepest at the existing oil field channels. All soft sediment substrate was comprised of mud.

# REPORT OF FINDINGS: ECOLOGICAL HABITAT & BATHYMETRIC SURVEY, Midway to Harbor Island Pipeline Project

Table 1. Meteorological and Oceanographic Observations

	Air	Water		Mind				Beginning	Ending Tide
Date:	Temperature (°F)	Temperature (°F)	Cloud	Speed (mph)	Wind Direction	Precipitation (in.)	Salinity (ppm)	Tide Level (NAVD88 Ft)	Level (NAVD88 Ft)
10-Nov	53	67	Overcast	10-20	NE	0	18	1.79	1.67
14-Nov	45	61	Clear	5-10	MNM	0	18	0.64	0.31
15-Nov	51	59	Clear	9-0	Calm	0	19	0.74	0.39
16-Nov	52	64	Partly	5-0	Calm	0	20	0.92	8.0
17-Nov	9	62	Mostly	5-13	BNN	0	22	1.07	68'0
19-Nov	52	09	Cloudy	10-12	Ν	0	22	1.28	1.36
20-Nov	55	59	Mostly	10-12	BNN	0	23	1.16	1.51
21-Nov	99	58	Light Rain	10-12	ЭN	0	23	1.2	1.54
26-Nov	54	09	Cloudy	10-50	N	0	23	1.2	0.81
27-Nov	09	58	Partly	01-0	BNN	0	23	1.24	0.75
28-Nov	58	09	Partly	9-0	MSS	0	23	1.39	0.81
29-Nov	71	09	Overcast	5-10	S	0	23	1.37	0.88
H	-				0 0000		! ::		

Note: Tide levels were referenced to NOAA's USS Lexington Station (8775296), Corpus Christi Bay, Texas.

https://tidesandcurrents.noaa.gov/waterlevels.html?id=8775296

Approximately 1.25 acres of consolidated, hard oyster shell substrate was observed within the survey corridor (Figure 2, Table 2). However, live oysters were not documented with the 1,000-foot survey corridor.

The results of the seagrass survey are shown in Figures 2-4. Dense seagrass beds were found in the eastern and western-most sections of the survey area, near the Redfish Bay Facility and Harbor Island. Approximately 45.38 acres of seagrass beds were delineated within the survey area (Table 2). There was no apparent soft sediment accumulation in the areas with seagrass. Sand was the dominant substrate type. Elevations ranged from 0 feet to -5.3 feet NAVD88 in the region with seagrass. All five Texas seagrass species were observed during the survey. Turtle grass (*Thalassia testudinum*) and shoalgrass (*Halodule wrightii*) were the two dominant seagrass species with manatee grass (*Syringodium filiforme*), clover grass (*Halophila englemannii*), and widgeon grass (*Ruppia maritima*) were present as non-dominant species within survey area.

Rookery islands were present within the vicinity of the proposed project as well as within the survey corridor. During the survey period, Triton observed numerous avian species utilizing the rookeries for forage and roosting activities. Species observed included Osprey, Roseate Spoonbill, Great Blue Heron, Little Blue Heron, Great Egret, Brown Pelican, American White Pelican, Royal Tern, Ring-Billed Gull, Laughing Gull, Long-Billed Dowitcher, and other associated species. The Texas General Land Office (GLO) provides spatial data of these areas and they are illustrated in Figure 2 and photos of the signage located at some of the rookery areas are shown in Appendix B.

Triton sampled 26 pit locations to determine the upland/wetland boundary at the Redfish Bay Facility and Harbor Island. USACE Wetland Determination Data Forms for each pit location are provided in Appendix C. A total of 149.62 acres of wetlands was mapped within the 1,040.4-acre survey corridor (Figures 2-4 and Table 2). This included land portions and islands within the survey corridor. The wetland types included USACE jurisdictional, tidally-influenced mangrove and smooth cordgrass marsh, estuarine wetlands, and sand/mud flats. The typical estuarine marsh exhibited sea ox-eye daisy (*Borrichia frutescens*), turtleweed (*Batis maritima*), dwarf saltwort (*Salicornia bigelovii*), salt-meadow cordgrass (*Spartina patens*), smooth cordgrass (*Spartina alterniflora*), shoregrass (*Monanthochloe littoralis*) and black mangrove (*Avicennia germinans*).

Nearly all wetland/jurisdictional areas within the survey corridor occurred below the AHTL. However, at the Redfish Bay Facility a large estuarine wetland occurred above the AHTL (Figure 3). Portions of Harbor Island are comprised of established, bermed upland confined dredged material placement areas (DMPAs). Triton surveyed some of these DMPAs and they were determined to contain wetlands (Figure 4). The berm height separating these areas from the surrounding landscape averaged 5 to 16 feet. It is Triton's best professional judgment that these wetlands would likely be non-jurisdictional.

Table 2. Habitat Type Summary Within the 1,040.40-acre Survey Corridor

Habitat Type	Acreage
Black Mangrove	30.65
Estuarine Wetland	42.70
Oyster Shell	1.25
Smooth Cordgrass	4.80
Seagrass Beds	45.38
Unvegetated Flat	71.47
TOTAL:	196.25

#### **4.0 CONCLUSIONS**

The proposed project is situated in an environmentally sensitive area with highly revered habitats. As the project proceeds with planning and USACE permitting, it is Triton's recommendation that careful consideration be made to assure that the project plan ultimately selects the least environmentally damaging practicable alternative (LEDPA). Careful consideration to compensatory mitigation is also recommended as the mitigation ratio for impacts to any of these habitats (jurisdictional wetlands, seagrass beds) could require high mitigation ratios. Further, illustration of avoidance and minimization measures to the project plan should be clearly documented. Conservation measures for rookeries, sea turtles, and construction methods should also be considered. Except for wetlands located in upland confined dredged material placement areas, it is Triton's best professional judgment that any impacted wetlands and/or seagrass beds would likely be considered high quality and value; and could represent an Aquatic Resource of National Importance.

Redfish Bay is considered a shallow water bay. A detailed access plan for all vessels associated with the project should be developed and carefully managed in order to discourage the possibility of prop-washing seagrass beds and/or vessels "running aground."

### **5.0 REFERENCES CITED**

Environmental Laboratory. 1987. "Corps of Engineers Wetlands Delineation Manual," Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Miss.

Pulich, W.M., Jr., ed., 1999, Seagrass conservation plan for Texas: Austin, Texas Parks and Wildlife Department, Resource Protection Division, 79 p.

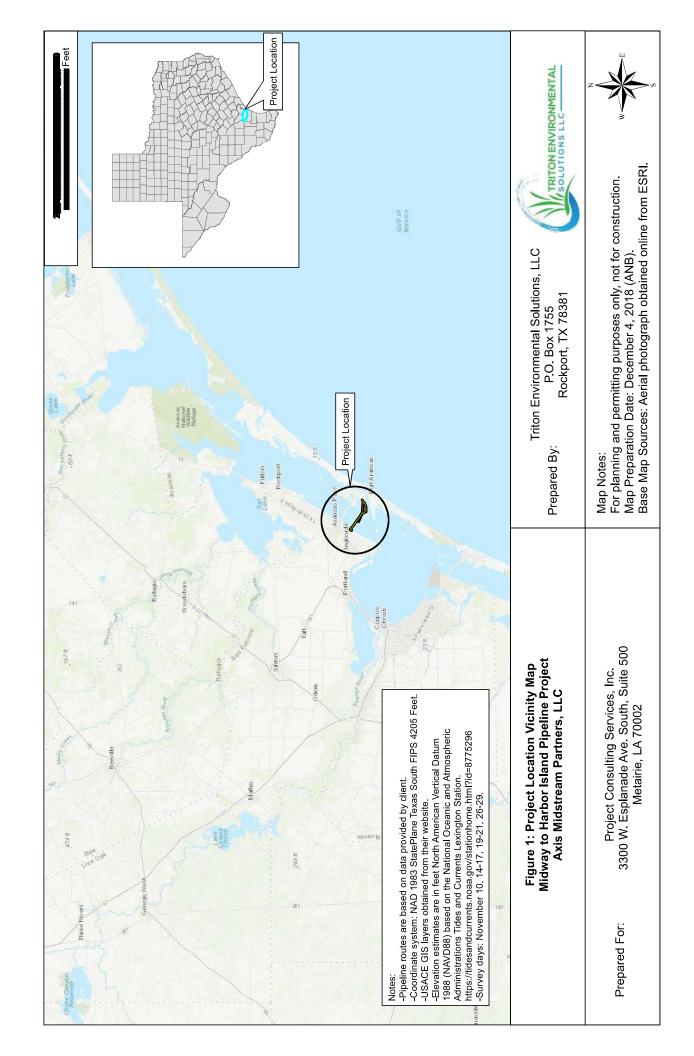
Pulich, W.M., Jr., 2006, Texas Coastal Bend, 19p. https://pubs.usgs.gov/sir/2006/5287/pdf/TexasCoastalBend.pdf [Accessed December 2018].

"Seagrass Protection." Texas Parks and Wildlife, 13 Nov. 2017, tpwd.texas.gov/landwater/water/habitats/seagrass/redfish-bay.

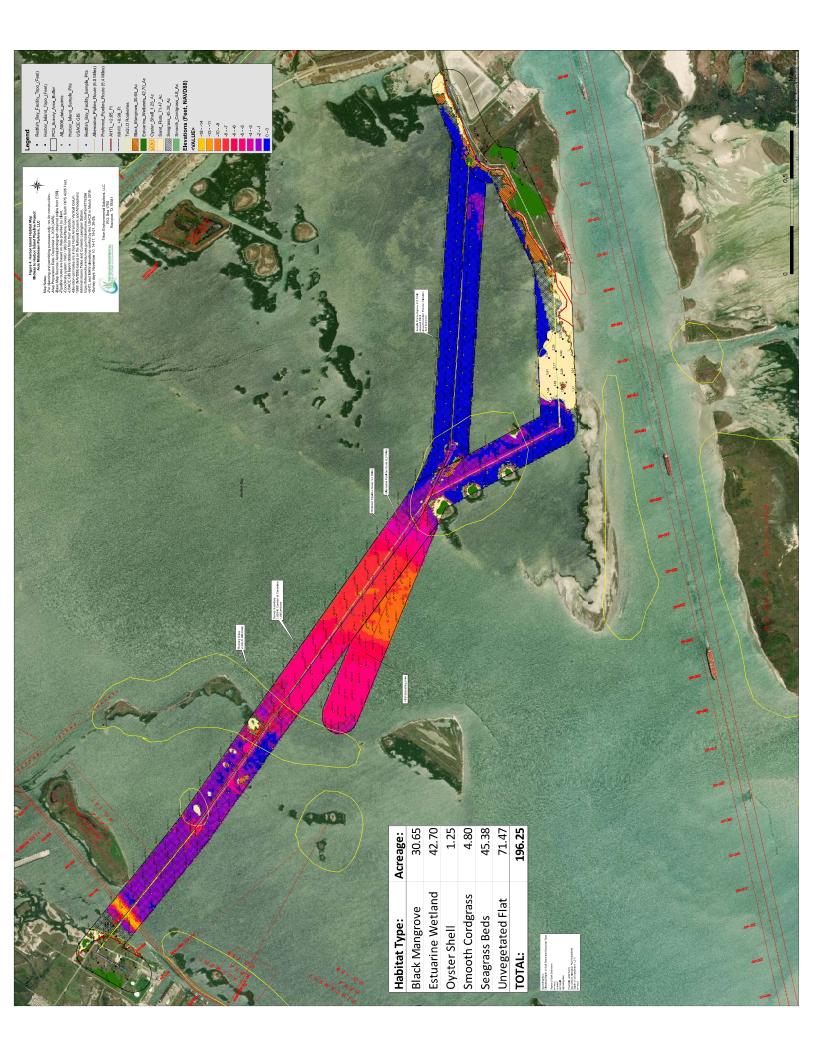
Tide and Currents , National Oceanic and Atmospheric Administration, 8775296 USS Lexington, Corpus Christi Bay, TX Station, <a href="https://tidesandcurrents.noaa.gov/waterlevels.html?id=8775296">https://tidesandcurrents.noaa.gov/waterlevels.html?id=8775296</a> [Accessed December 2018], Asheville, NC.

U.S. Army Corps of Engineers. 2010. "Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)", ed. Wakeley, J.S., Lichvar, R.W., and C.V. Noble. ERDC/EL TR-10-20, U.S. Army Engineer Research and Development Center, Vicksburg, MS.

# FIGURE 1 – Vicinity Map



# FIGURE 2 – Overview Map



# FIGURE 3 – Redfish Bay Facility Habitat Map

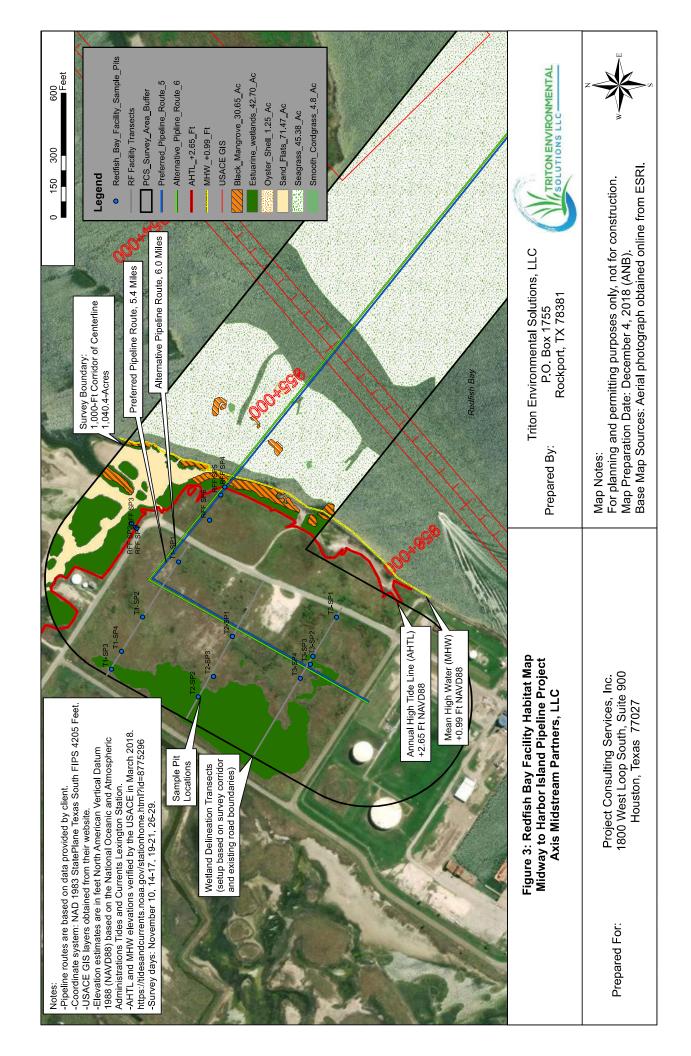
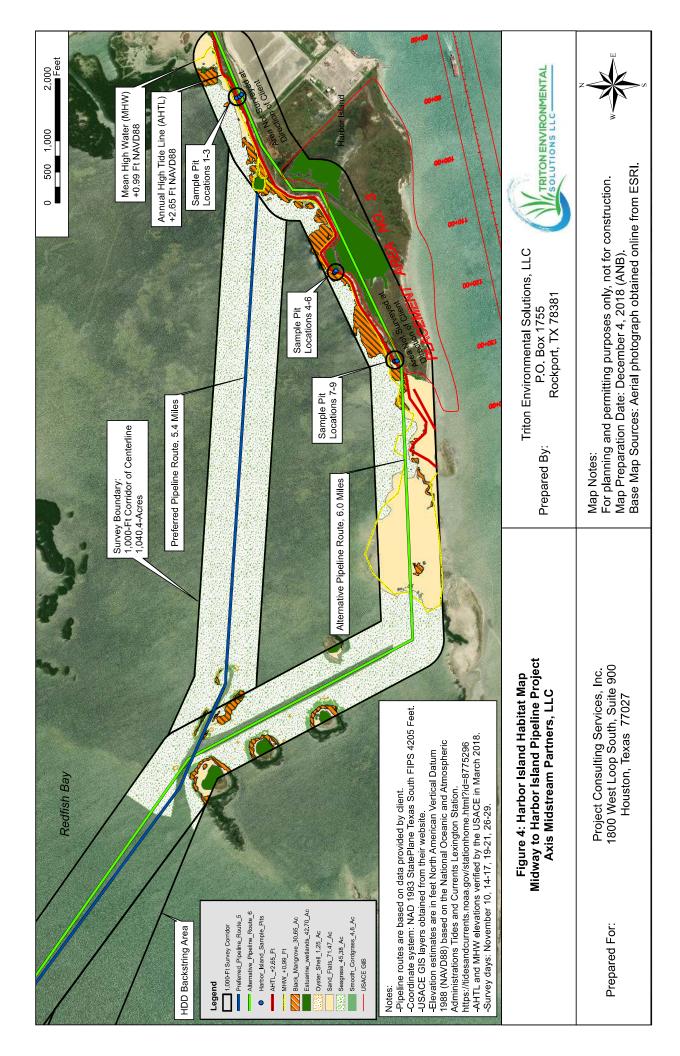


FIGURE 4 – Harbor Island Habitat Map



# APPENDIX A – Approved Survey Plan



## **Axis Midstream Ecological Survey Plan**

#### November 8, 2018

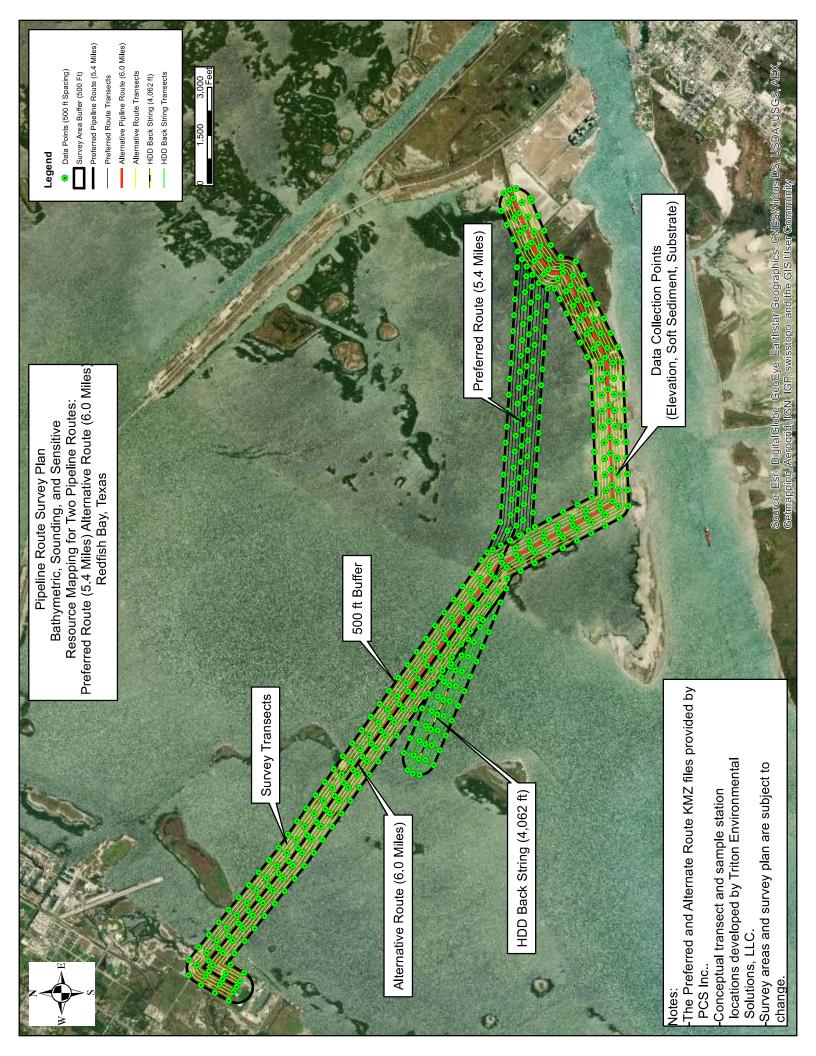
- Survey plan to be conducted in accordance with approved proposal dated September 26, 2018.
- Preferred route=5.4 miles; alternate route=6.0 miles.
- Survey plan developed based on Google files of the preferred and alternative alignments provided by Project Consulting Services, Inc.
- Triton will map elevations along the centerlines of each route and map the edge of sensitive resources (i.e., seagrasses, oyster reefs, wetlands, mangroves, etc.) within 500 feet of the preferred and alternate routes.
- If seagrasses are patchy within the 1,000-foot corridor, Triton will map individual patches to assure adequate baseline data is obtained.
- Triton will sample along the preferred and alternate routes on transects parallel to each centerline.
- The transects will be spaced 100-foot apart out to 500-feet from both sides of each centerline;
   or a 1,000-foot survey corridor for each route.
- Soundings will occur at 20-foot intervals.
- A Sonarmite echosounder will be employed to continually record bay bottom elevations at regular intervals (e.g., every 20 feet).
- Sample stations will be recorded every 500 feet on the centerline, 200-foot and 500-foot transects within each survey corridor. Elevations, substrate and depth of soft sediment will be recorded at these sample stations. This equates to 418 total data stations.
- If hard substrate is encountered by soundings, Triton will collect 6-inch diameter core samples from the bay bottom to determine if live reef, shell reef, shell hash or other shell is present.
- To determine the presence of seagrass, Triton will collect 6-inch diameter core samples and/or hand grab samples in waters less than 5-foot deep. If seagrasses are found, Triton will collect samples at 10-foot intervals on the transects containing seagrass.
- The boundaries of any seagrass beds and/or oyster reef present will be mapped within each 1,000-foot corridor.
- This survey methodology translates to approximately 78 total miles of survey area.
- Shorelines and land-based routes will be surveyed to include mapping of all habitats, including USACE jurisdictional areas, the annual high tide line (AHTL), and mean high water line (MHWL).
- Any bird rookeries identified within the survey areas will also be noted.
- To determine positions of various points, Triton will utilize a sub-centimeter and sub-meter Trimble RTK GPSs.
- Representative photos will be taken during the survey effort.





## Daily Record Keeping:

- Pre-Shift JSA and Safety Meeting
- Weather observations
- Tide fluctuations
- End of day progress
- Good housekeeping of equipment



# APPENDIX B – Photographic Documentation







Harbor Island, Intertidal Sand Flat



Harbor Island, Pit Sample Location & Representative Pit Sample

Harbor Island, Representative Uplands





Redfish Facility, Wetlands

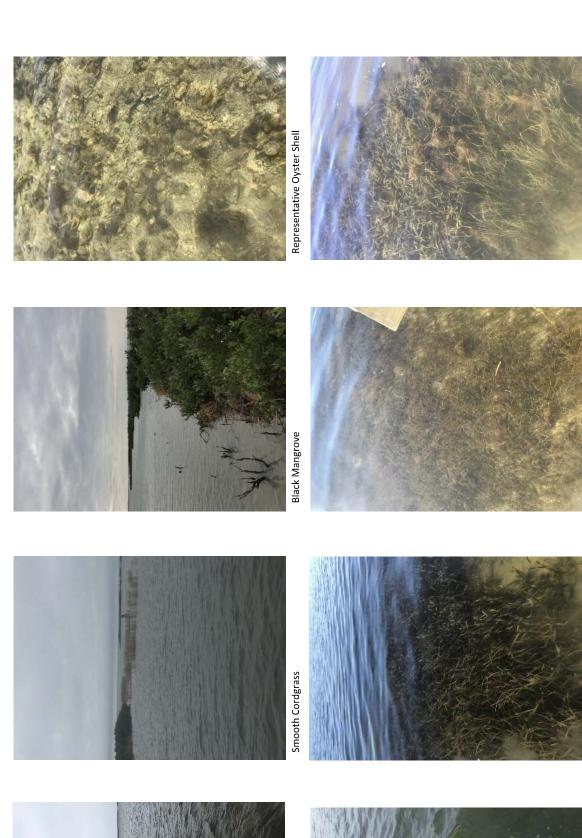


Redfish Facility, Delineation Zone-Upland, Boundary, Wetland

Redfish Facility, Representative Uplands







Representative Rookery Signage

Representative Seagrass Post Hole Grab

**Turtle and Shoal Seagrasses** 

Shoalgrass

**Turtle and Manatee Seagrasses** 

APPENDIX C – U.S. Army Corps of Engineers Wetland Determination Data Form-Atlantic and Gulf Coast Plain Region

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

Project/Site: Redfish Facility	Survey Area	City/C	ounty: Aransas Pass/S	an Patricio County	Sampling Date: November 28, 2018			
Applicant/Owner: Project Con	sulting Services, In	C.		State: TX	Sampling Point:T1-SP1			
Investigator(s): B.J. Hill		Section						
Landform (hillslope, terrace, etc					Slope (%): 1-2%			
Subregion (LRR or MLRA): ML				27.8769826766	Datum: WGS84			
Soil Map Unit Name: Ijam Soil					ation: Freshwater Emergent Wetland			
Are climatic / hydrologic condition	ons on the site typica	I for this time of year? Y						
Are Vegetation No , Soil N					resent? Yes X No			
Are Vegetation No Soil N	lo, or Hydrology _	No naturally problema	atic? (If needed,	explain any answer	rs in Remarks.)			
SUMMARY OF FINDING	S – Attach site	map showing san	pling point locati	ons, transects	, important features, etc.			
Hydrophytic Vegetation Prese	int? Yes	NoX						
Hydric Soil Present?		NoX	Is the Sampled Area		V			
Wetland Hydrology Present?	Yes	No X	within a Wetland?	Yes	NoX			
Remarks:								
Total rainfall in the six mor Service, the May-October (62%) above normal May- due to the dominance of u	rainfall total was 1 October rainfall for	.89 inches above the the survey area. Sar	ANNUAL rainfall tota mple Point T1-SP1 w	al for the survey a as determined to	area, and 12.38 inches be located within uplands			
HYDROLOGY								
Wetland Hydrology Indicato	rs:			Secondary Indica	tors (minimum of two required)			
Primary Indicators (minimum o	of one is required; ch	eck all that apply)		Surface Soil	Cracks (B6)			
Surface Water (A1) Aquatic Fauna (B13) Sparsely Vegetated Concave Surface (								
High Water Table (A2)  Marl Deposits (B15) (LRR U)  Drainage Patterns (B10)								
Saturation (A3) Hydrogen Sulfide Odor (C1) Moss Trim Lines (B16)								
Water Marks (B1)	(	Oxidized Rhizospheres a	long Living Roots (C3)	Dry-Season \	Water Table (C2)			
Sediment Deposits (B2)	F	Presence of Reduced Iro	n (C4)	Crayfish Burr	ows (C8)			
Drift Deposits (B3)	F	Recent Iron Reduction in	Tilled Soils (C6)	Saturation Vi	sible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)	7	Thin Muck Surface (C7)		Geomorphic	Position (D2)			
Iron Deposits (B5)	_ 0	Other (Explain in Remark	(s)	Shallow Aqui	tard (D3)			
Inundation Visible on Aeri	al Imagery (B7)			FAC-Neutral	Test (D5)			
Water-Stained Leaves (B	9)			Sphagnum m	noss (D8) (LRR T, U)			
Field Observations:								
Surface Water Present?	Yes No>	Depth (inches):	None					
Water Table Present?	Yes NoX	Depth (inches):	None					
Saturation Present? (includes capillary fringe)	Yes No _X	Depth (inches):	None Wetland	Hydrology Presen	t? Yes No _X_			
Describe Recorded Data (stre	am gauge, monitorin	g well, aerial photos, pre	vious inspections), if av	ailable:				
ArcGIS basemap.	50 NS							
Remarks:								
Wetland hydrology v	was not prese	nt at Sample Po	int T1-SP1.					
]								

(COETATION	/F: /	344-1	1.1	:		-14-
VEGETATION	(Five :	otrata) —	use	scientific	names or	plants.

EGETATION (Five Strata	a) – Use scientific na	ames of plar	nts.		Sampling Point:T1-SP1
Ν/Δ		Absolute [			Dominance Test worksheet:
Tree Stratum (Plot size: N/A 1.	200	% Cover		_Status_	Number of Dominant Species That Are OBL, FACW, or FAC:1 (A)
2					Total Number of Dominant
3					Species Across All Strata: 2 (B)
1					Develop of Developed Species
5					Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)
3					
		=	Total Cov	/er	Prevalence Index worksheet:
	50% of total cover:	20% of to	otal cover		Total % Cover of: Multiply by:
Sapling Stratum (Plot size: N/A					OBL species x 1 = 0
1					FACW species x 2 =80
2.					FAC species x 3 = 0
3.					FACU species 60 x 4 = 240
1.					UPL species0 x 5 =0
5					Column Totals:(A)(B)
5					Prevalence Index - B/A - 3.2
			Total Cov	 /er	Frevalence index - BA
	50% of total cover:	£			Hydrophytic Vegetation Indicators:
Shrub Stratum (Plot size: N/A	)	20 70 01 10	Jul GOVE	•	1 - Rapid Test for Hydrophytic Vegetation
7 3 3					2 - Dominance Test is >50%
1 2					3 - Prevalence Index is ≤3.0¹
					Problematic Hydrophytic Vegetation¹ (Explain)
3					
4					<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5				<del></del>	STATES THE STATES AND THE STATES AND THE STATES AND THE STATES OF THE STATES AND
6. <u> </u>		_902	T-1-1 O-		Definitions of Five Vegetation Strata:
	500/ 51 1 1	3	Total Cov		Tree – Woody plants, excluding woody vines,
	50% of total cover:	20% of to	otal cover	•	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
<u>Herb Stratum</u> (Plot size: <u>30 fl</u> <sub>1.</sub> Schizachyrium scoparium	)	50%	Yes	FACU	
Paspalum monostachyum		40%	Yes	FACW	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
Opuntia stricta		<del> 40                               </del>		FACU	than 3 in. (7.6 cm) DBH.
. Opuntia stricta			No	1700	
4		- Va			Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
ō				8) <del></del> 8).	The state of the s
S					Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
7					plants, except woody vines, less than approximately
B. <u>«</u>					3 ft (1 m) in height.
ə				·	Woody vine – All woody vines, regardless of height.
10					
11			ST ST W. 84		
		100% =			
	50% of total cover: 50°	<u>%</u> 20% of to	otal cover	: _20%_	
Woody Vine Stratum (Plot size:					
1					
2					
3					
4				nn	
5					Hydrophytic
		=	Total Cov	/er	Vegetation
	50% of total cover:	20% of to	otal cover		Present? Yes No _X
				(A)	

SOIL Sampling Point: T1-SP1

Depth	Matrix			x Feature		- 1	32237 Vi	minds of
inches) -3"	Color (moist) 10YR 4/2	<u>%</u>	Color (moist)	%	Type'	Loc²	Texture Loamy sand	Remarks
	01.5	100%	10) (D. 0 (0					
-18"	10YR 7/2	99%	10YR 6/8	1% 			Loamy sand	Also shell hash mixed in this laye
ydric Soil Histoso Histic E Black H Hydrog Stratifie Organic 5 cm M Muck P 1 cm M Deplete Thick D Coast F	Indicators: (Applied (A1)) pipedon (A2) pistic (A3) en Sulfide (A4) d Layers (A5) en Bodies (A6) (LRR Indicate (A7) (LRR Indicate (A9) (LRR P, T) d Below Dark Surface (A12) Prairie Redox (A16) (	P, T, U) RR P, T, U U) Ce (A11)	Redox Depre	rwise not elow Surfa urface (S9 ty Mineral ed Matrix ( ttrix (F3) Surface (F rk Surface essions (F -RR U) hric (F11) dese Mass ace (F13)	ed.) ce (S8) (L ) (LRR S, (F1) (LRR F2) 66) (F7) 8) (MLRA 15 es (F12) (LRR P, T	RR S, T, I T, U) O) 51) LRR O, P,	Indicators	PL=Pore Lining, M=Matrix. If or Problematic Hydric Soils <sup>3</sup> : Muck (A9) (LRR O) Muck (A10) (LRR S) Ided Vertic (F18) (outside MLRA 150A, Idea of Vertic (F18) (outside MLRA 150A, Idea of Vertic (F18) (F19) (LRR P, S, F19) Idea of Vertic (F18) (F19) (LRR P, S, F19) Idea of Vertic (F18) (ITR P, S, F19) Idea of Vertic (F19) (ITR P, S, F19) Idea of Vertic (F19) (ITR P, S, F19) Idea of Vertic (F19) (ITR P, S, F19) Idea of Vertic (ITR P) Id
_ Sandy ( _ Sandy (	Mucky Mineral (S1) ( Gleyed Matrix (S4) Redox (S5) d Matrix (S6)	(LRR O, S)	Delta Ochric Reduced Vel Piedmont Flo Anomalous B	rtic (F18) ( podplain S	<b>MLRA 15</b> oils (F19)	(MLRA 14	)	ess disturbed or problematic.
_ Dark Su	urface (S7) (LRR P,				, (,	,,,		<u> </u>
	Layer (if observed)	):						
Type: No	iches): None						Hydric Soil	Present? Yes No X
emarks:							Tiyane con	1103011: 103 100
	Hydric solls w support hydri		present at Sa	ample	Point i	1-SP1	since 1%	redox is not sufficient to

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

Project/Site: Redfish Facility Survey Area City/County: Arans	sas Pass/San Patricio County Sampling Date: November 28, 2018					
Applicant/Owner: Project Consulting Services, Inc.	State: TX Sampling Point: T1-SP2					
Investigator(s): B.J. Hill Section, Township,						
The state of the s	ve, convex, none): None Slope (%): 1-2%					
A POPPER OF THE PROPERTY OF THE POPPER OF TH	Long: _27.8774698934					
Soil Map Unit Name: Ijam Soils, Rarely Flooded	NWI classification: Freshwater Emergent Wetland					
Are climatic / hydrologic conditions on the site typical for this time of year? Yes N  Are Vegetation No_, Soil No_, or Hydrology No_ significantly disturbed?	loX (If no, explain in Remarks.)  Are "Normal Circumstances" present? YesX No					
SUMMARY OF FINDINGS – Attach site map showing sampling poir	If needed, explain any answers in Remarks.)  nt locations, transects, important features, etc.					
Y.						
Hydrophytic Vegetation Present? Yes X No Is the Samp	oled Area					
Hydric Soil Present?  Yes No _X  within a We	etland? Yes NoX					
Wetland Hydrology Present? Yes No _X	W 32 W W					
Remarks:						
Total rainfall in the six months (May-October) prior to the survey was 32.5 Service, the May-October rainfall total was 1.89 inches above the ANNUA inches (62%) above normal May-October rainfall for the survey area. Sar within uplands due to the lack of hydric soils and the lack of wetland hydr	AL rainfall total for the survey area, and 12.38 mple Point T1-SP2 was determined to be located					
HYDROLOGY	<u> </u>					
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)					
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)					
Surface Water (A1) Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)					
High Water Table (A2) Marl Deposits (B15) (LRR U) Drainage Patterns (B10) Saturation (A3) Hydrogen Sulfide Odor (C1) Moss Trim Lines (B16)						
Water Marks (B1)  Oxidized Rhizospheres along Living Re						
Sediment Deposits (B2)  Presence of Reduced Iron (C4)	Crayfish Burrows (C8)					
Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C						
Algal Mat or Crust (B4) Thin Muck Surface (C7)	Geomorphic Position (D2)					
Iron Deposits (B5) Other (Explain in Remarks)	Shallow Aquitard (D3)					
Inundation Visible on Aerial Imagery (B7)	FAC-Neutral Test (D5)					
Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T, U)					
Field Observations:	opinagram moso (20) (2101 1, 0)					
Surface Water Present? Yes No _X _ Depth (inches): None						
Water Table Present? Yes X No Depth (inches): 17" from surface						
Saturation Present? Yes X No Depth (inches): 13" from surface	Wetland Hydrology Present? Yes No _X					
(includes capillary fringe)	5 1557/ 10 10 10 11					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspecti	ions), if available:					
ArcGIS basemap.						
Remarks:						
Wetland hydrology was not present at Sample Point T1-SF	P2.					
,						

\_\_\_\_\_ = Total Cover

Vegetation

Present?

50% of total cover: \_\_\_\_\_ 20% of total cover: \_\_\_\_\_

EGETATION (Five Strata) – Use scier					Sampling	Point:	-SP2
ree Stratum (Plot size: N/A )	Absolute <u>% Cover</u>	Dominant Species?		Dominance Test works	heet:		
				Number of Dominant Spo That Are OBL, FACW, or		2	(A)
). 3				Total Number of Domina Species Across All Strate		2	(B)
I 3				Percent of Dominant Spe That Are OBL, FACW, or		100%	(A/B)
5		 = Total Cov		Prevalence Index work	sheet:		
50% of total cov	/er: 20% of			Total % Cover of:	N	fultiply by:	
Sapling Stratum (Plot size: N/A )	20 // 01	total cover		OBL species	x 1 =		
				FACW species	x 2 =		_
· 				FAC species	x 3 =		-8
· <u>-</u> 4				FACU species	x 4 =	·	21
·				UPL species	x 5 =		
5				Column Totals:	(A)	1	_ (B)
5	, co			Prevalence Index	= B/A =		_
	· · · · · · · · · · · · · · · · · · ·	= Total Cov		Hydrophytic Vegetation	n Indicator	s:	
00.5	/er: 20% of	total cover	:	1 - Rapid Test for Hy	ydrophytic \	√egetation	
Shrub Stratum (Plot size: 30 ft x 30 ft Schinus terebinthifolia	20%	Voo	EAC	✓ 2 - Dominance Test	is >50%		
			FAC_	3 - Prevalence Index	k is ≤3.0 <sup>1</sup>		
2.				Problematic Hydropl	hytic Veget	ation¹ (Expla	in)
3.							
1				<sup>1</sup> Indicators of hydric soil			must
5	<del></del>	-	-	be present, unless distur	constance were supplied		
S	20%			Definitions of Five Veg	etation Str	ata:	
5006		= Total Co		Tree - Woody plants, ex			
عن من من من المنطقة المنظمة ا <u>Herb Stratum</u> (Plot size:30 ft x 30 ft)	ver: <u>10%</u> 20% of	total cover		approximately 20 ft (6 m) (7.6 cm) or larger in dian			
Paspalum monostachyum	70%	Yes	FACW				
Andropogon glomeratus	10%	No	FACW	Sapling – Woody plants approximately 20 ft (6 m)			
Schizachyrium scoparium	10%	No	FACU	than 3 in. (7.6 cm) DBH.			
Ambrosia psilostachya	5%	No	FAC	Shrub – Woody plants, e	eveludina w	oody vines	
Borrichia frutescens	5%	No	OBL	approximately 3 to 20 ft (			
5	***			Herb - All herbaceous (r	on-woody)	nlante inclu	ıdina
				herbaceous vines, regard	Children and the state of the s		
7				plants, except woody vin	es, less tha	an approxima	tely
3				3 ft (1 m) in height.			
)				Woody vine - All woody	vines, rega	ardless of he	ight.
10				5			
1		Total Cov					
E00/ off-t-1	ver: _50%20% of						
	/er: 20% of	total cover	2070				
Noody Vine Stratum (Plot size: N/A	_)						
1							
2.				8			
3	No			8			
4			:::: <u> </u>				
5				Hydrophytic			

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

Hydrophytic vegetation was dominant at Sample Point T1-SP2.

Yes \_\_X \_\_ No \_\_\_\_\_

SOIL Sampling Point: T1-SP2

8" 10YR 4/1 100% Loamy sand	Depth	Matrix	%		x Feature:		1002	Taytura		Domorko	
### 10YR 7/1 98% 10YR 7/6 2% MS PL Loamy sand  ### 10YR 7/1 98% 10YR 10XR 10XR 10XR 10XR 10XR 10XR 10XR 10X	inches)  -8"	Color (moist) 10YR 4/1		Color (moist)		<u>Type</u>	Loc²	Texture Loamy sand	-	Remarks	
Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)  Histic Epipedon (A2)  Black Histic (A3)  Hydrogen Sulfide (A4)  Stratified Layers (A5)  Organic Bodies (A6) (LRR P, T, U)  Muck Presence (A8) (LRR P, T)  Muck Presence (A8) (LRR U)  1 cm Muck (A9) (LRR O)  Redox Depressions (F8)  Marl (F10) (LRR U)  Depleted Dark Surface (F1) (MLRA 151)  Thick Dark Surface (A12)  Coast Prairie Redox (A16) (MLRA 150A)  Polyvalue Below Surface (S8) (LRR S, T, U)  Loamy Gleyed Matrix (F3)  Loamy Mucky Mineral (S1) (LRR P, T, U)  Depleted Below Surface (S8) (LRR S, T, U)  Loamy Mucky Mineral (S1) (LRR P, T, U)  Depleted Below Surface (S8) (LRR S, T, U)  Loamy Mucky Mineral (S1) (LRR P, T, U)  Depleted Below Surface (S8) (LRR S, T, U)  Loamy Mucky Mineral (S1) (LRR O, S)  Delta Ochric (F17) (MLRA 151)  Indicators for Problematic Hydric Soils <sup>3</sup> :  In muck (A9) (LRR O, S)  In muck (A9) (LRR S, T, U)  And LRR S, T, U)  In muck (A10) (LRR O, P, T)  Mard (F10) (LRR U)  Depleted Dark Surface (A12)  Iron-Manganese Masses (F12) (LRR O, P, T)  Wetland hydrology must be present, unless disturbed or problematic.	3-18"	10YR 7/1	-12	10YR 7/6	2%	MS	PL	Loamy sand			
Sandy Redox (S5) — Piedmont Floodplain Soils (F19) (MLRA 149A) Stripped Matrix (S6) — Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)	ype: C=C /dric Soil  Histoso Histic E Black H Hydrog Stratifie Organic 5 cm M Muck P 1 cm M Deplete Thick D Coast F Sandy I Sandy I	Concentration, D=Deplet Indicators: (Applied I (A1) Expiped (A2) Expired (A3) Export (A5) Export (A5) Export (A5) Export (A6) (LRR Foucky Mineral (A7) (Lresence (A8) (LRR P, T) Export (A12) Export (A12) Export (A16) (Mucky Mineral (S1) (Gleyed Matrix (S4) Export (S4) Export (A12) Export (A12) Export (A13) Export (A14) Export (A15) Export (A1	P, T, U) RR P, T, U) See (A11)	=Reduced Matrix, Millers, unless othe Polyvalue Beal Thin Dark Sule Loamy Muck Loamy Gleyeal Depleted Maal Redox Dark Depleted Daal Redox Depreal Marl (F10) (Label Depleted Octobe Iron-Mangan Delta Ochrice Reduced Veled	S=Masked rwise note elow Surfa urface (S9) y Mineral ed Matrix ( trix (F3) Surface (F rk Surface essions (Fe -RR U) hric (F11) ese Massi ace (F13) ( (F17) (ML rtic (F18) ( podplain S	I Sand Graded.)  ce (S8) (L ) (LRR S, (F1) (LRR F2)  (MLRA 15 es (F12) (I (LRR P, T, RA 151) MLRA 150 oils (F19)	mins.  RR S, T, U T, U) OA, 150B) (MLRA 14	2Location: Indicators J) 1 cm M 2 cm M Reduc Piedm Anoma (MLF Red Pa Very S Other of unite	for Proble fuck (A9) (I fuck (A10) ed Vertic (F ont Floodpl alous Bright RA 153B) arent Mater challow Darl (Explain in eators of hyd land hydrol ess disturbe	matic Hydric  RR O) (LRR S) f18) (outside ain Soils (F19) Loamy Soils (ial (TF2) k Surface (TF2) Remarks) drophytic vegeogy must be p	Soils <sup>3</sup> :  MLRA 150A, ) (LRR P, S, (F20)  12)  station and resent,
	Depth (ir emarks:	nches): None						Hydric Soil	Present?	Yes	. No X
emarks:		myaric soils w	ere not	present at Sa	ampie i	~oint I	1-SP2				
marks:											
emarks:											

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

Project/Site: Redfish Facility Survey Area	City/County: Aransas Pass/San Patricio County Sampling Date: November 28, 2018
Applicant/Owner: Project Consulting Services, Inc.	State: TX Sampling Point: T1-SP3
Investigator(s): B.J. Hill	Section, Township, Range: N/A
	Local relief (concave, convex, none): Concave Slope (%): 2-3%
n protein an the first of the f	1579322098 Long: 27.8778903379 Datum: WGS84
Soil Map Unit Name: Ijam Soils, Rarely Flooded	NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of	
Are Vegetation No, Soil No, or Hydrology No significant	
Are Vegetation No , Soil No , or Hydrology No naturally	problematic? (If needed, explain any answers in Remarks.)
	ng sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present?	is the Sampled Area
Wetland Hydrology Present? Yes X No	within a Wetland? Yes X No No
Remarks:	
the May-October rainfall total was 1.89 inches above the AN normal May-October rainfall for the survey area. Sample Pol	rvey was 32.52-inches. According to NOAA's National Weather Service, INUAL rainfall total for the survey area, and 12.38 inches (62%) above int T1-SP3 was determined to be located within wetlands due to the cools and the presence of wetland hydrology at the sample plot.
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply	y) Surface Soil Cracks (B6)
Surface Water (A1) Aquatic Fauna (B	Sparsely Vegetated Concave Surface (B8)
X High Water Table (A2) Marl Deposits (B	15) (LRR U) Drainage Patterns (B10)
X Saturation (A3) Hydrogen Sulfide	e Odor (C1) Moss Trim Lines (B16)
[2] [3] [4] [4] [4] [4] [4] [4] [4] [4] [4] [4	pheres along Living Roots (C3) Dry-Season Water Table (C2)
Sediment Deposits (B2) Presence of Red	luced Iron (C4) Crayfish Burrows (C8)
1   1   1   1   1   1   1   1   1   1	uction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9)
X Algal Mat or Crust (B4) Thin Muck Surface	
Iron Deposits (B5) Other (Explain in	
Inundation Visible on Aerial Imagery (B7)	X FAC-Neutral Test (D5)
Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T, U)
Field Observations:	
Surface Water Present? Yes No _X Depth (inche	es): None
Water Table Present? Yes X No Depth (inche	ACPAREN 99
Saturation Present? Yes X No Depth (inche (includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial pho	otos, previous inspections), if available:
ArcGIS basemap.	, ,
Remarks:	
Wetland hydrology was present at Sample F	Point T1-SP3 due to the presence of a High Water
	e upper 12-inches of the soil profile, the presence of
Algal Crust (B4), the Geomorphic Position (I	
, ,	
landscape), and passing the FAC-Neutral To	ສອເ (ບປ <i>)</i> .

	Absolute	Dominant	Indicator	Dominance Test worksheet:
ree Stratum (Plot size: N/A )	% Cover	Species?	Status	Number of Dominant Species
×				That Are OBL, FACW, or FAC: 2 (A)
·				Total Niverbay of Dancin and
				Total Number of Dominant Species Across All Strata: 2 (B)
				Could not report before an action design and could be action and action action and action
				Percent of Dominant Species 100%
				That Are OBL, FACW, or FAC: (A/E
-				Prevalence Index worksheet:
500/ -54-4-1	Company of the Company			Total % Cover of: Multiply by:
50% of total cover:	20% or	total cover		OBL species x 1 =
apling Stratum (Plot size: N/A )				FACW species x 2 =
				FAC species x 3 =
<u> </u>				FACU species x 4 =
A				UPL species x 5 =
		,		
				Column Totals: (A) (B
·				Prevalence Index = B/A =
		= Total Co	/er	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of	total cover		1 - Rapid Test for Hydrophytic Vegetation
hrub Stratum (Plot size: N/A )			23. <del>0.</del>	✓ 2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.0 <sup>1</sup>
				Problematic Hydrophytic Vegetation¹ (Explain)
			· · · · · · ·	
·				Indicators of hydric soil and wetland hydrology must
		<del></del>	<del></del>	be present, unless disturbed or problematic.
÷		7 7 7 4000		Definitions of Five Vegetation Strata:
		= Total Co		Tree – Woody plants, excluding woody vines,
50% of total cover:	20% of	total cover		approximately 20 ft (6 m) or more in height and 3 in.
lerb Stratum (Plot size: 30 ft x 30 ft )		.,	EA 0\4/	(7.6 cm) or larger in diameter at breast height (DBH).
Sporobolus virginicus	50%	Yes	FACW	Sapling – Woody plants, excluding woody vines,
Distichlis littorale	20%	Yes	OBL	approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
Spartina spartinae	15%	<u>No</u>	OBL	than 3 iii. (7.6 cm) DBH.
Borrichia frutescens	10%	No	OBL	Shrub – Woody plants, excluding woody vines,
Limonium carolinianum	5%	No	OBL	approximately 3 to 20 ft (1 to 6 m) in height.
				Herb – All herbaceous (non-woody) plants, including
				herbaceous vines, regardless of size, and woody
				plants, except woody vines, less than approximately
				3 ft (1 m) in height.
				Woody vine - All woody vines, regardless of height.
0	<del>-</del>		· · · · · · · ·	
1	1009/			
5000	1/2	= Total Co		
50% of total cover:50	20% of	total cover	: <u></u>	
Voody Vine Stratum (Plot size: N/A )				
-		<del></del>		
	100			
				Hydrophytic
1		= Total Co	er	Hydrophytic Vegetation
50% of total cover:				Present? Yes X No No
ag m di idimi cavel	ZU 70 U	WILLIAM COVER		. 1

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

Hydrophytic vegetation was dominant at Sample Point T1-SP3.

Soil Sampling Point: T1-SP3

nenesi	Matrix	0/		x Feature		1.002	Taxtura	Domorko
inches) -2"	Color (moist) 10YR 5/2	100%	Color (moist)		Type <sup>1</sup>	Loc <sup>2</sup>	Texture  Loamy sand	Remarks
 ?-4"	White 8.5/N	100%		J. 10.			Clay	Distinct white clay layer
	60 St		10VD 6/9					Distilict write day layer
-18"	10YR 6/1	98%	10YR 6/8	2%	MS	PL	Loamy sand	
rdric Soil Histoso Histic E Black H Hydrog Stratifie Organic 5 cm M Muck P 1 cm M Deplete Thick D Coast F	Epipedon (A2) distic (A3) en Sulfide (A4) ed Layers (A5) c Bodies (A6) (LRR F ucky Mineral (A7) (L resence (A8) (LRR P, T) ed Below Dark Surface Pairie Redox (A16) (Mucky Mineral (S1) (	eable to all P, T, U) RR P, T, U) J) Re (A11) MLRA 150	LRRs, unless other Polyvalue Be Thin Dark Su Loamy Muck Loamy Gleye Depleted Mai Redox Dark S Depleted Dar Redox Depre Marl (F10) (L Depleted Oct Iron-Mangan Umbric Surfa	rwise note a low Surface (S9) by Mineral and Matrix (F3) Surface (Fak Surface assions (Fak U) thric (F11) asse Massione (F13) (K17) (ML	ed.) ce (S8) (L ) (LRR S, (F1) (LRR F2) 6) (F7) 8) (MLRA 13 es (F12) ( (LRR P, T	RR S, T, I T, U) O) 51) LRR O, P	Indicators   U)	PL=Pore Lining, M=Matrix.  for Problematic Hydric Soils <sup>3</sup> :  Muck (A9) (LRR O)  Muck (A10) (LRR S)  ed Vertic (F18) (outside MLRA 150A, ont Floodplain Soils (F19) (LRR P, S, 7  alous Bright Loamy Soils (F20)  RA 153B)  arent Material (TF2)  Shallow Dark Surface (TF12) (Explain in Remarks)  eators of hydrophytic vegetation and cland hydrology must be present, ess disturbed or problematic.
Sandy I Stripped Dark Su	Gleyed Matrix (S4) Redox (S5) d Matrix (S6) urface (S7) (LRR P, S		Reduced Ver Piedmont Flo Anomalous B	odplain S	oils (F19)	(MLRA 1		, 153D)
Туре:		:						<b>7</b> (2 ) X
D == +1- /.	nches): None						Hydric Soil	Present? Yes X No
emarks:			. T. O.D.O				r	
marks:		le Poin	t T1-SP3 met	criteria	a to be	classi	fied as Sa	ndy Redox (S5).

Project/Site: Redfish Facility	Survey Area		(	City/County:	Aransas Pass/S	San Patricio County	Sampling Date: No	ovember 28, 2018
Applicant/Owner: Project Cor	nsulting Service	s, Inc.				State: TX	Sampling Point:	T1-SP4
Investigator(s): B.J. Hill	-				nship, Range:			
Landform (hillslope, terrace, et	c.): Edge of Co						Slope	(%): 1-2%
Subregion (LRR or MLRA): M						27.8777532247		
Soil Map Unit Name: Ijam Soi			_ Lat			NWI classific		
Are climatic / hydrologic condit			this time of vea	r? Yes				
Are Vegetation No Soil						al Circumstances" p		No
Are Vegetation No_, Soil _	No , or Hydrolo	gy No	naturally prol	blematic?	(If needed,	, explain any answe	rs in Remarks.)	
SUMMARY OF FINDING								atures, etc.
Hydrophytic Vegetation Prese Hydric Soil Present? Wetland Hydrology Present? Remarks: Total rainfall in the six m Service, the May-Octobe inches (62%) above non within uplands due to the	Yes Yes nonths (May-O er rainfall total mal May-Octo	ctober) was 1.8	39 inches ab	survey was	NNUAL rainfa เ. Sample Po	es. According to all total for the sint T1-SP4 was	urvey area, and determined to b	al Weather 12.38
HYDROLOGY							-	
Wetland Hydrology Indicate	ors:					Secondary Indica	itors (minimum of to	wo required)
Primary Indicators (minimum		d: check a	all that apply)			Surface Soil	as William Malan	
Surface Water (A1)			tic Fauna (B13	)			getated Concave S	urface (B8)
High Water Table (A2)			Deposits (B15)			Drainage Pa		
Saturation (A3)	()-		ogen Sulfide O			Moss Trim L		
Water Marks (B1)			. 1774		ving Roots (C3)		Water Table (C2)	
Sediment Deposits (B2)			ence of Reduce			Crayfish Bur		
Drift Deposits (B3)	)3 <del>-</del>		nt Iron Reducti		Soils (C6)		isible on Aerial Ima	gery (C9)
Algal Mat or Crust (B4)	10-		Muck Surface				Position (D2)	37 (7
Iron Deposits (B5)	10.0		r (Explain in Re			Shallow Aqu		
Inundation Visible on Aer	1.0					FAC-Neutral		
Water-Stained Leaves (E	39)						noss (D8) (LRR T, I	u)
Field Observations:					T			
Surface Water Present?	Yes No	, X	Depth (inches):	None				
Water Table Present?			Depth (inches):		400			
Saturation Present?			Depth (inches):		Wetland	Hydrology Preser	nt? Yes	No_X_
(includes capillary fringe)	S X	G	1957 ST SEC	219	*	5 NATU	35 36	
Describe Recorded Data (street) ArcGIS basemap.	eam gauge, mon	toring we	ell, aerial photos	s, previous ir	ispections), if av	/ailable:		
Remarks:								
Wetland hydrology	was not nro	sent :	at Sample	Point T	1-SP4			
Wolland Hydrology	was not pro	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	at Campic	, i onit i	1 01 1.			

Sampling Point:	T1-SP4

N/A		Dominant		Dominance Test worksheet:
	% Cover	Species?	Status	Number of Dominant Species
1				That Are OBL, FACW, or FAC:1 (A)
2				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4				Percent of Dominant Species 500/
5				That Are OBL, FACW, or FAC:
6				Bulling
		= Total Cov	⁄er	Prevalence Index worksheet:
50% of total cover:	_ 20% of	total cover	:	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: N/A)				OBL species 0 x 1 = 0
1				FACW species
2				FAC species
3				FACU species 45 x 4 = 180
4				UPL species 0 x 5 = 0
5.				Column Totals:(A)(B)
6.				Prevalence Index = B/A =3.0
		= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover:	_ 20% of	total cover	•	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: N/A )				2 - Dominance Test is >50%
1				3 - Prevalence Index is ≤3.0 <sup>1</sup>
2.				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3.			2 <del></del> 2	Problematic Hydrophytic vegetation (Explain)
4.				1
5				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
			-	Definitions of Five Vegetation Strata:
6		 = Total Cov		
50% of total cover:				Tree – Woody plants, excluding woody vines,
50% of total cover: Herb Stratum (Plot size: 30 ft x 30 ft)	20% 01	total cover		approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
1. Andropogon glomeratus	45%	Yes	FACW	
- 100 <u>- 100 - 100</u>	45%	Yes	FACU	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
Schizachyrium scoparium     Conoclinium coelestinum	10%		FAC	than 3 in. (7.6 cm) DBH.
3. Conocimium coelestinum	10%	No	-FAC	
4				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
5				approximately a to 20 it (1 to 2 iii) iii neight.
6				Herb – All herbaceous (non-woody) plants, including
7				herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately
8				3 ft (1 m) in height.
9				Woody vine - All woody vines, regardless of height.
10				Woody vine - All woody vines, regardless of freight.
11				
	100%	= Total Cov	er er	
50% of total cover: 50%	_ 20% of	total cover	20%	
Woody Vine Stratum (Plot size: N/A )				
1				
2.			24	
3.				
4.			A	
5.				Hodge hodia
		= Total Cov	er	Hydrophytic   Vegetation
50% of total cover:	10			Present? Yes X No No
Remarks: (If observed, list morphological adaptations below		13141 00701		
	·			
Hydrophytic vegetation was dominant a	t Samp	ole Poir	nt T1-SF	P4.

SOIL Sampling Point: T1-SP4

	Matrix			x Features						
inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	-	Remarks	
I-8" ———	10YR 5/2	100%					Loamy sand	ki <del>.</del>		
-18"	10YR 6/2	_ <u>100%</u> .	-	33 <del></del>			Loamy sand	<b>%</b>		
	2						5	7		
	× <del></del>	<del>-</del> :					<del> </del>	89		
	8 *			i)).				)).		
	2 -		-	-				W-		
			-	-			-	-		
		90 90 90 100 100 100 100 100 100 100 100	Reduced Matrix, MS			ains.			ining, M=Mat	
		cable to all I	RRs, unless other						matic Hydric	Soils":
_ Histosol			Polyvalue Be							
	pipedon (A2) istic (A3)		Thin Dark Su Loamy Mucky					fluck (A10) ed Vertic (F		MLRA 150A,I
DC NOSS PORCOURSONS	en Sulfide (A4)		Loamy Gleye	a supplied to the second	177 FOR \$1,000 PERSONS	٠,	R. 31.34.53501.7501.000	CTOCKY BOOK MEDICALISMS	Property (Approximately)	) (LRR P, S, 1
	d Layers (A5)		Depleted Mat						Loamy Soils	
_ Organic	Bodies (A6) (LRR I	P, T, U)	Redox Dark S	Surface (F	6)		(MLF	RA 153B)		
	ucky Mineral (A7) <b>(L</b>		Depleted Dar		.3 .5			arent Mater		
- 10 mm	resence (A8) (LRR	29	Redox Depre		3)				Surface (TF	12)
	uck (A9) <b>(LRR P, T)</b> d Below Dark Surfa		Marl (F10) (L Depleted Och		/MIDA 4/	543	Other	Explain in I	Remarks)	
	ark Surface (A12)	ce (ATT)	Iron-Mangan				T) <sup>3</sup> India	ators of hyd	drophytic veg	etation and
II. DOS DOS MARIO APARA	rairie Redox (A16) (	MLRA 150A							ogy must be	
_ Sandy N	Mucky Mineral (S1)	(LRR O, S)	Delta Ochric				unle	ess disturbe	ed or problem	atic.
	Gleyed Matrix (S4)		Reduced Ver							
Note: 107	Redox (S5)		Piedmont Flo							
Stripped	d Matrix (S6)		Anomalous B	right Loar	ny Soils (I	-20) (MLR	A 149A, 153C	, 153D)		
	and the Management of the	C T III		476						
Dark Su	ırface (S7) (LRR P,			V78			**	20 29		
Dark Su lestrictive	ırface (S7) (LRR P, Layer (if observed		<del></del>	(78)			38	50: #F		
Dark Su estrictive Type: _ <sup>No</sup>	urface (S7) (LRR P, Layer (if observed		_				Hydric Soil	Present?	Yes	No. X
Dark Su estrictive Type: _ <sup>No</sup> Depth (in	ırface (S7) (LRR P, Layer (if observed						Hydric Soil	Present?	Yes	X
Dark Suestrictive Type: No Depth (inemarks:	urface (S7) (LRR P, Layer (if observed one ches): None	):	_	VIII		1-SP4	1 -	Present?	Yes	XX
Dark Suestrictive Type: No Depth (in	urface (S7) (LRR P, Layer (if observed one ches): None	):	  present at Sa	VIII		1-SP4	1 -	Present?	Yes	No X
Dark Suestrictive Type: No Depth (in	urface (S7) (LRR P, Layer (if observed one ches): None	):	_	VIII		1-SP4	1 -	Present?	Yes	NoX
Dark Suestrictive Type: No Depth (in	urface (S7) (LRR P, Layer (if observed one ches): None	):	_	VIII		1-SP4	1 -	Present?	Yes	No X
Dark Su estrictive Type: No Depth (in emarks:	urface (S7) (LRR P, Layer (if observed one ches): None	):	_	VIII		1-SP4	1 -	Present?	Yes	No X
Dark Suestrictive Type: No Depth (in	urface (S7) (LRR P, Layer (if observed one ches): None	):	_	VIII		1-SP4	1 -	Present?	Yes	No X
Dark Suestrictive Type: No Depth (in	urface (S7) (LRR P, Layer (if observed one ches): None	):	_	VIII		1-SP4	1 -	Present?	Yes	No X
Dark Suestrictive Type: No Depth (in	urface (S7) (LRR P, Layer (if observed one ches): None	):	_	VIII		1-SP4	1 -	Present?	Yes	No X
Dark Suestrictive Type: No Depth (inemarks:	urface (S7) (LRR P, Layer (if observed one ches): None	):	_	VIII		1-SP4	1 -	Present?	Yes	No X
Dark Suestrictive Type: No Depth (in	urface (S7) (LRR P, Layer (if observed one ches): None	):	_	VIII		1-SP4	1 -	Present?	Yes	No X
Dark Suestrictive Type: No Depth (in	urface (S7) (LRR P, Layer (if observed one ches): None	):	_	VIII		1-SP4	1 -	Present?	Yes	No X
Dark Suestrictive Type: No Depth (inemarks:	urface (S7) (LRR P, Layer (if observed one ches): None	):	_	VIII		-1-SP4	1 -	Present?	Yes	No X
Dark Suestrictive Type: No Depth (in	urface (S7) (LRR P, Layer (if observed one ches): None	):	_	VIII		1-SP4	1 -	Present?	Yes	No X
Dark Suestrictive Type: No Depth (in	urface (S7) (LRR P, Layer (if observed one ches): None	):	_	VIII		1-SP4	1 -	Present?	Yes	No X
Dark Su Bestrictive Type: No Depth (in Bemarks:	urface (S7) (LRR P, Layer (if observed one ches): None	):	_	VIII		1-SP4	1 -	Present?	Yes	No X
Dark Su Bestrictive Type: No Depth (in Bemarks:	urface (S7) (LRR P, Layer (if observed one ches): None	):	_	VIII		1-SP4	1 -	Present?	Yes	No X
Dark Su estrictive Type: No Depth (in emarks:	urface (S7) (LRR P, Layer (if observed one ches): None	):	_	VIII		1-SP4	1 -	Present?	Yes	No X
Dark Su estrictive Type: No Depth (in emarks:	urface (S7) (LRR P, Layer (if observed one ches): None	):	_	VIII		1-SP4	1 -	Present?	Yes	No X
Dark Suestrictive Type: No Depth (inemarks:	urface (S7) (LRR P, Layer (if observed one ches): None	):	_	VIII		1-SP4	1 -	Present?	Yes	No X
Dark Suestrictive Type: No Depth (in	urface (S7) (LRR P, Layer (if observed one ches): None	):	_	VIII		1-SP4	1 -	Present?	Yes	No X
Dark Suestrictive Type: No Depth (in	urface (S7) (LRR P, Layer (if observed one ches): None	):	_	VIII		1-SP4	1 -	Present?	Yes	No X

Project/Site: Redfish Facility	Survey Area	City/C	County: Aransas Pass/S	an Patricio County	Sampling Date: November 28, 2018	
Applicant/Owner: Project Con	sulting Services, Ir	nc.		State: TX	Sampling Point: T2-SP1	
Investigator(s): B.J. Hill		Section			manner (Charles of Charleson)	
Landform (hillslope, terrace, etc					Slope (%): 1-2%	
Subregion (LRR or MLRA): ML				27.8762804683	Datum: WGS84	
Soil Map Unit Name: Ijam Soil		Cut.		NWI classifica		
Are climatic / hydrologic condition	ons on the site typica	al for this time of year? Y	'esNo_X	(If no, explain in Re	emarks.)	
Are Vegetation No Soil N					oresent? Yes X No	
Are Vegetation No Soil N	lo, or Hydrology _	No naturally problem	atic? (If needed,	explain any answer	rs in Remarks.)	
SUMMARY OF FINDING	S – Attach site	map showing san	npling point locati	ons, transects,	, important features, etc.	
Hydrophytic Vegetation Prese	int? Ves	No_X				
Hydric Soil Present?		NoX	Is the Sampled Area		~	
Wetland Hydrology Present?	Yes	No X	within a Wetland?	Yes	NoX	
Remarks:						
Total rainfall in the six mor Service, the May-October (62%) above normal May- due to the dominance of u	rainfall total was 1 October rainfall fo	1.89 inches above the r the survey area. Sai	ANNUAL rainfall tota mple Point T2-SP1 w	al for the survey a vas determined to	area, and 12.38 inches be located within uplands	
HYDROLOGY					-	
Wetland Hydrology Indicato	rs:			Secondary Indicat	tors (minimum of two required)	
Primary Indicators (minimum	of one is required; ch	eck all that apply)		Surface Soil (	Cracks (B6)	
Surface Water (A1)	32	Aquatic Fauna (B13)		Sparsely Veg	getated Concave Surface (B8)	
High Water Table (A2)		Marl Deposits (B15) (LR	R U)	Drainage Pat		
Saturation (A3)		Hydrogen Sulfide Odor (		Moss Trim Lines (B16)		
Water Marks (B1)		Oxidized Rhizospheres a			Water Table (C2)	
Sediment Deposits (B2)		Presence of Reduced Iro		Crayfish Burn		
Drift Deposits (B3)		Recent Iron Reduction in	Tilled Soils (C6)	Saturation Vi	sible on Aerial Imagery (C9)	
Algal Mat or Crust (B4)		Thin Muck Surface (C7)		Geomorphic I	Position (D2)	
Iron Deposits (B5)	8 <del></del>	Other (Explain in Remarl	(s)	Shallow Aquit	tard (D3)	
Inundation Visible on Aer	al Imagery (B7)			FAC-Neutral	Test (D5)	
Water-Stained Leaves (B	9)			Sphagnum m	noss (D8) (LRR T, U)	
Field Observations:						
Surface Water Present?	Yes No	X Depth (inches):	None			
Water Table Present?	Yes No	Depth (inches):	None			
Saturation Present? (includes capillary fringe)			None Wetland	Hydrology Presen	t? Yes No _X	
Describe Recorded Data (stre	am gauge, monitorir	ng well, aerial photos, pre	evious inspections), if av	ailable:		
ArcGIS basemap.						
Remarks:						
Wetland hydrology v	was not prese	ent at Sample Po	oint T2-SP1.			
, ,	•	•				

VEGETATION	(Five Strata) -	Use scientific names of	nlants
VEGETATION	(i ive Otiata) -	OSC SCICITUMO HATTICS OF	piarito.

NI/A	Absolute	Dominant	Indicator	Dominance Test worksheet:
ree <u>Stratum</u> (Plot size: <u>N/A</u> )	% Cover	Species?		Number of Dominant Species That Are OBL, FACW, or FAC:1 (A)
			s	( )
-				Total Number of Dominant Species Across All Strate: 4 (P)
				Species Across All Strata: 4 (B)
				Percent of Dominant Species That Are OBL FACILITY or FAC: 25%
				That Are OBL, FACW, or FAC: (A/B)
9				Prevalence Index worksheet:
	at the best of the second	= Total Cov		Total % Cover of: Multiply by:
50% of total cover:	20% of	total cover:		OBL species x 1 =
apling Stratum (Plot size: N/A )				FACW species x 2 =
				FAC species x 3 =
7				
S				FACU species x 4 =
				UPL species x 5 =
				Column Totals: (A) (B)
				Prevalence Index = B/A =
		= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of	total cover:		1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size:30 ft x 30 ft)			3.8	2 - Dominance Test is >50%
Schinus terebinthifolia	20%	Yes	FAC	3 - Prevalence Index is ≤3.01
	_			Problematic Hydrophytic Vegetation (Explain)
s,				<u> </u>
l,			3	Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
)	<del>-</del>		-	
Š				Definitions of Five Vegetation Strata:
		= Total Cov		Tree – Woody plants, excluding woody vines,
50% of total cover: <u>1</u> H <u>erb Stratum</u> (Plot size: <u>30 ft x 30 ft</u> )	<u>0%</u> 20% of	total cover:	_4%	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
Schizachyrium scoparium	25%	Yes	FACU	Sanling Woody plants evaluding weedy vince
Bothriochloa ischaemum	25%	Yes	NI NI	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
Cenchrus ciliaris	25%	Yes	UPL	than 3 in. (7.6 cm) DBH.
	10%	No	FAC	Shrub – Woody plants, excluding woody vines,
	1070	110	<del></del>	Siliub – Woody plants, excluding woody vines,
	10%	No	FΔCII	approximately 3 to 20 ft (1 to 6 m) in height.
Baptisia alba	10%	No	FACU	
Baptisia alba			FACU	Herb – All herbaceous (non-woody) plants, including
Baptisia alba				
Baptisia alba				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody
Baptisia alba				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.
Baptisia alba				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately
Baptisia alba				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.
Baptisia alba  S.				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.
Ambrosia psilostachya  Baptisia alba	95% =	= Total Cov	er	Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.
5. Baptisia alba 5	95% =	= Total Cov	er	Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.
Baptisia alba  5.  6.  7.  8.  9.  1.  1.  50% of total cover: 48  Woody Vine Stratum (Plot size: N/A )	95% s	= Total Cov total cover:	er	Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.
Baptisia alba  5.  6.  7.  9.  1.  1.  50% of total cover: 48  Voody Vine Stratum (Plot size: N/A )	95% <u>20% of</u>	= Total Cov total cover:	er	Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.
Baptisia alba		= Total Cov total cover:	er	Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.
5. Baptisia alba 5	95% = 3% 20% of	= Total Cov total cover:	er	Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.
Baptisia alba  5.  5.  6.  7.  9.  1.  50% of total cover: 48  Voody Vine Stratum (Plot size: N/A )  6.  6.  6.	95% = 3% 20% of	= Total Cov total cover:	er	Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.
Baptisia alba  50% of total cover: 48  Voody Vine Stratum (Plot size: N/A )	95% = 20% of	= Total Cov total cover:	er	Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  Woody vine – All woody vines, regardless of height.  Hydrophytic
5. Baptisia alba 5		= Total Cov total cover:	er	Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately 3 ft (1 m) in height.  Woody vine – All woody vines, regardless of height.

Soil Sampling Point: T2-SP1

	cription: (Describe	to the depth				or confirm	the absence	of indicate	ors.)	
Depth (inches)	Matrix Color (moist)	<u></u> %	Redo Color (moist)	x Feature: %	s Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-18"	10YR 7/2	100%	COIOI (IIIOISI)		1100		Loamy sand		rtomants	
				-0.02						
	S <del>S</del>			- 0						
Ç.	7 <u>2</u>	107 <u> </u>					<u> </u>	1		
	N <del> </del>	5). <u> </u>		100	<del></del>		-			
	() <del> </del>			-100						
	n <u>-</u>							3		
THE RESERVE THE PARTY OF THE PA	oncentration, D=Dep	90 90 Yes 100 Yes				ains.			ining, M=Matı	
Hydric Soil	Indicators: (Applic	able to all Li	RRs, unless othe	rwise note	ed.)		Indicators	for Proble	matic Hydric	Soils <sup>3</sup> :
Histoso			Polyvalue Be							
	pipedon (A2)		Thin Dark Su					luck (A10)		
70 NOS 1000 00 00 00 00 00 00 00 00 00 00 00 0	istic (A3)		Loamy Muck	n extra a secretar seminar anno extrem	1011 TON 100 SOUTH	(0)				MLRA 150A,B)
10 PGQ 45-055500000	en Sulfide (A4)		Loamy Gleye		F2)					(F20)
	d Layers (A5) : Bodies (A6) <b>(LRR P</b>	T ID	Depleted Ma Redox Dark		(6)		The second second	ious Bright (A 153B)	Loamy Soils	(F20)
<del></del>	ucky Mineral (A7) (LF		Depleted Da					arent Mater	ial (TF2)	
	resence (A8) (LRR U		Redox Depre						k Surface (TF	12)
ES ST. CO.	uck (A9) (LRR P, T)	ń	Marl (F10) (L		-,/-		19 3 B	Explain in		/
	d Below Dark Surfac	e (A11)	Depleted Oc		(MLRA 1	51)		8 8		
Thick D	ark Surface (A12)		Iron-Mangan	iese Mass	es (F12) <b>(</b>	LRR O, P,	T) <sup>3</sup> Indica	ators of hy	drophytic vege	etation and
The second control of	rairie Redox (A16) <b>(N</b>	ACT RESIDENCE IN THE SECOND PROPERTY.	ANALYST THE STATE OF THE ANALYST STATE	Source Court Court Section		, U)		The state of the s	ogy must be p	
20 1000 CONTRACTOR STATE OF THE PARTY OF THE	Mucky Mineral (S1) (L	.RR O, S)	Delta Ochric					ess disturbe	ed or problema	atic.
	Gleyed Matrix (S4)		Reduced Ve							
Section 10	Redox (S5)		Piedmont Flo					453D)		
	d Matrix (S6) urface (S7) <b>(LRR P, S</b>	T 11)	Anomaious i	Bright Loar	ny Solis (	F20) (WILK	A 149A, 153C,	1530)		
	Layer (if observed):						T			
Type: N	151 11									
	iches): None						Hydric Soil	Procent?	Yes	No X
Remarks:			_				Tiyane oon	rieseile:	163	
	Hydric soils w	ere not n	resent at Sa	amnla l	Point T	7_SP1				
	riyano sons w	cic not p	nesent at of	ampic i	Ollit	2-01 1	•			

Project/Site: Redfish Facility Survey Area	City/County: Aransas Pass/San Patricio County Sampling Date: November 28, 2018
Applicant/Owner: Project Consulting Services, Inc.	State: TX Sampling Point: T2-SP2
	Section, Township, Range: N/A
	Local relief (concave, convex, none): Concave Slope (%): 2-3%
Subregion (LRR or MLRA): MLRA 150B in LRR T Lat: -97.15	09 05 00 PM
Soil Map Unit Name: Ijam Soils, Rarely Flooded	NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes No _X (If no, explain in Remarks.)
Are Vegetation No, Soil No, or Hydrology No significantly	y disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally pr	
	g sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No	
Hydric Soil Present? Yes X No	is the Sampled Area
Wetland Hydrology Present? Yes X No	Within a Wetland?   Tes No
Remarks:	
the May-October rainfall total was 1.89 inches above the ANN normal May-October rainfall for the survey area. Sample Poin dominance of hydrophytic vegetation, the presence of hydric samples are survey area.	rey was 32.52-inches. According to NOAA's National Weather Service, IUAL rainfall total for the survey area, and 12.38 inches (62%) above at T2-SP2 was determined to be located within wetlands due to the soils and the presence of wetland hydrology at the sample plot.
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	
Surface Water (A1) Aquatic Fauna (B1	
X High Water Table (A2) Marl Deposits (B1:	
X Saturation (A3) Hydrogen Sulfide	
	neres along Living Roots (C3) Dry-Season Water Table (C2)
Sediment Deposits (B2) Presence of Redu	— · · · · · · · · · · · · · · · · · · ·
Drift Deposits (B3) Recent Iron Reduct Algal Mat or Crust (B4) Thin Muck Surface	ction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9)  E (C7) X Geomorphic Position (D2)
Iron Deposits (B5) Other (Explain in F	
Inundation Visible on Aerial Imagery (B7)	X FAC-Neutral Test (D5)
Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T, U)
Field Observations:	
Surface Water Present? Yes No _X Depth (inches	s): None
Water Table Present? Yes X No Depth (inches	MASTON 99
Saturation Present? Yes X No Depth (inches (includes capillary fringe)	s): Wetland Hydrology Present? YesX No
Describe Recorded Data (stream gauge, monitoring well, aerial phot	os, previous inspections), if available:
ArcGIS basemap.	
Remarks:	
Wetland hydrology was present at Sample Po	oint T2-SP2 due to the presence of a High Water
Table (A2) and soil Saturation (A3) within the	upper 12-inches of the soil profile, a Sparsely
, , , , , , , , , , , , , , , , , , , ,	g the sample plot, the Geomorphic Position (D2) of
1 = -	ape), and passing the FAC-Neutral Test (D5).
and sample plot flower persons of the landoot	

		in the second	1991 19
VEGETATION	(Five Strata) –	Use scientific names of	plants.

<b>EGETATION (Five Strata)</b> – Use scientific na	ames of plants.		Sampling Point:
N/A	Absolute Dominan		Dominance Test worksheet:
T <u>ree Stratum</u> (Plot size: <u>N/A</u> ) 1)	% Cover Species	? Status	Number of Dominant Species That Are OBL, FACW, or FAC:1 (A)
2			Total Number of Dominant
3			Species Across All Strata:1 (B)
4			Percent of Dominant Species 1000/
5		-11	That Are OBL, FACW, or FAC: 100% (A/B
5. <sub></sub>	<del>-</del> :		Prevalence Index worksheet:
	= Total Co	over	Total % Cover of: Multiply by:
50% of total cover:	20% of total cove	er:	OBL species x 1 =
Sapling Stratum (Plot size: N/A )			FACW species x 2 =
ř <u> </u>		-0.0	FAC species x 2 =
2		-11	FACU species x 4 =
3			UPL species x 5 =
l			177
5			Column Totals: (A) (B)
5		-0	Prevalence Index = B/A =
	= Total Co		Hydrophytic Vegetation Indicators:
50% of total cover:	20% of total cove	er:	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: N/A )			✓ 2 - Dominance Test is >50%
1		-001	3 - Prevalence Index is ≤3.0¹
2.			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3			Troblemane rigarephysic regulation (Explain)
4			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
5			be present, unless disturbed or problematic.
6.	- 12	=300 =	Definitions of Five Vegetation Strata:
320°	= Total Co	over	
50% of total cover: Herb Stratum (Plot size:30 ft x 30 ft)			Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
1 Distichlis littorale	80% Yes	OBL	
Sarcocornia ambigua	2% No	OBL	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
3.			than 3 in. (7.6 cm) DBH.
o	-		Shrub Woody plants evaluding weedy vines
ł		-	Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
D			The state of the s
S			Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
7.			plants, except woody vines, less than approximately
3.		- ( <del></del>	3 ft (1 m) in height.
). 			Woody vine – All woody vines, regardless of height.
10	—:::		
11	0001	-111	
	82% = Total Co		
50% of total cover: <u>41</u>	20% of total cove	er: <u>16%</u>	
Woody Vine Stratum (Plot size: N/A )			
1 <u>-</u>			
2		-787	
3		-00	
4		<b>-</b> 40%	
5			Hydrophytic
	= Total Co	over	Vegetation
50% of total cover:	20% of total cove	r.	Present? Yes X No No
30 % Of total cover.	20 /0 01 total cove	'l.	

SOIL Sampling Point: T2-SP2

Depth inches)	Matrix Color (moist)	%	Color (moist)	<u>Features</u> % Type	Loc <sup>2</sup>	Texture	Remarks
i-6"	10YR 4/1	100%	Color (moloc)			Loamy sand	romano
6-18"	10YR 6/1	100%		· · · · · · · · · · · · · · · · · · ·		Loamy sand	
ydric Soil  Histoso Histic E Black H Hydrog Stratifie Organic 5 cm M Muck P 1 cm M Deplete Thick D Coast F Sandy I Sandy I	Indicators: (Applia I (A1) pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) E Bodies (A6) (LRR I ucky Mineral (A7) (L resence (A8) (LRR P, T) d Below Dark Surfar ark Surface (A12) Prairie Redox (A16) (Mucky Mineral (S1) ( Gleyed Matrix (S4) Redox (S5)	cable to all I P, T, U) RR P, T, U) U) ce (A11)	Thin Dark Sur Loamy Mucky Loamy Gleyed Depleted Matr Redox Dark S Depleted Dark Redox Depres Marl (F10) (LF Depleted Och Iron-Mangane Umbric Surfac Delta Ochric ( Reduced Vert Piedmont Floc	wise noted.) low Surface (S8) rface (S9) (LRR 5 r Mineral (F1) (LR d Matrix (F2) rix (F3) Surface (F6) k Surface (F7) ssions (F8) RR U) ric (F11) (MLRA ese Masses (F12 ce (F13) (LRR P, (F17) (MLRA 151 tic (F18) (MLRA 6 odplain Soils (F1)	(LRR S, T, U S, T, U) RR O) (LRR O, P, T, U) ) 150A, 150B) 9) (MLRA 14	Indicators for  J) 1 cm Muck     2 cm Muck     Reduced V     Piedmont F     Anomalous     (MLRA 1     Red Paren     Very Shallo     Other (Exp  T)	(A10) (LRR S)  /ertic (F18) (outside MLRA 150A,E Floodplain Soils (F19) (LRR P, S, T s Bright Loamy Soils (F20)  53B)  t Material (TF2)  ow Dark Surface (TF12)  lain in Remarks)  s of hydrophytic vegetation and hydrology must be present, disturbed or problematic.
Stripped	Redox (S5) d Matrix (S6) ırface (S7) <b>(LRR P,</b>	S, T, U)	The second secon			19A) RA 149A, 153C, 153	BD)
	Layer (if observed)						
Type: No Depth (in	ches): None		<u> </u>			Hydric Soil Pre	sent? Yes X No
	Hydric soils w Sample Point			the domina	nce of o	nly obligate v	vetland vegetation at

Project/Site: Redfish Facility	Survey Area	City/Cour	nty: Aransas Pass/S	an Patricio County	Sampling Date: Nov	ember 28, 2018			
Applicant/Owner: Project Con		- 17 SEP	3.0		Sampling Point:				
Investigator(s): B.J. Hill		Section,							
					Slope (	%): 1-2%			
	Landform (hillslope, terrace, etc.): Edge of Coastal Prairie Local relief (concave, convex, none): None Slope (%): 1-2% Subregion (LRR or MLRA): MLRA 150B in LRR T Lat: -97.1580569478 Long: 27.8765362267 Datum: WGS84								
Soil Map Unit Name: Ijam Soil		. Lu	Market 1 (1)		ation: Freshwater Eme	160			
		Main Minner of Control Von				9-11-11-11-11			
Are climatic / hydrologic condition  Are VegetationNo, SoilN					emarks.) resent? Yes <u>X</u>	_ No			
Are Vegetation No Soil N	lo_, or Hydrology No_	_ naturally problematic	(If needed,	explain any answer	rs in Remarks.)				
SUMMARY OF FINDING	S – Attach site ma	p showing sampl	ing point location	ons, transects,	, important feat	ures, etc.			
Hydrophytic Vegetation Prese	nt? Yes X	No							
Hydric Soil Present?	Yes X	No.	the Sampled Area		Y				
Wetland Hydrology Present?	Yes	No X	thin a Wetland?	Yes	NoX				
Remarks:									
Total rainfall in the six mo Service, the May-Octobe inches (62%) above norn within uplands due to the	r rainfall total was 1.8 nal May-October rain	39 inches above the fall for the	e ANNUAL rainfa rea. Sample Poir	Il total for the su	ırvey area, and 1	2.38			
HYDROLOGY									
Wetland Hydrology Indicato	rs:			Secondary Indicat	tors (minimum of two	required)			
Primary Indicators (minimum o	of one is required; check a	all that apply)		Surface Soil (	Cracks (B6)	5-72 F 300			
Surface Water (A1)		tic Fauna (B13)		Sparsely Vegetated Concave Surface (B8)					
High Water Table (A2)		Deposits (B15) (LRR U)	)	Drainage Patterns (B10)					
Saturation (A3)		ogen Sulfide Odor (C1)		Moss Trim Lir					
Water Marks (B1)	\$200 miles   100 m	zed Rhizospheres along			Nater Table (C2)				
Sediment Deposits (B2)		ence of Reduced Iron (C		Crayfish Burn					
Drift Deposits (B3)		nt Iron Reduction in Till			sible on Aerial Image	ery (C9)			
Algal Mat or Crust (B4)		Muck Surface (C7)		Geomorphic I		CSCCCCC COLUMNS			
Iron Deposits (B5)		(Explain in Remarks)		Shallow Aquit					
Inundation Visible on Aeri				FAC-Neutral					
Water-Stained Leaves (B				Sphagnum m	ioss (D8) (LRR T, U)				
Field Observations:									
Surface Water Present?	Yes No _X [	Depth (inches):Nor	ne						
Water Table Present?	Yes No _X_ [	Depth (inches): Nor	ne						
Saturation Present? (includes capillary fringe)	Yes No _X_ [	Depth (inches):Nor	Wetland I	Hydrology Presen	t? Yes N	4o _X			
Describe Recorded Data (stre	am gauge, monitoring we	II, aerial photos, previou	us inspections), if ava	ailable:					
ArcGIS basemap.									
Remarks:									
Wetland hydrology v	was not present a	at Sample Poin	t T2-SP3.						
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,								

/EGETATION	(Five Strata) -	Llea eciantific	names of plants.
VEGETATION	(Five Strata) -	OSE SCIENTING	names of plants.

EGETATION (Five Strata) – Use scientific nam	ics of pic	arito.		Sampling Point:
ree Stratum (Plot size: N/A )		Dominant		Dominance Test worksheet:
-		Species?	Status	Number of Dominant Species That Are ORL FACW or FAC: 2 (A)
*				That Are OBL, FACW, or FAC: (A)
· <u>-</u>			9- <u>-</u> -	Total Number of Dominant
·				Species Across All Strata: 3 (B)
. <u> </u>				Devent of Deminent Species
i				Percent of Dominant Species That Are OBL, FACW, or FAC:  (A/B)
5				That 746 6 BE, 17.6 W, 61 17.6 (7.8 B)
**		= Total Co		Prevalence Index worksheet:
50% of total cover:	000000000000000000000000000000000000000			Total % Cover of: Multiply by:
50% of total cover:	_ 20 70 01	total cover		OBL species x 1 =
Sapling Stratum (Plot size: N/A )				FACW species x 2 =
·				FAC species x 3 =
· -				FACU species x 4 =
·				
·				UPL species x 5 =
i				Column Totals: (A) (B)
				Provolence Index = D/A =
		= Total Cov		Prevalence Index = B/A =
50% of total cover:	2			Hydrophytic Vegetation Indicators:
	20% 01	total cover	•	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: N/A )				2 - Dominance Test is >50%
l				3 - Prevalence Index is ≤3.01
<u> </u>				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3			01 <u></u>	87 97 9263 9894 90 50 40
1				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
3.			8. <del></del> 8	Definitions of Five Vegetation Strata:
		= Total Co		
500/ of total anyon:				Tree – Woody plants, excluding woody vines,
50% of total cover: <u>Herb Stratum</u> (Plot size: <u>30 ft x 30 ft</u> )	20 70 01	total cover	•	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
	60%	Yes	FACW	
Paspalum monostachyum				Sapling – Woody plants, excluding woody vines,
Andropogon glomeratus	20%	Yes	FACW	approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
Schizachyrium scoparium	20%	<u>Yes</u>	FACU	than 5 m. (7.6 cm) DBH.
ł				Shrub – Woody plants, excluding woody vines,
5.				approximately 3 to 20 ft (1 to 6 m) in height.
3.			8) <del>.</del>	Herb – All herbaceous (non-woody) plants, including
				herbaceous vines, regardless of size, and woody
·				plants, except woody vines, less than approximately
B	<del></del>			3 ft (1 m) in height.
)			-	Woody vine - All woody vines, regardless of height.
0				
1				
	100% :	= Total Cov	/er	
50% of total cover: 50%	20% of	total cover	20%	
Noody Vine Stratum (Plot size: N/A )			a	
l				
2.				
B				
1			01 <u></u>	
5.				Hydrophytic
		= Total Cov	/er	Vegetation
				Present? Yes X No No
50% of total cover:	20% of	total cover	:	rieseitt: ies No

Soil Sampling Point: T2-SP3

pe: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.  Thick Soll Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)	Depth inches)	Matrix Color (moist)	%	Color (moist)	x Features %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
pe: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.  dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) Histosol (A1)	-8"			(ITIOISE)		1700		19	Komarks
Histosol (A1) Polyvalue Below Surface (S8) (LRR S, T, U) 1 cm Muck (A9) (LRR O) Histic Epipedon (A2) Thin Dark Surface (S9) (LRR S, T, U) 2 cm Muck (A10) (LRR S) Black Histic (A3) Loamy Mucky Mineral (F1) (LRR O) Hydrogen Sulfide (A4) Loamy Gleyed Matrix (F2) Peledmont Floodplain Soils (F19) (LRR P, S, T)  Stratified Layers (A5) Depleted Matrix (F3) Anomalous Bright Loamy Soils (F20) Muck Presence (A8) (LRR P, T, U) Depleted Dark Surface (F6) (MLRA 153B)  To cm Muck (A9) (LRR P, T) Depleted Dark Surface (F7) Red Perent Material (TF2)  Muck Presence (A8) (LRR P, T) Depleted Open Sulface (F7) Peledmont Floodplain Soils (F19) (LRR P)  Depleted Below Dark Surface (A11) Depleted Open Surface (F7) Sulfow Dark Surface (F7) Perent (Explain in Remarks)  Depleted Below Dark Surface (A12) Iron-Manganese Masses (F12) (LRR O, P, T) Wetland Hydrology must be present, Sandy Mucky Mineral (S1) (LRR O, S) Delta Ochric (F17) (MLRA 151) Unbric Surface (F18) (MLRA 150A) Unbric Surface (F19) (MLRA 150A) Unbric Surface (F19) (MLRA 150B)  Sandy Redox (S5) Delta Ochric (F18) (MLRA 150A, 150B)  Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 149A)  Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)  Dark Surface (S7) (LRR P, S, T, U)  Strictitve Layer (If observed):  Type: None  Depth (inches): None  Depth (inches): None  Soils at Sample Point T1-SP2 met the criteria to be classified as both Sandy Redox (S5),	3-18"	10YR 6/2	98%	10YR 7/6	2%	MS	PL	Loamy sand	
Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)  Dark Surface (S7) (LRR P, S, T, U)  Strictive Layer (if observed):  Type: None	dric Soil Histosol Histic E Black H Hydroge Stratifier Organic 5 cm Mi Muck Pr 1 cm Mi Deplete Thick De Coast P Sandy M	Indicators: (Applic (A1) pipedon (A2) istic (A3) en Sulfide (A4) d Layers (A5) Bodies (A6) (LRR P Licky Mineral (A7) (LF resence (A8) (LRR U Lick (A9) (LRR P, T) d Below Dark Surfac ark Surface (A12) rairie Redox (A16) (M Licky Mineral (S1) (LICK) Licky Mineral (S1) (LICK)	able to all , T, U) RR P, T, U) e (A11)	LRRs, unless other  Polyvalue Be Thin Dark Su Loamy Mucky Loamy Gleye Depleted Mal Redox Dark S Depleted Dar Redox Depre Marl (F10) (L Depleted Oct Iron-Mangane Umbric Surfa Delta Ochric Reduced Ver	wise note face (S9) y Mineral ( d Matrix (I rix (F3) Surface (F k Surface ssions (F6 RR U) nric (F11) ese Masse ce (F13) ( (F17) (ML tic (F18) (	ed.) ce (S8) (L (LRR S, (F1) (LRR F2) 6) (F7) 3) (MLRA 15 es (F12) (I LRR P, T, RA 151) MLRA 15	RR S, T, I T, U) O) S1) LRR O, P U)	Indicators  U) 1 cm M 2 cm M Reduce Piedmo Anoma (MLF Red Pa Very S Other (	for Problematic Hydric Soils <sup>3</sup> :  fluck (A9) (LRR O) fluck (A10) (LRR S) ed Vertic (F18) (outside MLRA 150A,I ont Floodplain Soils (F19) (LRR P, S, T llous Bright Loamy Soils (F20) RA 153B) arent Material (TF2) hallow Dark Surface (TF12) (Explain in Remarks) ators of hydrophytic vegetation and land hydrology must be present,
Type: None  Depth (inches): None  Marks:  Soils at Sample Point T1-SP2 met the criteria to be classified as both Sandy Redox (S5),	Sandy F Stripped Dark Su	Redox (S5) I Matrix (S6) rface (S7) (LRR P, S		Piedmont Flo	odplain S	oils (F19)	(MLRA 1	49A)	, 153D)
Soils at Sample Point T1-SP2 met the criteria to be classified as both Sandy Redox (S5),	Type: No	one						Hydric Soil	Present? Yes X No
	,	•			the cri	teria to	be cla	assified as	both Sandy Redox (S5),

Project/Site: Redfish Facility	Survey Area	City/C	County: Aransas Pass/S	an Patricio County	Sampling Date: November 2	8, 2018	
Applicant/Owner: Project Con	sulting Services, I	nc.		State: TX	Sampling Point:T3-	SP1	
Investigator(s): B.J. Hill		Section					
Landform (hillslope, terrace, etc					Slope (%): _1	-2%	
Subregion (LRR or MLRA): ML				27.8748978948	Datum: WO		
Soil Map Unit Name: Ijam Soil			145 Code 14 500 C	NWI classifica	50 A C. (1997) A C. (1997)		
Are climatic / hydrologic condition	ons on the site typica	al for this time of year? Y	'es No _X	(If no, explain in Re	emarks.)		
Are Vegetation No Soil N	lo, or Hydrology_	No significantly distur	bed? Are "Norma	al Circumstances" p	resent? Yes X No		
Are Vegetation No Soil N	lo, or Hydrology _	No naturally problema	atic? (If needed,	explain any answer	s in Remarks.)		
SUMMARY OF FINDING	S – Attach site	map showing san	npling point locati	ons, transects,	, important features	s, etc.	
Hydrophytic Vegetation Prese	int? Yes	No_X					
Hydric Soil Present?		NoX	Is the Sampled Area	-	<b>V</b>		
Wetland Hydrology Present?	Yes	No X	within a Wetland?	Yes	NoX		
Remarks:							
Total rainfall in the six mor Service, the May-October (62%) above normal May- due to the dominance of u	rainfall total was 1 October rainfall fo	1.89 inches above the r the survey area. Sai	ANNUAL rainfall tota mple Point T3-SP1 w	al for the survey a as determined to	area, and 12.38 inches be located within upla		
HYDROLOGY							
Wetland Hydrology Indicato	rs:			Secondary Indicat	tors (minimum of two requ	uired)	
Primary Indicators (minimum	of one is required; ch	neck all that apply)		Surface Soil 0	Cracks (B6)		
Surface Water (A1)	10 <u></u>	Aquatic Fauna (B13)		Sparsely Veg	ely Vegetated Concave Surface (B8)		
High Water Table (A2)		Marl Deposits (B15) (LRI	R U)	Drainage Patterns (B10)			
Saturation (A3)		Hydrogen Sulfide Odor (6		Moss Trim Lir			
Water Marks (B1)		Oxidized Rhizospheres a	along Living Roots (C3)	Dry-Season \	Water Table (C2)		
Sediment Deposits (B2)		Presence of Reduced Iro	on (C4)	Crayfish Burr	ows (C8)		
Drift Deposits (B3)		Recent Iron Reduction in	Tilled Soils (C6)	Saturation Vis	sible on Aerial Imagery (C	9)	
Algal Mat or Crust (B4)		Thin Muck Surface (C7)		Geomorphic I	Position (D2)		
Iron Deposits (B5)	2 <del></del>	Other (Explain in Remark	ks)	Shallow Aquit	tard (D3)		
Inundation Visible on Aer	ial Imagery (B7)			FAC-Neutral	Test (D5)		
Water-Stained Leaves (B	9)			Sphagnum m	oss (D8) (LRR T, U)		
Field Observations:							
Surface Water Present?	Yes No	X Depth (inches):	None				
Water Table Present?	Yes No	X Depth (inches):	None				
Saturation Present?			None Wetland	Hydrology Presen	t? Yes No _	<u>X</u>	
(includes capillary fringe)  Describe Recorded Data (stre	am gauge, monitorir	ng well, aerial photos, pre	evious inspections), if av	ailable:			
ArcGIS basemap.	33-,	.g, p	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				
Remarks:							
Wetland hydrology v	was not prese	ent at Sample Po	oint T3-SP1.				
, ,	•	•					

N/A	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: N/A )	% Cover	Species?	<u>Status</u>	Number of Dominant Species
1				That Are OBL, FACW, or FAC: 2 (A)
2				Total Number of Dominant
3				Species Across All Strata: 4 (B)
4			-	
5.			365:	Percent of Dominant Species That Are OBL, FACW, or FAC:  50% (A/B)
6				That Ale OBE, I AGW, OF IAC (A/B)
			——	Prevalence Index worksheet:
50% of total cover:				Total % Cover of: Multiply by:
	20% 01	total cover		OBL species10 x 1 =10
Sapling Stratum (Plot size: N/A )				FACW species 50 x 2 = 100
1				FAC species 25 x 3 = 75
2				FACU species 95 x 4 = 380
3				- 05
4				OPL species x5 =
5				Column Totals:(A)(B)
6				Prevalence Index = B/A =3.19
		= Total Co	ver	it and the second secon
50% of total cover:				Hydrophytic Vegetation Indicators:
Shrub Stratum (Plot size: 30 ft x 30 ft )				1 - Rapid Test for Hydrophytic Vegetation
Cobinus terobinthifolia	10%	Yes	FAC	2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.01
2				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3				
4				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
5				be present, unless disturbed or problematic.
6				Definitions of Five Vegetation Strata:
	10%	= Total Co	ver	Tree – Woody plants, excluding woody vines,
50% of total cover: 5%	20% of	total cover	: 2%	approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 30 ft x 30 ft )				(7.6 cm) or larger in diameter at breast height (DBH).
1. Spartina patens	50%	Yes	FACW	Sapling – Woody plants, excluding woody vines,
2. Schizachyrium scoparium	20%	Yes	FACU	approximately 20 ft (6 m) or more in height and less
3. Ambrosia psilostachya	15%	Yes	FAC	than 3 in. (7.6 cm) DBH.
4 Borrichia frutescens	10%	No	OBL	Church Micado planta avaluation consideration
	5%		NI	Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
5. Bothriochloa ischaemum		No	<u>INI</u>	
6				Herb – All herbaceous (non-woody) plants, including
7				herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately
8				3 ft (1 m) in height.
9				W 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
10				Woody vine – All woody vines, regardless of height.
11.			· · · · · · · · · · · · · · · · · · ·	
	100% :	= Total Co	ver	
50% of total cover: _50%		total cover		
30% of total cover	_ 20% 01	total cover		
Woody Vine Stratum (Plot size: 30 ft x 30 ft 1 Rubus trivialis	75%	Voo	FACU	
·· <del>·</del>		Yes	TACO	
2				
3				
4	·	7	30% <u></u>	
5				Hydrophytic
	75% :	= Total Co	ver	Vegetation
50% of total cover:38%				Present?
Remarks: (If observed, list morphological adaptations below	- STORM NOT THE	8678366 SUP SUP	100 M	
Transaction Specifical morphological adaptations below	n ).			
Hydrophytic vegetation was not domina	ant at S	ample	Point T	3-SP1.
,				

SOIL Sampling Point: T3-SP1

epth	Matrix			x Features			rance to			
nches)	Color (moist)		Color (moist)	%	<u>Type'</u>	Loc	<u>Texture</u>		Remarks	
18"	10YR 5/2	100%					Sandy Clay Loam	Shell hash	n also present	t in soil profil
	-									
	K 5									
								S.		
no: C=C	concentration, D=Dep	lotion DM=	Paduaad Matrix MS		Sond Cr		2l postion	DI =Doro Li	ining, M=Matı	riv
1000000	Indicators: (Application)	70 PO 70 TO TO TO TO				aii 13.			matic Hydric	
Histosol			Polyvalue Be			RR S, T, U		luck (A9) <b>(L</b>		
	pipedon (A2)		Thin Dark Su					luck (A10) (		
	listic (A3)		Loamy Mucky			0)			18) (outside	
	en Sulfide (A4) d Layers (A5)		Loamy Gleye Depleted Mai		F2)		201 Descriptions		ain Soils (F19 Loamy Soils	
	Bodies (A6) (LRR P	, T, U)	Redox Dark S	100 O 100 O 100 O	6)		The second of th	RA 153B)		(. ==)
5 cm Mr	ucky Mineral (A7) <b>(LF</b>	RR P, T, U)	Depleted Dar	k Surface	(F7)		Red Pa	arent Materi	al (TF2)	
	resence (A8) (LRR U	)	Redox Depre		3)				Surface (TF	12)
	uck (A9) <b>(LRR P, T)</b> d Below Dark Surface	o (A11)	Marl (F10) (L		/MIDA 44	:4 \	Other	(Explain in F	Remarks)	
	ark Surface (A12)	e (ATT)	Depleted Oct Iron-Mangan				T) <sup>3</sup> India	ators of hyd	drophytic vege	etation and
	Prairie Redox (A16) (N	/ILRA 150A)					200.000.000.000		ogy must be p	
Sandy N	Mucky Mineral (S1) (L	RR O, S)	Delta Ochric				unle	ess disturbe	d or problem	atic.
	Gleyed Matrix (S4)		Reduced Ver							
	Redox (S5)		Piedmont Flo					450D)		
04-1						-∠U) (IVILK	A 149A, 153U	153DI		
	d Matrix (S6)	T 10	Anomalous B	angni Loai	ily oolis (i			,,		
Dark Su	d Matrix (S6) urface (S7) (LRR P, S Layer (if observed):		Anomalous B	origini Loai	ily oolis (i					
Dark Su	urface (S7) (LRR P, S Layer (if observed):		Alomaious B	STIGHT LOAI	iny dolla (i			, 1002,		
Dark Su strictive Type: No	urface (S7) (LRR P, S Layer (if observed):		Allohialous E	night Eoai	ny dona (i		Hydric Soil	26 H	Yes	X_
Dark Su strictive Type: No Depth (in	urface (S7) (LRR P, S Layer (if observed): one		Allollalous E	night Eoai	ny dolla (i		28 2	26 H	Yes	X
Dark Su strictive Γγρε: No Depth (in narks:	urface (S7) (LRR P, S Layer (if observed): one			V90		= a	Hydric Soil	26 H	Yes	_ No_X
Dark Su strictive Γγρε: No Depth (in narks:	urface (S7) (LRR P, S Layer (if observed): one uches): None			V90		= a	Hydric Soil	26 H	Yes	NoX
Dark Su strictive Γγρε: No Depth (in narks:	urface (S7) (LRR P, S Layer (if observed): one uches): None			V90		= a	Hydric Soil	26 H	Yes	NoX
Dark Su strictive Γγρε: No Depth (in narks:	urface (S7) (LRR P, S Layer (if observed): one uches): None			V90		= a	Hydric Soil	26 H	Yes	NoX
Dark Su strictive Γγρε: No Depth (in narks:	urface (S7) (LRR P, S Layer (if observed): one uches): None			V90		= a	Hydric Soil	26 H	Yes	No X
Dark Su strictive Γγρε: No Depth (in narks:	urface (S7) (LRR P, S Layer (if observed): one uches): None			V90		= a	Hydric Soil	26 H	Yes	_ No <u>X</u>
Dark Su strictive Γγρε: No Depth (in narks:	urface (S7) (LRR P, S Layer (if observed): one uches): None			V90		= a	Hydric Soil	26 H	Yes	X
Dark Su strictive Γγρε: No Depth (in narks:	urface (S7) (LRR P, S Layer (if observed): one uches): None			V90		= a	Hydric Soil	26 H	Yes	NoX
Dark Su strictive Γγρε: No Depth (in narks:	urface (S7) (LRR P, S Layer (if observed): one uches): None			V90		= a	Hydric Soil	26 H	Yes	_ No <u>X</u>
Dark Su strictive Γγρε: No Depth (in narks:	urface (S7) (LRR P, S Layer (if observed): one uches): None			V90		= a	Hydric Soil	26 H	Yes	_ No <u>X</u>
Dark Su strictive Γγρε: No Depth (in narks:	urface (S7) (LRR P, S Layer (if observed): one uches): None			V90		= a	Hydric Soil	26 H	Yes	No X
Dark Sustrictive Type: No Depth (in	urface (S7) (LRR P, S Layer (if observed): one uches): None					= a	Hydric Soil	26 H	Yes	_ No_X
Dark Sustrictive Type: No Depth (in	urface (S7) (LRR P, S Layer (if observed): one uches): None					= a	Hydric Soil	26. PI	Yes	_ No <u>X</u>
Dark Sustrictive Type: No Depth (in	urface (S7) (LRR P, S Layer (if observed): one uches): None					= a	Hydric Soil	26. PI	Yes	No X
Dark Sustrictive Type: No Depth (in	urface (S7) (LRR P, S Layer (if observed): one uches): None					= a	Hydric Soil	26. PI	Yes	No_X
Dark Sustrictive Type: No Depth (in	urface (S7) (LRR P, S Layer (if observed): one uches): None					= a	Hydric Soil	26. PI	Yes	No_X
Dark Sustrictive Type: No Depth (in	urface (S7) (LRR P, S Layer (if observed): one uches): None					= a	Hydric Soil	26. PI	Yes	No_X
Dark Sustrictive Type: No Depth (in	urface (S7) (LRR P, S Layer (if observed): one uches): None					= a	Hydric Soil	26. PI	Yes	No X
Dark Sustrictive Type: No Depth (in	urface (S7) (LRR P, S Layer (if observed): one uches): None					= a	Hydric Soil	26. PI	Yes	No_X
Dark Sustrictive Type: No Depth (in	urface (S7) (LRR P, S Layer (if observed): one uches): None					= 0	Hydric Soil	26. PI	Yes	No_X

Project/Site: Redfish Facility Survey Area	City/County: Aransas Pass/San Patricio County Sampling Date: November 28, 2018
Applicant/Owner: Project Consulting Services, Inc.	State: TX Sampling Point: T3-SP2
	Section, Township, Range: N/A
	Local relief (concave, convex, none): Concave Slope (%): 2-3%
Subregion (LRR or MLRA): MLRA 150B in LRR T Lat: -97.15	50 C C C C C C C C C C C C C C C C C C C
Soil Map Unit Name: Ijam Soils, Rarely Flooded	NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of ye	ear? Yes No X (If no, explain in Remarks.)
Are Vegetation No, Soil No, or Hydrology No significantly	/ disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturally pro	
	g sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No	
Hydric Soil Present? Yes X No	is the Sampled Area
Wetland Hydrology Present? Yes X No	Within a Wetland? Tes No
Remarks:	
the May-October rainfall total was 1.89 inches above the ANN normal May-October rainfall for the survey area. Sample Poin dominance of hydrophytic vegetation, the presence of hydric s	rey was 32.52-inches. According to NOAA's National Weather Service, IUAL rainfall total for the survey area, and 12.38 inches (62%) above at T3-SP2 was determined to be located within wetlands due to the soils and the presence of wetland hydrology at the sample plot.
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	70 Oct 1985 West Control (1985 W
Surface Water (A1) Aquatic Fauna (B1	
X High Water Table (A2) Marl Deposits (B15	
X Saturation (A3) Hydrogen Sulfide (	
10 The same of the	neres along Living Roots (C3) Dry-Season Water Table (C2)
Sediment Deposits (B2) Presence of Reduction Drift Deposits (B3) Recent Iron Reduction	ced Iron (C4) Crayfish Burrows (C8) ction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Thin Muck Surface	사용하다 보다 하는 것이 아니라 보다 하는 것이 되었다. 그는 그 사용을 하는 사용을 하는 것이 없는 것이다. 그 것이 없는 것이다. 그 것이 없는 것이었다면 없는 것이었다면 없는 것이었다면 없는 것이었다면 없는 것이었다면 없어요. 그런데 없는 것이 없는 것이 없는 것이었다면 없는 것이었다면 없는 것이었다면 없어요. 그런데 없는 것이 없는 것이었다면 없어요. 그런데 없어요. 그
Iron Deposits (B5) Other (Explain in F	
Inundation Visible on Aerial Imagery (B7)	X FAC-Neutral Test (D5)
X Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T, U)
Field Observations:	
Surface Water Present? Yes No _X Depth (inches	s): None
Water Table Present? Yes X No Depth (inches	6" from surface
Saturation Present? Yes X No Depth (inches (includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photo	os, previous inspections), if available:
ArcGIS basemap.	
Remarks:	
Wetland hydrology was present at Sample Po	oint T3-SP2 due to the presence of a High Water
Table (A2) and soil Saturation (A3) within the	upper 12-inches of the soil profile, the presence of
Water-Stained Leaves (B9) within the sample	e plot, the Geomorphic Position (D2) of the sample
plot (lower portions of the landscape), and pa	

		in the second	1991 19
VEGETATION	(Five Strata) –	Use scientific names of	plants.

<b>EGETATION (Five Strata)</b> – Use scientific nam	es of pla	ants.		Sampling Point: T3-SP2
T. Control N/A		Dominant		Dominance Test worksheet:
1				Number of Dominant Species That Are OBL, FACW, or FAC:5 (A)
2				Total Number of Dominant Species Across All Strata:6 (B)
4 5				Percent of Dominant Species That Are OBL, FACW, or FAC:  (A/B)
5				
		= Total Cov	er	Prevalence Index worksheet:
50% of total cover:	20% of	total cover:		Total % Cover of: Multiply by:
Sapling Stratum (Plot size: N/A )				OBL species x 1 =
1				FACW species x 2 =
2				FAC species x 3 =
3				FACU species x 4 =
<b>1</b>			-	UPL species x 5 =
5				Column Totals: (A) (B)
5				Prevalence Index = B/A =
		= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover:	_ 20% of	total cover:		1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 30 ft x 30 ft )				✓ 2 - Dominance Test is >50%
1. Prosopis glandulosa	5%	Yes	FACU	3 - Prevalence Index is ≤3.01
2. Baccharis halimifolia	5%	Yes	FAC_	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
Schinus terebinthifolia	5%	Yes	FAC_	
4				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
5	_	<del></del> ()		be present, unless disturbed or problematic.
6	450/			Definitions of Five Vegetation Strata:
00/		= Total Cov		Tree – Woody plants, excluding woody vines,
50% of total cover: 8% <u>Herb Stratum</u> (Plot size: 30 ft x 30 ft )	20% of	total cover:	3%	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
1. Spartina spartinae	40%	Yes	OBL	Sapling – Woody plants, excluding woody vines,
Borrichia frutescens	20%	Yes	OBL	approximately 20 ft (6 m) or more in height and less
Sporobolus virginicus	20%	Yes	FACW	than 3 in. (7.6 cm) DBH.
Limonium carolinianum	10%	No	OBL	Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
5. 	-	•		Herb – All herbaceous (non-woody) plants, including
				herbaceous vines, regardless of size, and woody
7				plants, except woody vines, less than approximately 3 ft (1 m) in height.
9				Woody vine - All woody vines, regardless of height.
10		<del></del> -		viola vinia vini viola vinia v
11				
		= Total Cov		
50% of total cover: 45%	_ 20% of	total cover:	18%	
Woody Vine Stratum (Plot size: N/A )				
1			_	
2				
3				
4				
5				Hydrophytic
		= Total Cov		Vegetation
50% of total cover:	20% of	total cover:		Present? Yes X No No

SOIL Sampling Point: T3-SP2

naha-\	Matrix	0/		<u>Features</u>		10-2	Tayt	Domester
inches) -8"	Color (moist) 10YR 5/2	100%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture Loamy sand	Remarks
3-12"	10YR 5/2	98%	10YR 7/6		PL		Loamy sand	
	60 <del>50</del>			-			<del> </del>	
2-18"	10YR 6/2	98%	10YR 7/6	MS	PL		Sandy clay loam	
ydric Soil Histosc Histic E Black H Hydrog Stratifie Organic 5 cm M Muck P 1 cm M Deplete Thick D Coast F	Indicators: (Applic	eable to all P, T, U) RR P, T, U J) Re (A11) MLRA 150.	Redox Depre Marl (F10) (L Depleted Och Iron-Mangane	wise note flow Surface (S9) f Mineral ( d Matrix ( rix (F3) Surface (F k Surface ssions (F6 RR U) hric (F11) ese Massice (F13) (	ed.) ce (S8) (L ) (LRR S, (F1) (LRR F2) 66) (F7) 8) (MLRA 15 es (F12) (I	RR S, T, I T, U) O)	Indicators for  Indicators for Indic	PL=Pore Lining, M=Matrix.  or Problematic Hydric Soils <sup>3</sup> :  lck (A9) (LRR O)  lck (A10) (LRR S)  d Vertic (F18) (outside MLRA 150A, Int Floodplain Soils (F19) (LRR P, S, 10)  ous Bright Loamy Soils (F20)  A 153B)  ent Material (TF2)  allow Dark Surface (TF12)  ixplain in Remarks)  cors of hydrophytic vegetation and ind hydrology must be present, is disturbed or problematic.
Sandy Sandy Strippe	Gleyed Matrix (S4) Redox (S5) d Matrix (S6) urface (S7) (LRR P,		Reduced Ver	tic (F18) <b>(</b> odplain S	MLRA 15 oils (F19)	(MLRA 1	)	
estrictive	Layer (if observed)							
Type: N Depth (ir	one nches): <u>None</u>		<u> </u>				Hydric Soil P	resent? Yes X No
	Soils at Samp	ile Poin	t 13-SP2 met	the cri	teria to	be cla	assified as S	Sandy Redox (S5).

Project/Site: Redfish Facility	Survey Area	Cit	y/County: Aran	sas Pass/San Patricio County	Sampling Date: November 28, 2018		
Applicant/Owner: Project Con	sulting Services,	lnc.		State: TX	Sampling Point:T3-SP3		
Investigator(s): B.J. Hill		Se					
Landform (hillslope, terrace, etc		700000000000000000000000000000000000000		Section and the second section is a second section of the section of th	Slope (%): 1-2%		
Subregion (LRR or MLRA): ML							
Soil Map Unit Name: Ijam Soil		19000190390389		NWI classific			
Are climatic / hydrologic conditi	ons on the site typic	al for this time of year?	Yes N	NoX (If no, explain in R	emarks.)		
Are Vegetation No Soil					present? Yes X No		
Are Vegetation No Soil N	or Hydrology	No_naturally proble	ematic? (	(If needed, explain any answe	rs in Remarks.)		
SUMMARY OF FINDING	iS – Attach sit	e map showing s	ampling poi	nt locations, transects	, important features, etc.		
Hydrophytic Vegetation Prese	ent? Yes	No_X		8 8 8	,1		
Hydric Soil Present?		No X	Is the Sam		Y		
Wetland Hydrology Present?	Yes	No X	within a W	etland? Yes	NoX		
Remarks:	-	- 1157,8353					
Total rainfall in the six mor Service, the May-October (62%) above normal May- due to the dominance of u	rainfàll total was October rainfall fo	1.89 inches above to or the survey area. S	he ANNUAL r Sample Point	ainfall total for the survey T3-SP3 was determined to	area, and 12.38 inches be located within uplands		
HYDROLOGY							
Wetland Hydrology Indicato	rs:			Secondary Indica	tors (minimum of two required)		
Primary Indicators (minimum	of one is required; c	heck all that apply)		Surface Soil	Cracks (B6)		
Surface Water (A1)	2-3	Aquatic Fauna (B13)		Sparsely Veg	getated Concave Surface (B8)		
High Water Table (A2)		Marl Deposits (B15) (L	_RR U)		Drainage Patterns (B10)		
Saturation (A3)		Hydrogen Sulfide Odo		Moss Trim Li			
Water Marks (B1)		Oxidized Rhizosphere			Water Table (C2)		
Sediment Deposits (B2)		Presence of Reduced	3771	Crayfish Burn			
Drift Deposits (B3)		Recent Iron Reduction	in Tilled Soils (	C6) Saturation Vi	sible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)	_	Thin Muck Surface (C	7)	Geomorphic	Position (D2)		
Iron Deposits (B5)	0 <del>1 - 11</del>	Other (Explain in Rem	arks)	Shallow Aqui	itard (D3)		
Inundation Visible on Aer	ial Imagery (B7)			FAC-Neutral	Test (D5)		
Water-Stained Leaves (B	9)			Sphagnum n	noss (D8) (LRR T, U)		
Field Observations:			I				
Surface Water Present?	Yes No _	X Depth (inches): _	None				
Water Table Present?	Yes No	X Depth (inches): _	None				
Saturation Present?		X Depth (inches):	None	Wetland Hydrology Presen	it? Yes No _X		
(includes capillary fringe)				tions) if a callable.	NT 30 NT TA		
Describe Recorded Data (street) ArcGIS basemap.	am gauge, monitori	ng well, aerial priotos,	previous inspec	tions), if available:			
Remarks:							
Wetland hydrology	was not nres	ent at Sample F	Point T3-S	P3			
TVOII and Try arology	was not pros	ont at Gampio i		. 0.			

			36.	
/EGETATION (Five	Strata) - Us	e scientific	names of	plants
	- weight	O COICITIO	HOLLING OF	picalico.

'EGETATION (Five Strata) – Use scientific na	mes of pla	ants.		Sampling Point: 13-SP3
Ν/Δ		Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>N/A</u> ) 1)	% Cover	Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2.				Tatal Number of Descinant
3				Total Number of Dominant Species Across All Strata:  4 (B)
4.				Constitution of the Consti
5.				Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)
6			-	That Are OBL, FACW, or FAC: (A/B)
·				Prevalence Index worksheet:
50% of total cover:	0.0000000000000000000000000000000000000			Total % Cover of: Multiply by:
Sapling Stratum (Plot size: N/A )	20 % 01	total cover	•	OBL species0 x 1 =0
				FACW species0 x 2 =0
1			ib. <del></del> 3	FAC species60 x 3 =180
2			<del></del>	FACU species30 x 4 =120
3			-	UPL species 30 x 5 = 150
4			0.6	Column Totals: 120 (A) 450 (B)
5				
6			16. <del></del>	Prevalence Index = B/A =3.75
		= Total Cov	/er	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of	total cover	·	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size:30 ft x 30 ft)				2 - Dominance Test is >50%
1. Helianthus argophyllus	30%	Yes	NI	3 - Prevalence Index is ≤3.01
2. Schinus terebinthifolia	30%	Yes	FAC	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3	40%	·	01 <u></u>	
4				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
5.		9	102 · · · · · · · · · · · · · · · · · · ·	be present, unless disturbed or problematic.
6.	-10	)		Definitions of Five Vegetation Strata:
***	60%	= Total Cov		
50% of total cover: 30 <u>Herb Stratum</u> (Plot size: 30 ft x 30 ft )				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
1. Schizachyrium scoparium	30%	Yes	FACU	
2. Ambrosia psilostachya	30%	Yes	FAC	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
Talia de la companya				than 3 in. (7.6 cm) DBH.
3				
4				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
5				approximately a to 20 is (1 to 0 iii) iii iiogiiii
6				Herb – All herbaceous (non-woody) plants, including
7				herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately
8		-		3 ft (1 m) in height.
9			· · · · · · · · · · · · · · · · · · ·	Woody vine – All woody vines, regardless of height.
10				**************************************
11				
	60% :	= Total Co	/er	
50% of total cover: 30%	6 20% of	total cover	12%	
Woody Vine Stratum (Plot size: N/A )				
1		7 <u> </u>		
2.			S	
3.			-	
4			· · · · · · · · · · · · · · · · · · ·	
-				
5				Hydrophytic Vegetation
50% of total cover:	:			Present? Yes No _X

SOIL Sampling Point: T3-SP3

)epth	Matrix	A 12		x Features						
inches) -6"	Color (moist) 10YR 4/2		Color (moist)	%	<u>Type</u> <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	p	Remarks	
	0 -	100%		·			Loamy sand	W <del>.</del>		
-18"	10YR 5/2	_ <u>100%</u> _		Si	·		Loamy sand	99 <del></del>		
	-	<u> </u>					<u> </u>	7		
		-0.						·		
	8							N1		
vne: C=0	-   ———————————————————————————————————	letion RM=	Reduced Matrix MS	S=Masked	Sand Gra	nins	<sup>2</sup> Location:	PI =Pore I	ining, M=Mat	rix
	I Indicators: (Applic	90 90 YO 100 TO 100 YO							matic Hydric	
_ Histose	ol (A1)		Polyvalue Be	low Surfa	ce (S8) <b>(L</b>	RR S, T, U	I) 1 cm N	luck (A9) (L	RR O)	
	Epipedon (A2)		Thin Dark Su					luck (A10)		
UC - NO.1 C1C-00100010	Histic (A3)		Loamy Mucky	<ul> <li>pospojenjuministranjuministra</li> </ul>		0)				MLRA 150A
	jen Sulfide (A4) ed Layers (A5)		Loamy Gleye Depleted Mai		F2)				ain Soils (F18 Loamy Soils	9) <b>(LRR P, S,</b> (F20)
	c Bodies (A6) (LRR F	P, T, U)	Redox Dark	nece 100 and the same	6)			RA 153B)	Louiny cons	(1 20)
	lucky Mineral (A7) (L		Depleted Dar	k Surface	(F7)			arent Mater	ial (TF2)	
	Presence (A8) <b>(LRR l</b>	J)	Redox Depre		В)		9 3		Surface (TF	12)
	fuck (A9) (LRR P, T)	(444)	Marl (F10) (L		/MAI D A 44	:43	Other	Explain in I	Remarks)	
	ed Below Dark Surfac Dark Surface (A12)	e (ATT)	Depleted Oct				T) <sup>3</sup> India	ators of hyd	drophytic veg	etation and
III. DOS GUOVINOS O NOV	Prairie Redox (A16) (	MLRA 150A					200.00		ogy must be	
_ Sandy	Mucky Mineral (S1) (	LRR O, S)	Delta Ochric				unl	ess disturbe	ed or problem	atic.
_ Sandy	Gleyed Matrix (S4)		Reduced Ver	tic (F18) (	MLRA 15	0A, 150B)				
- 10 May 1987			00 - 1				100000000			
50 NOTE 10	Redox (S5)		Piedmont Flo		oils (F19)			452D)		
Strippe	Redox (S5) ed Matrix (S6)	S T UI	Piedmont Flo		oils (F19)		9A) A 149A, 153C	, 153D)		
_ Strippe _ Dark S	Redox (S5)		Piedmont Flo		oils (F19)			, 153 <b>D</b> )		
_ Strippe _ Dark S	Redox (S5)  Ind Matrix (S6)  Ind Matrix (S7) (LRR P. Section 11 (LRR P. Section 12 (LRR P. Section 13 (LRR P. Section 14 (LRR P		Piedmont Flo		oils (F19)			, 153D)		
Strippe Dark S estrictive Type: _^	Redox (S5)  Ind Matrix (S6)  Ind Matrix (S7) (LRR P. Section 11 (LRR P. Section 12 (LRR P. Section 13 (LRR P. Section 14 (LRR P		Piedmont Flo		oils (F19)			26 H	Yes	X
Strippe Dark S estrictive Type: _^	Redox (S5) ad Matrix (S6) urface (S7) (LRR P, 5 Layer (if observed)		Piedmont Flo		oils (F19)		A 149A, 153C	26 H	Yes	No X
Strippe Dark S estrictive Type: _^ Depth (i	Redox (S5) ad Matrix (S6) urface (S7) (LRR P, 5 Layer (if observed)	:	Piedmont Flo	right Loar	oils (F19) ny Soils (F	F20) <b>(MLR</b>	A 149A, 153C Hydric Soil	26 H	Yes	X
Strippe Dark S estrictive Type: _^ Depth (i	Redox (S5) ad Matrix (S6) urface (S7) (LRR P, 5 Layer (if observed) lone nches): None	:	Piedmont Flo	right Loar	oils (F19) ny Soils (F	F20) <b>(MLR</b>	A 149A, 153C Hydric Soil	26 H	Yes	NoX
Strippe Dark S estrictive Type: _^ Depth (i	Redox (S5) ad Matrix (S6) urface (S7) (LRR P, 5 Layer (if observed) lone nches): None	:	Piedmont Flo	right Loar	oils (F19) ny Soils (F	F20) <b>(MLR</b>	A 149A, 153C Hydric Soil	26 H	Yes	NoX
Strippe Dark S estrictive Type: _^ Depth (i	Redox (S5) ad Matrix (S6) urface (S7) (LRR P, 5 Layer (if observed) lone nches): None	:	Piedmont Flo	right Loar	oils (F19) ny Soils (F	F20) <b>(MLR</b>	A 149A, 153C Hydric Soil	26 H	Yes	No_X
Strippe Dark S estrictive Type: _^ Depth (i	Redox (S5) ad Matrix (S6) urface (S7) (LRR P, 5 Layer (if observed) lone nches): None	:	Piedmont Flo	right Loar	oils (F19) ny Soils (F	F20) <b>(MLR</b>	A 149A, 153C Hydric Soil	26 H	Yes	NoX
Strippe Dark S estrictive Type: _^ Depth (i	Redox (S5) ad Matrix (S6) urface (S7) (LRR P, 5 Layer (if observed) lone nches): None	:	Piedmont Flo	right Loar	oils (F19) ny Soils (F	F20) <b>(MLR</b>	A 149A, 153C Hydric Soil	26 H	Yes	X
Strippe Dark S estrictive Type: _^ Depth (i	Redox (S5) ad Matrix (S6) urface (S7) (LRR P, 5 Layer (if observed) lone nches): None	:	Piedmont Flo	right Loar	oils (F19) ny Soils (F	F20) <b>(MLR</b>	A 149A, 153C Hydric Soil	26 H	Yes	NoX
Strippe Dark S estrictive Type: _^ Depth (i	Redox (S5) ad Matrix (S6) urface (S7) (LRR P, 5 Layer (if observed) lone nches): None	:	Piedmont Flo	right Loar	oils (F19) ny Soils (F	F20) <b>(MLR</b>	A 149A, 153C Hydric Soil	26 H	Yes	No X
Strippe Dark S estrictive Type: _^ Depth (i	Redox (S5) ad Matrix (S6) urface (S7) (LRR P, 5 Layer (if observed) lone nches): None	:	Piedmont Flo	right Loar	oils (F19) ny Soils (F	F20) <b>(MLR</b>	A 149A, 153C Hydric Soil	26 H	Yes	No X
Strippe Dark S estrictive Type: _^ Depth (i	Redox (S5) ad Matrix (S6) urface (S7) (LRR P, 5 Layer (if observed) lone nches): None	:	Piedmont Flo	right Loar	oils (F19) ny Soils (F	F20) <b>(MLR</b>	A 149A, 153C Hydric Soil	26 H	Yes	No_X
Strippe Dark S estrictive Type: _^ Depth (i	Redox (S5) ad Matrix (S6) urface (S7) (LRR P, 5 Layer (if observed) lone nches): None	:	Piedmont Flo	right Loar	oils (F19) ny Soils (F	F20) <b>(MLR</b>	A 149A, 153C Hydric Soil	26 H	Yes	NoX
Strippe Dark S estrictive Type: _^ Depth (i	Redox (S5) ad Matrix (S6) urface (S7) (LRR P, 5 Layer (if observed) lone nches): None	:	Piedmont Flo	right Loar	oils (F19) ny Soils (F	F20) <b>(MLR</b>	A 149A, 153C Hydric Soil	26 H	Yes	X
Strippe Dark S estrictive Type: _^ Depth (i	Redox (S5) ad Matrix (S6) urface (S7) (LRR P, 5 Layer (if observed) lone nches): None	:	Piedmont Flo	right Loar	oils (F19) ny Soils (F	F20) <b>(MLR</b>	A 149A, 153C Hydric Soil	26 H	Yes	No_X
Strippe Dark S estrictive Type: _^ Depth (i	Redox (S5) ad Matrix (S6) urface (S7) (LRR P, 5 Layer (if observed) lone nches): None	:	Piedmont Flo	right Loar	oils (F19) ny Soils (F	F20) <b>(MLR</b>	A 149A, 153C Hydric Soil	26 H	Yes	No_X
Strippe Dark S estrictive Type: _^ Depth (i	Redox (S5) ad Matrix (S6) urface (S7) (LRR P, 5 Layer (if observed) lone nches): None	:	Piedmont Flo	right Loar	oils (F19) ny Soils (F	F20) <b>(MLR</b>	A 149A, 153C Hydric Soil	26 H	Yes	No_X
Strippe Dark S estrictive Type: _^ Depth (i	Redox (S5) ad Matrix (S6) urface (S7) (LRR P, 5 Layer (if observed) lone nches): None	:	Piedmont Flo	right Loar	oils (F19) ny Soils (F	F20) <b>(MLR</b>	A 149A, 153C Hydric Soil	26 H	Yes	No X
Strippe Dark S estrictive Type: _^ Depth (i	Redox (S5) ad Matrix (S6) urface (S7) (LRR P, 5 Layer (if observed) lone nches): None	:	Piedmont Flo	right Loar	oils (F19) ny Soils (F	F20) <b>(MLR</b>	A 149A, 153C Hydric Soil	26 H	Yes	No_X
Strippe Dark S estrictive Type: _^ Depth (i	Redox (S5) ad Matrix (S6) urface (S7) (LRR P, 5 Layer (if observed) lone nches): None	:	Piedmont Flo	right Loar	oils (F19) ny Soils (F	F20) <b>(MLR</b>	A 149A, 153C Hydric Soil	26 H	Yes	No_X
Strippe Dark S  estrictive  Type: _^  Depth (i	Redox (S5) ad Matrix (S6) urface (S7) (LRR P, 5 Layer (if observed) lone nches): None	:	Piedmont Flo	right Loar	oils (F19) ny Soils (F	F20) <b>(MLR</b>	A 149A, 153C Hydric Soil	26 H	Yes	No_X

Project/Site: Redfish Facility	Survey Area	City/	County: Aransas Pass/S	San Patricio County	Sampling Date: November 28, 2018	
Applicant/Owner: Project Con	sulting Services, I	nc.		State: TX	Sampling Point:T3-SP4	
Investigator(s): B.J. Hill		Sect				
Landform (hillslope, terrace, etc					Slope (%): 2-3%	
Subregion (LRR or MLRA): ML				27.8753841259	Datum: WGS84	
Soil Map Unit Name: Ijam Soil			Associated Co.	NWI classifica	50.74 T-25750 He to 1647	
Are climatic / hydrologic conditi	ons on the site typic	al for this time of year?	Yes NoX	(If no, explain in Re	emarks.)	
Are Vegetation No Soil					resent? Yes X No	
Are Vegetation No Soil N	10_, or Hydrology_	No naturally problem	natic? (If needed,	explain any answer	rs in Remarks.)	
SUMMARY OF FINDING	S – Attach site	map showing sar	mpling point locati	ions, transects	, important features, etc.	
Hydrophytic Vegetation Prese	ant? Yes	NoX	1000 100 1000 100 100 100 100 100 100 1			
Hydric Soil Present?		NoX	Is the Sampled Area		Y	
Wetland Hydrology Present?	Yes	NoX	within a Wetland?	Yes	NoX	
Remarks:	5,000					
Total rainfall in the six mor Service, the May-October (62%) above normal May- due to the dominance of u	rainfàll total was October rainfall fo	1.89 inches above the or the survey area. Sa	e ANNUAL rainfall tot Imple Point T3-SP4 v	tal for the survey a vas determined to	area, and 12.38 inches be located within uplands	
HYDROLOGY						
Wetland Hydrology Indicato	rs:			Secondary Indica	tors (minimum of two required)	
Primary Indicators (minimum	of one is required; cl	neck all that apply)		Surface Soil (	Cracks (B6)	
Surface Water (A1)	30 <u></u> 247	Aquatic Fauna (B13)		Sparsely Veg	getated Concave Surface (B8)	
High Water Table (A2)		Marl Deposits (B15) (LR	RR U)	Drainage Patterns (B10)		
Saturation (A3)		Hydrogen Sulfide Odor (		Moss Trim Li		
Water Marks (B1)		Oxidized Rhizospheres			Water Table (C2)	
Sediment Deposits (B2)		Presence of Reduced Ire		Crayfish Burr		
Drift Deposits (B3)		Recent Iron Reduction in	n Tilled Soils (C6)	Saturation Vi	sible on Aerial Imagery (C9)	
Algal Mat or Crust (B4)	_	Thin Muck Surface (C7)		Geomorphic	Position (D2)	
Iron Deposits (B5)	0 <del>1</del>	Other (Explain in Remar	rks)	Shallow Aqui	tard (D3)	
Inundation Visible on Aer	ial Imagery (B7)			FAC-Neutral	Test (D5)	
Water-Stained Leaves (B	9)			Sphagnum m	noss (D8) (LRR T, U)	
Field Observations:			Ī			
Surface Water Present?	Yes No	X Depth (inches):	None			
Water Table Present?	Yes No	X Depth (inches):	None			
Saturation Present?		X Depth (inches):	None Wetland	Hydrology Presen	t? Yes No _X	
(includes capillary fringe)  Describe Recorded Data (stre	am gauge, monitori	ng well, aerial photos, pro	evious inspections), if av	vailable:		
ArcGIS basemap.	gg,	· <b>J</b>	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Remarks:						
Wetland hydrology	was not prese	ent at Sample Po	oint T3-SP4.			
, ,	•	'				

VEGETATION	(Five Strata) -	Lise scientific	names of plants.
VEGETATION	(Five Suala) -	OSE SCIENTING	Harries of plants.

EGETATION (Five Strata) – Use scientific	names of plant	S.	Sampling Point: T3-SP4
N/A		ominant Indicator	Dominance Test worksheet:
<u>Free Stratum</u> (Plot size: <u>N/A</u> ) I)		pecies? Status	Number of Dominant Species That Are OBL, FACW, or FAC:1 (A)
!. <u> </u>			Total Number of Dominant
S			Species Across All Strata: 2 (B)
l.,			Percent of Dominant Species 500/
5			That Are OBL, FACW, or FAC:
5			Prevalence Index worksheet:
	= T	otal Cover	Total % Cover of: Multiply by:
50% of total cover: _	20% of tota	al cover:	OBL species x 1 = 0
Sapling Stratum (Plot size: N/A )			FACW species 45 x 2 = 90
ř <u> </u>			FAC species 5 x 2 = 15
<u> </u>			FACU species 50 x 4 = 200
S			UPL species 0 x 5 = 0
l			30 00 00 00 00 00 00 00 00 00 00 00 00 0
5			Column Totals: (A) (B)
S			Prevalence Index = B/A =3.05
	= T	otal Cover	Hydrophytic Vegetation Indicators:
50% of total cover: _	20% of tota	al cover:	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: N/A )			2 - Dominance Test is >50%
1			3 - Prevalence Index is ≤3.0¹
2			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3			
1.			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
5			be present, unless disturbed or problematic.
3.			Definitions of Five Vegetation Strata:
	= T	otal Cover	The National Control of the Control
50% of total cover: _ Herb Stratum (Plot size:30 ft x 30 ft)	20% of tota	al cover:	Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
Schizachyrium scoparium	50%	Yes FACU	A CONTROL AND A CONTROL OF THE PART OF THE
Paspalum monostachyum	45%	Yes FACW	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
Baccharis halimifolia	5%	FAC	than 3 in. (7.6 cm) DBH.
1			Shrub – Woody plants, excluding woody vines,
f			approximately 3 to 20 ft (1 to 6 m) in height.
			Harb All barba seems (hen woods) plants including
5			Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
<u></u>			plants, except woody vines, less than approximately
3			3 ft (1 m) in height.
)			Woody vine - All woody vines, regardless of height.
0			Λ.
1	100% –		
(Bank B7 8 7	$\frac{100\%}{100\%} = T$		
50% of total cover: _	20% of tota	ai cover:	l l
Woody Vine Stratum (Plot size: N/A )			
			l l
2			
3			
4. · <u> </u>			
5			Hydrophytic
	= T	otal Cover	Vegetation
FOAR RELIGIOUS	2004 of total	ol onyor:	Present? Yes No _X
50% of total cover: _	20% 01 101	ai covei	9

SOIL Sampling Point: T3-SP4

	Matrix			x Features		- 1				
<u>inches)</u> )-6"	Color (moist) 10YR 4/2	- <u>%</u> -	Color (moist)		<u>Type</u>	Loc²	Texture Loamy sand	-	Remarks	
5-18"	10YR 5/2	-12						K <del>.</del>		
-10	101K 5/2	100%		Œ <u></u>	-		Loamy sand	¥ <del></del>		
	* <del>*</del>						<u>e</u> <u>5</u>	27		
		30. 0.		10:				0.		
				10.				10		
								79		
ype: C=0	Concentration, D=Dep	oletion, RM=	Reduced Matrix, MS	S=Masked	Sand Gra	ains.	<sup>2</sup> Location:	PL=Pore L	ining, M=Ma	trix.
ydric Soil	Indicators: (Applic	able to all L	RRs, unless other	wise note	ed.)		Indicators	for Proble	matic Hydric	c Soils³:
_ Histosc			Polyvalue Be					/luck (A9) <b>(l</b>		
	Epipedon (A2)		Thin Dark Su					/luck (A10)		MI DA 450A
Jr. — No.: 616.00700000	Histic (A3) en Sulfide (A4)		Loamy Mucky Loamy Gleye	a secondarian and reserve		U)				MLRA 150A 9) (LRR P, S,
	ed Layers (A5)		Depleted Mat		/				Loamy Soils	
	c Bodies (A6) (LRR F	P, T, U)	Redox Dark	Surface (F	6)		(MLI	RA 153B)		
	lucky Mineral (A7) (L		Depleted Dar		. 3			arent Mater		2020
	Presence (A8) (LRR L luck (A9) (LRR P, T)	J)	Redox Depre Marl (F10) (L		8)		9 3		k Surface (TF	-12)
	ed Below Dark Surfac	ce (A11)	Depleted Och		(MLRA 1	51)	— Other	(Explain in I	Remarks)	
	ark Surface (A12)	( )	Iron-Mangan				T) <sup>3</sup> India	ators of hyd	drophytic veg	etation and
ac proportion provides in	Prairie Redox (A16) <b>(</b> I		A DESCRIPTION OF A PROPERTY OF THE			, U)		SURPRISED AND STATE TO SECURE	ogy must be	• NOTE   AND ADDRESS AND
3 (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	Mucky Mineral (S1) (	LRR O, S)	Delta Ochric			0.5. 450B)		ess disturbe	ed or problem	natic.
	Gleyed Matrix (S4) Redox (S5)		Reduced Ver Piedmont Flo							
50 NO. 10 (5)			The state of the s					212221211		
Strippe	d Matrix (S6)		Anomaious E	srignt Loar	ny Soils (I		A 149A, 153C	, 153D)		
	a Matrix (S6) urface (S7) <b>(LRR P, \$</b>	S, T, U)	Anomalous B	sright Loar	ny Soils (I	-20) (NILK	A 149A, 153C	, 153D)		
Dark Si Restrictive	urface (S7) (LRR P, S Layer (if observed)		Anomaious B	sright Loar	ny Soils (I	-20) (WILK	A 149A, 153C	, 153D)		
Dark Si estrictive Type: _N	urface (S7) (LRR P, S Layer (if observed) lone		Anomalous B	right Loar	ny Soils (I	-20) (WILK	38 3	de H		~
Dark Si estrictive Type: _N Depth (in	urface (S7) (LRR P, S Layer (if observed)		Anomaious B	sright Loar	ny Solls (I	-20) (NILK	Hydric Soil	de H	Yes	XX
Dark Si estrictive Type: N Depth (in emarks:	urface (S7) (LRR P, S Layer (if observed) lone nches): None	:			2 2	* #	Hydric Soil	de H	Yes	X
Dark Si estrictive Type: N Depth (in emarks:	urface (S7) (LRR P, S Layer (if observed) lone	:			2 2	* #	Hydric Soil	de H	Yes	No_X
Dark Some Strictive Type: Note: Note	urface (S7) (LRR P, S Layer (if observed) lone nches): None	:		V90	2 2	* #	Hydric Soil	de H	Yes	No_X
Dark Si estrictive Type: N Depth (in emarks:	urface (S7) (LRR P, S Layer (if observed) lone nches): None	:		V90	2 2	* #	Hydric Soil	de H	Yes	NoX_
Dark Some Strictive Type: Note: Note	urface (S7) (LRR P, S Layer (if observed) lone nches): None	:		V90	2 2	* #	Hydric Soil	de H	Yes	No_X
Dark Si estrictive Type: N Depth (in emarks:	urface (S7) (LRR P, S Layer (if observed) lone nches): None	:		V90	2 2	* #	Hydric Soil	de H	Yes	No_X
Dark Si estrictive Type: N Depth (in emarks:	urface (S7) (LRR P, S Layer (if observed) lone nches): None	:		V90	2 2	* #	Hydric Soil	de H	Yes	NoX
Dark Si estrictive Type: N Depth (in emarks:	urface (S7) (LRR P, S Layer (if observed) lone nches): None	:		V90	2 2	* #	Hydric Soil	de H	Yes	No X
Dark Some Strictive Type: Note: Note	urface (S7) (LRR P, S Layer (if observed) lone nches): None	:		V90	2 2	* #	Hydric Soil	de H	Yes	No_X
Dark Si estrictive Type: N Depth (in emarks:	urface (S7) (LRR P, S Layer (if observed) lone nches): None	:		V90	2 2	* #	Hydric Soil	de H	Yes	X
Dark Si estrictive Type: N Depth (in emarks:	urface (S7) (LRR P, S Layer (if observed) lone nches): None	:		V90	2 2	* #	Hydric Soil	de H	Yes	No_X
Dark Si estrictive Type: N Depth (in emarks:	urface (S7) (LRR P, S Layer (if observed) lone nches): None	:		V90	2 2	* #	Hydric Soil	de H	Yes	No X
Dark Si estrictive Type: N Depth (in emarks:	urface (S7) (LRR P, S Layer (if observed) lone nches): None	:		V90	2 2	* #	Hydric Soil	de H	Yes	No_X
Dark Si estrictive Type: N Depth (in emarks:	urface (S7) (LRR P, S Layer (if observed) lone nches): None	:		V90	2 2	* #	Hydric Soil	de H	Yes	NoX
Dark Some Strictive Type: Note: Note	urface (S7) (LRR P, S Layer (if observed) lone nches): None	:		V90	2 2	* #	Hydric Soil	de H	Yes	No X
Dark Solestrictive Type: Note:	urface (S7) (LRR P, S Layer (if observed) lone nches): None	:		V90	2 2	* #	Hydric Soil	de H	Yes	No_X
Dark Solestrictive Type: Note:	urface (S7) (LRR P, S Layer (if observed) lone nches): None	:		V90	2 2	* #	Hydric Soil	de H	Yes	No_X
Dark Some Strictive Type: Note: Note	urface (S7) (LRR P, S Layer (if observed) lone nches): None	:		V90	2 2	* #	Hydric Soil	de H	Yes	No_X
Dark Some Strictive Type: Note: Note	urface (S7) (LRR P, S Layer (if observed) lone nches): None	:		V90	2 2	* #	Hydric Soil	de H	Yes	No X
Dark Sestrictive Type: _N Depth (inemarks:	urface (S7) (LRR P, S Layer (if observed) lone nches): None	:		V90	2 2	* #	Hydric Soil	de H	Yes	X

Project/Site: Redfish Facility Survey Area City/Cou	Inty: Aransas Pass/San Patricio County Sampling Date: November 28, 2018
Applicant/Owner: Project Consulting Services, Inc.	State: TX Sampling Point: RFF-SP1
Investigator(s): B.J. Hill Section,	
Landform (hillslope, terrace, etc.): Estuarine Flat Local re	lief (concave, convex, none): None Slope (%): 1-2%
Subregion (LRR or MLRA): MLRA 150B in LRR T Lat: -97.15576353	91 Long: _27.8776020167 Datum: WGS84
Soil Map Unit Name: Dianola Soils	NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time of year? Yes	NoX (If no, explain in Remarks.)
Are Vegetation No, Soil No, or Hydrology No significantly disturbe	d? Are "Normal Circumstances" present? Yes X No
Are Vegetation No, Soil No, or Hydrology No naturally problematic	c? (If needed, explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map showing samp	ling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? Yes X No	
Hydric Soil Present?	s the Sampled Area
Wetland Hydrology Present? Yes X No V	vithin a Wetland? Yes X No No
Remarks:	
Total rainfall in the six months (May-October) prior to the survey was	32.52-inches, According to NOAA's National Weather Service.
the May-October rainfall total was 1.89 inches above the ANNUAL rai	
normal May-October rainfall for the survey area. Sample Point 1RF was	
dominance of hydrophytic vegetation, the presence of hydric soils and	the presence of wetland hydrology at the sample plot.
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that apply)	Surface Soil Cracks (B6)
Surface Water (A1) Aquatic Fauna (B13)	Sparsely Vegetated Concave Surface (B8)
X High Water Table (A2) Marl Deposits (B15) (LRR U	
X Saturation (A3) Hydrogen Sulfide Odor (C1	
Water Marks (B1)  X Oxidized Rhizospheres alor	
Sediment Deposits (B2)  Presence of Reduced Iron (	J. 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
X Drift Deposits (B3) Recent Iron Reduction in Ti	
Algal Mat or Crust (B4) Thin Muck Surface (C7)	X Geomorphic Position (D2)
Iron Deposits (B5) Other (Explain in Remarks)	
Inundation Visible on Aerial Imagery (B7)	X FAC-Neutral Test (D5)
Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T, U)
Field Observations:	
Surface Water Present? Yes No _X _ Depth (inches):No	ne
Water Table Present? Yes X No Depth (inches): 6" from	surface
	rface Wetland Hydrology Present? Yes X No
(includes capillary fringe)	
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous	ous inspections), if available:
ArcGIS basemap.	
Remarks:	
Wetland hydrology was present at Sample Point 1F	RF due to the presence of a High Water Table
(A2) and soil Saturation (A3) within the upper 12-in	
Deposits (B3) and Oxidized Rhizospheres on Living	·
1 ' ' '	
the sample plot (lower portions of the landscape), a	ind passing the FAC-Neutral Test (D5).

VEGETATION	(Five	Strata).	_ L	ISA	scientific	names	of	nlan	te

<b>EGETATION (Five Strata)</b> – Use scientific nam	ies ot pia	arits.		Sampling Point:
N/A		Dominant		Dominance Test worksheet:
ree Stratum (Plot size: N/A )	% Cover	Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
				Total Number of Dominant Species Across All Strata:  4 (B)
				Species Across Air Strata.
				Percent of Dominant Species 100%
				That Are OBL, FACW, or FAC:(A/B)
•				Prevalence Index worksheet:
		= Total Cov		Total % Cover of: Multiply by:
50% of total cover:	20% of	total cover:		OBL species x 1 =
apling Stratum (Plot size: N/A )				FACW species x 2 =
·				FAC species x 3 =
				FACU species x 4 =
				UPL species x 5 =
				Column Totals: (A) (B)
				Prevalence Index = B/A =
		= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover:	 20% of	total cover:		1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 30 ft x 30 ft )			-	
Avicennia germinans	20%	Yes	OBL	2 - Dominance Test is >50% 3 - Prevalence Index is ≤3.0¹
			*	
				Problematic Hydrophytic Vegetation¹ (Explain)
				4
l				Indicators of hydric soil and wetland hydrology must
5	<del></del> [		-	be present, unless disturbed or problematic.
	200/	Y = 10 4000		Definitions of Five Vegetation Strata:
1004		= Total Cov		Tree – Woody plants, excluding woody vines,
50% of total cover: 10% Herb Stratum (Plot size: 30 ft x 30 ft )	_ 20% of	total cover:	_4%	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
Sporobolus virginicus	40%	Yes	FACW	
Borrichia frutescens	20%	Yes	OBL	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
Batis maritima	20%		OBL	than 3 in. (7.6 cm) DBH.
	10%	Yes		
Fimbristylis castanea		No	OBL	Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
Sarcocornia ambigua	5%	No	OBL	approximately a to 20 ft (1 to 6 ff) if height.
4				Herb – All herbaceous (non-woody) plants, including
·				herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately
			-	3 ft (1 m) in height.
				W 1 : 1 : 1 : 1 : 1 : 1 : 1 : 1 : 1 : 1
0				Woody vine – All woody vines, regardless of height.
1.		3		
		Total Cov	er	
50% of total cover:48%				
Noody Vine Stratum (Plot size: N/A )	_ 207001	total cover.		
i				
i				Hydrophytic
		= Total Cov	er	Vegetation
500/ 51-1-1	2004 of	total agreer		Present? Yes X No No
50% of total cover:	20 70 OI	total cover.		

1RF

SOIL Sampling Point: 1RF

Profile Desc	ription: (Describe	to the dept	h needed to docu	ment the i	ndicator	or confirm	the absence o	of indicators.)
Depth	Matrix	2		x Features				
(inches)	Color (moist)	%	Color (moist)	%	_Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-18"	10YR 5/2	98%	10YR 5/6	2%	MS	PL	Loamy sand	
		541 A 11						-
-	*	33 <del></del>		-	3=		# 13	
-		70 <u>5</u> 5					<u> </u>	
								**
-	<del></del>	SS		-100				
		·			-			
	2			- 0				
<sup>1</sup> Type: C=Co	oncentration, D=Dep	letion, RM=	Reduced Matrix, M	S=Masked	Sand Gra	ains.	<sup>2</sup> Location:	PL=Pore Lining, M=Matrix.
	ndicators: (Applica							for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Polyvalue Be	elow Surfac	ce (S8) (L	RR S. T. U	J) 1 cm M	uck (A9) (LRR O)
	pipedon (A2)		Thin Dark S					uck (A10) (LRR S)
Black Hi			Loamy Muck					ed Vertic (F18) (outside MLRA 150A,B)
AC - NOS ENCODADOS CARO	n Sulfide (A4)		Loamy Gley					ent Floodplain Soils (F19) (LRR P, S, T)
20 1020 STREET TO THE STREET T	Layers (A5)		Depleted Ma		-/-		to the contract of the contrac	ous Bright Loamy Soils (F20)
STORY ON	Bodies (A6) (LRR P,	T. U)	Redox Dark		6)			A 153B)
25 - 34 STATE	cky Mineral (A7) (LF		Depleted Da	10 ALEX 10 AT				rent Material (TF2)
S	esence (A8) (LRR U		Redox Depr					nallow Dark Surface (TF12)
	ck (A9) (LRR P, T)	Á	Marl (F10) (I					Explain in Remarks)
20. 20	Below Dark Surface	e (A11)	Depleted Oc		(MLRA 15	51)		
	rk Surface (A12)		Iron-Mangar				T) <sup>3</sup> Indica	ators of hydrophytic vegetation and
LE DOS GUARNESIO NEVAROS	rairie Redox (A16) (N	ILRA 150A	A DESCRIPTION OF THE PROPERTY					and hydrology must be present,
	lucky Mineral (S1) (L		Delta Ochric					ss disturbed or problematic.
The supply of the second second second	leyed Matrix (S4)		Reduced Ve	20,989 - 200-010 - 400-000	AND STREET	0A, 150B)		
X Sandy R			Piedmont Fl			and the second		
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Matrix (S6)		The second secon	and the second second		Maragan - maragan maragan	A 149A, 153C,	153D)
	rface (S7) (LRR P, S	i, T, U)		<del> </del>	•			
	ayer (if observed):							
Type: No	ne							
	ches): None						Hydric Soil I	Present? Yes X No
Remarks:							1,	
	\lthough bydr	ic coile v	voro occum	مط طبیم	to the	domine	anco of on	ly obligate and facultative
	•							, ,
V	vetland veget	ation an	id an abrupt	wetland	d boun	dary, s	soils also m	net criteria to be classified
a	as Sandy Red	ox (S5)	•					
	-	` ,						

Project/Site: Redfish Facility	Survey Area	City/C	ounty: Aransas Pass/	San Patricio County	Sampling Date: No	ovember 28, 2018
Applicant/Owner: Project Con	sulting Services, I	nc.		State: TX	Sampling Point:	RFF-SP2
Investigator(s): B.J. Hill		Section Section				
Landform (hillslope, terrace, etc			relief (concave, conve		Slope	(%): 5-7%
Subregion (LRR or MLRA): ML					Datu	
Soil Map Unit Name: Dianola			- 4400 to destrono	NWI classific	30 A 0 20 20 20 E	backs-
Are climatic / hydrologic condition	ons on the site typic	al for this time of year? Y	es No _ X	(If no, explain in Re	emarks.)	
Are Vegetation No Soil N	10, or Hydrology _	No significantly distur	bed? Are "Norm	nal Circumstances" p	resent? Yes X	No
Are Vegetation No Soil N	or Hydrology _	No naturally problema	atic? (If needed	, explain any answer	rs in Remarks.)	
SUMMARY OF FINDING	S – Attach site	map showing san	pling point locat	ions, transects	, important fea	itures, etc.
Hydrophytic Vegetation Prese Hydric Soil Present?		X No NoX	Is the Sampled Area		X	.52
Wetland Hydrology Present?	Yes	No X	within a Wetland?	Yes	No_X	
Remarks:	300000	10.00000				
Total rainfall in the six moderates (62%) above normal within uplands due to the	r rainfàll total wa nal May-October	s 1.89 inches above rainfall for the surve	the ANNUAL rainf y area. Sample Po	all total for the su int 2RF was dete	urvey area, and ermined to be lo	12.38
HYDROLOGY						
Wetland Hydrology Indicato	rs:			Secondary Indica	tors (minimum of tv	vo required)
Primary Indicators (minimum	of one is required; ch	neck all that apply)		Surface Soil	Cracks (B6)	
Surface Water (A1)	32 <u></u>	Aquatic Fauna (B13)		Sparsely Vegetated Concave Surface (B8)		
High Water Table (A2)	_	Marl Deposits (B15) (LRI	R U)	Drainage Pat	terns (B10)	8 %
Saturation (A3)	8 - 19	Hydrogen Sulfide Odor (	C1)	Moss Trim Li	nes (B16)	
Water Marks (B1)		Oxidized Rhizospheres a	long Living Roots (C3)	Dry-Season \	Water Table (C2)	
Sediment Deposits (B2)		Presence of Reduced Iro		Crayfish Burr	ows (C8)	
Drift Deposits (B3)		Recent Iron Reduction in			sible on Aerial Imag	gery (C9)
Algal Mat or Crust (B4)	<u></u>	Thin Muck Surface (C7)		Geomorphic		A CONTRACTOR OF THE PROPERTY O
Iron Deposits (B5)	72 <u>-2</u> 2	Other (Explain in Remark	(S)	Shallow Aqui	tard (D3)	
Inundation Visible on Aer	ial Imagery (B7)			FAC-Neutral		
Water-Stained Leaves (B					noss (D8) (LRR T, L	J)
Field Observations:			Î			
Surface Water Present?	Yes No	X Depth (inches):	None			
Water Table Present?	Yes No	X Depth (inches):	None			
Saturation Present? (includes capillary fringe)	Yes No	X Depth (inches):	None Wetland	l Hydrology Presen	t? Yes	No X
Describe Recorded Data (stre	am gauge, monitorir	ng well, aerial photos, pre	vious inspections), if a	vailable:		
ArcGIS basemap.	500 NEW					
Remarks:						
Wetland hydrology	was not prese	ent at Sample Po	int 2RF.			

/EGETATION	(Five Strata)	_ l lea sciantific	names of plants.
VEGETATION	(Five Strata) -	- Ose scientino	marnes or plants.

Sampling Point:
ator   Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC:3 (A)
Total Number of Dominant
Species Across All Strata: 3 (B)
Percent of Dominant Species
— That Are OBL, FACW, or FAC: 100% (A/B
Prevalence Index worksheet:
Total % Cover of: Multiply by:
OBL species x1 =
FACW species x 2 =
FAC species x 2 =
FACU species
500 HOLD SHIP STORY - 100 STOR
UPL species x 5 =
Column Totals: (A) (B)
Prevalence Index = B/A =
Hydrophytic Vegetation Indicators:
1 - Rapid Test for Hydrophytic Vegetation
2 - Dominance Test is >50%
3 - Prevalence Index is ≤3.0¹
Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
— Indicators of hydric soil and wetland hydrology must
be present, unless disturbed or problematic.
Definitions of Five Vegetation Strata:
Total 18 (and the lands and today and the lands
Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
Copling Woody plants avaluding woody vince
Sapling – Woody plants, excluding woody vines, W approximately 20 ft (6 m) or more in height and less
than 3 in. (7.6 cm) DBH.
Shrub – Woody plants, excluding woody vines,
approximately 3 to 20 ft (1 to 6 m) in height.
—   —   Herb – All herbaceous (non-woody) plants, including
herbaceous vines, regardless of size, and woody
plants, except woody vines, less than approximately
3 ft (1 m) in height.
Woody vine - All woody vines, regardless of height.
<del>-</del>
%
<del>''</del>
<u> </u>
<u> </u>
— Hydrophytic
Vegetation Present? Yes X No
— Fresenti fes NO
- - -

SOIL Sampling Point: 2RF

Depth (inches)	Matrix			x Features			the absence		150	
(inches)	Color (moist)	%	Color (moist)	% reatures	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	alo:	Remarks	
0-8"	10YR 4/2	100%					Loamy sand			
8-18"	10YR 6/2	100%					Loamy sand	0		-
	- 101111072			- 135						
g.	7. 6			-70			<u> </u>	7		
	50 s	<del>-</del>		7.0.						
								9		
1Type: C=C		- —— - oletion PM-	Peduced Matrix M	S-Macked	Sand Gra	ine	2l ocation:	DI -Dore I	ining, M=Matrix	
	Indicators: (Applic	70 70 70 70	707			21113.			matic Hydric S	
Histoso			Polyvalue Be			RR S. T. L			25E2	
	Epipedon (A2)		Thin Dark Su					luck (A10)		
	listic (A3)		Loamy Muck						18) (outside N	LRA 150A,B)
10 100 100 100 100 100 100 100 100 100	en Sulfide (A4)		Loamy Gleye	ed Matrix (F	-2)		Piedme	ont Floodpla	ain Soils (F19)	(LRR P, S, T)
	ed Layers (A5)		Depleted Ma		20				Loamy Soils (F	20)
	Bodies (A6) (LRR F		Redox Dark					RA 153B)	: L (TEO)	
	ucky Mineral (A7) (L		Depleted Da		9 6		27 - D	arent Materi		<b>1</b> \
ES ST. CONTRACTOR	resence (A8) (LRR U uck (A9) (LRR P, T)	וָי	Redox Depre Marl (F10) (L		)			Explain in I	k Surface (TF1: Pemarks)	2)
	ed Below Dark Surface	e (A11)	Depleted Oc		MLRA 15	51)	Other (	Lxpiaiii iii i	(Ciliaiks)	
	ark Surface (A12)	(-1.1)	Iron-Mangan				T) <sup>3</sup> Indic	ators of hyd	drophytic veget	ation and
	Prairie Redox (A16) (	MLRA 150A	1 100 MENDER OF THE PERSON						ogy must be pr	
Sandy	Mucky Mineral (S1) (	LRR O, S)	Delta Ochric	(F17) <b>(ML</b> I	RA 151)		unle	ess disturbe	ed or problemat	ic.
	Gleyed Matrix (S4)		Reduced Ve							
20 April 10	Redox (S5)		Piedmont Flo							
	d Matrix (S6)	6 T III	Anomalous E	Bright Loam	ny Soils (I	-20) (MLR	A 149A, 153C	, 153D)		
	urface (S7) (LRR P, S Layer (if observed)						T			
	151 11 1	•								
										No X
Type: N							Hydria Call	Dragant?	Vaa	
Depth (ir	nches): None		_				Hydric Soil	Present?	Yes	<u> </u>
Depth (ir Remarks:	nches): None	vere not	— present at Sa	amnla F	Point 2	DE.	Hydric Soil	Present?	Yes	NO
Depth (ir Remarks:		vere not	— present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	NO
Depth (ir	nches): None	ere not	 present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	NO
Depth (ir Remarks:	nches): None	vere not	— present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	<u> </u>
Depth (ir Remarks:	nches): None	ere not	— present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	NO
Depth (ir	nches): None	ere not	— present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	NO
Depth (ir Remarks:	nches): None	vere not	— present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	NO
Depth (ir Remarks:	nches): None	vere not	— present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	<u> </u>
Depth (ir	nches): None	vere not	— present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	<u> </u>
Depth (ir Remarks:	nches): None	vere not	— present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	NO
Depth (ir Remarks:	nches): None	rere not	— present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	NO
Depth (ir Remarks:	nches): None	vere not	— present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	NO
Depth (ir	nches): None	vere not	— present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	NO
Depth (ir Remarks:	nches): None	vere not	— present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	NO
Depth (ir Remarks:	nches): None	vere not	— present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	NO
Depth (ir Remarks:	nches): None	vere not	— present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	NO
Depth (ir Remarks:	nches): None	ere not	— present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	NO
Depth (ir	nches): None	vere not	— present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	NO
Depth (ir Remarks:	nches): None	vere not	present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	NO
Depth (ir Remarks:	nches): None	vere not	present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	NO
Depth (ir Remarks:	nches): None	vere not	present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	NO
Depth (ir Remarks:	nches): None	vere not	—present at Sa	ample F	Point 2	RF.	Hydric Soil	Present?	Yes	NO

Project/Site: Redfish Facility	y Survey Are	ea		City/County:	Aransas Pass/S	San Patricio County	Sampling Date: No.	ovember 28, 2018
Applicant/Owner: Project Co	onsulting Ser	rvices, In	c.	227 MDV SHARE		State: TX	Sampling Point: _	RF-SP3
Investigator(s): B.J. Hill				_ Section, Tow	nship, Range: _	N/A		
Landform (hillslope, terrace, e	tc.): Road S	Shoulder		_ Local relief (d	concave, convex	(, none): Convex	Slope	(%): <u>5-7%</u>
Subregion (LRR or MLRA):	/ILRA 150B	in LRR T	Lat: -97.1	5582741	Long:	27.877529713	Datu	ım: WGS84
Soil Map Unit Name: Dianola			1602001636900 <del>18</del> 9			NWI classific	cation: Upland	torestate.
Are climatic / hydrologic cond		site typical	for this time of y	ear? Yes				
Are Vegetation No , Soil _							present? Yes X	No
Are Vegetation No , Soil _		200	- 1 km	-		explain any answe		
SUMMARY OF FINDIN	GS – Atta	ch site	map showin	g sampling				atures, etc.
Hydrophytic Vegetation Pres	sent?	Yes	NoX					
Hydric Soil Present?		Yes	No_X		Sampled Area		N X	
Wetland Hydrology Present	?	Yes	NoX	withir	n a Wetland?	Yes	No _X	į
Remarks:								
Service, the May-Octobe (62%) above normal Ma due to the dominance of	y-October r	ainfall fo	or the survey a	area. Sample	Point 3RF w	as determined to	be located with	in uplands
HYDROLOGY								
Wetland Hydrology Indica	tors:					Secondary Indica	ators (minimum of to	wo required)
Primary Indicators (minimum	n of one is rec	quired; che	eck all that apply	)		Surface Soil	Cracks (B6)	
Surface Water (A1)		A	quatic Fauna (B	13)		Sparsely Ve	getated Concave S	urface (B8)
High Water Table (A2)		N	Marl Deposits (B1	15) (LRR U)		Drainage Pa	itterns (B10)	
Saturation (A3)		_ +	lydrogen Sulfide	Odor (C1)		Moss Trim L	ines (B16)	
Water Marks (B1)			xidized Rhizosp	577.1	ving Roots (C3)	Dry-Season	Water Table (C2)	
Sediment Deposits (B2)	1	F	resence of Redu	uced Iron (C4)		Crayfish Bur	rows (C8)	I November
Drift Deposits (B3)		F	Recent Iron Redu	ction in Tilled	Soils (C6)	Saturation V	isible on Aerial Ima	gery (C9)
Algal Mat or Crust (B4)			hin Muck Surfac				Position (D2)	
Iron Deposits (B5)			Other (Explain in	Remarks)		Shallow Aqu		
Inundation Visible on A		(B7)				FAC-Neutral	A CONTRACTOR OF THE SECOND CONTRACTOR	
Water-Stained Leaves (	B9)					Sphagnum r	noss (D8) (LRR T, I	J)
Field Observations:	24	. v		s). None				Ï
Surface Water Present?			Depth (inche					
Water Table Present?			Depth (inche				essa. Satore	- V
Saturation Present? (includes capillary fringe)	Yes	_ No^	Depth (inche	s): None	Wetland	Hydrology Preser	nt? Yes	No X
Describe Recorded Data (st ArcGIS basemap.	ream gauge,	monitoring	g well, aerial pho	tos, previous ir	nspections), if av	vailable:		
Remarks:								
Wetland hydrology	was not	nrasa	nt at Samn	le Point 3	RE			
vveliand nydrology 	was not	prese	nt at Samp	ie i oliit o	IXI .			

<b>VEGETATION</b>	(Five Strata)	<ul> <li>Use scientific</li> </ul>	names of plants.
-------------------	---------------	------------------------------------	------------------

	nes of pla	A. 100.		Sampling Point:
N/A		Dominant		Dominance Test worksheet:
ree Stratum (Plot size: N/A )		Species?		Number of Dominant Species That Are OBL, FACW, or FAC:1 (A)
				T (1) November 1
				Total Number of Dominant Species Across All Strata:  3 (B)
				(B)
				Percent of Dominant Species That Are ORL FACW or FAC: 33%
				That Are OBL, FACW, or FAC:(A/
				Prevalence Index worksheet:
		= Total Cov		Total % Cover of: Multiply by:
50% of total cover:	20% of	total cover:	-	OBL species x 1 =
apling Stratum (Plot size: N/A )				FACW species x 2 =
·				FAC species x 3 =
-			-	
Š				FACU species x 4 =
				UPL species x 5 =
				Column Totals: (A) (E
				Prevalence Index = B/A =
		= Total Cov	er	- 12 - 12 - 12 - 12 - 12 - 12 - 12 - 12
50% of total cover:	e de			Hydrophytic Vegetation Indicators:
Shrub Stratum (Plot size: 30 ft x 30 ft )		00401.	×	1 - Rapid Test for Hydrophytic Vegetation
Holianthus argonhyllus	10%	Yes	NI	2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.0 <sup>1</sup>
			-	Problematic Hydrophytic Vegetation¹ (Explain)
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
i			<del></del>	be present, unless disturbed or problematic.
b				Definitions of Five Vegetation Strata:
	10%	= Total Cov	er	Tree – Woody plants, excluding woody vines,
50% of total cover: 5%	20% of	total cover:		approximately 20 ft (6 m) or more in height and 3 in.
lerb Stratum (Plot size: 30 ft x 30 ft )				(7.6 cm) or larger in diameter at breast height (DBH).
_ Megathyrsus maximus	50%	Yes	FAC	Sapling – Woody plants, excluding woody vines,
Bothriochloa ischaemum	50%	_Yes	NI_	approximately 20 ft (6 m) or more in height and less
				than 3 in. (7.6 cm) DBH.
				Shrub – Woody plants, excluding woody vines,
				approximately 3 to 20 ft (1 to 6 m) in height.
**************************************			-	Herb – All herbaceous (non-woody) plants, including
**************************************				herbaceous vines, regardless of size, and woody
·				plants, except woody vines, less than approximately
•				3 ft (1 m) in height.
				Woody vine - All woody vines, regardless of height.
0				
1				
		= Total Cov		
50% of total cover: 50%	20% of	total cover:	20%	
Voody Vine Stratum (Plot size: N/A )				
			n 3:1	
		7 <u>-</u>		I
·				Hydrophytic
·		= Total Cov		Hydrophytic   Vegetation   Present?   Yes No _X

3RF

SOIL Sampling Point:

	cription: (Describe	to the depth				or confirm	the absence	of indicate	ors.)	
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Features %	s Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-4"	10YR 3/2	100%	(	•			Loamy sand			
-	8 8			<del>-</del> 0			-			
2	9 2	::		-00	-		<u> </u>	<u> </u>		
	% <u>2</u>	<u> </u>					<u> </u>			
	8 <del>S</del>	50 iz		-100	1			,		3.
<u> </u>	× <del></del>						<del></del>			
	S. S.						-			
	·						-			
	oncentration, D=Dep	70 PV 70 TO TOTAL TO THE TOTAL TO				ains.			ining, M=Matr	
	Indicators: (Applic	able to all LF							matic Hydric	Soils":
Histoso			Polyvalue Be						-	
	pipedon (A2)		Thin Dark Su					luck (A10)		
A PROSE COCONTROL	istic (A3) en Sulfide (A4)		Loamy Muck	A secretary and a second		(0)				MLRA 150A,B)
	d Layers (A5)		Loamy Gleye _ Depleted Ma		F2)		St. Description		ain Soils (F19 : Loamy Soils	) (LRR P, S, T)
	: Bodies (A6) (LRR P	T III	Redox Dark		6)		200000000000000000000000000000000000000	(A 153B)	. Loanly dolls	(1 20)
	ucky Mineral (A7) (LF		Depleted Da					rent Mater	ial (TF2)	
	resence (A8) (LRR U		Redox Depre						k Surface (TF	12)
a de la companiona de l	uck (A9) (LRR P, T)	Á	Marl (F10) (L	RR U)	si.			Explain in		
Deplete	d Below Dark Surfac	e (A11)	Depleted Oc	hric (F11)	(MLRA 1	51)				
Thick D	ark Surface (A12)		Iron-Mangan	ese Mass	es (F12) <b>(</b>	LRR O, P,	T) <sup>3</sup> Indica	ators of hyd	drophytic vege	etation and
A SERVICE CONTROL OF	rairie Redox (A16) <b>(N</b>	The second secon	Umbric Surfa	00001/10001/0 10001000000	60 - DO - DO - DO - DO - DO - DO	, U)			ogy must be p	
3 (1	Mucky Mineral (S1) (L	.RR O, S)	Delta Ochric					ss disturbe	ed or problema	atic.
	Gleyed Matrix (S4)		Reduced Ve							
S 40-10 VI (B)	Redox (S5)		Piedmont Flo				19A) RA 149A, 153C,	152D)		
	d Matrix (S6) ırface (S7) <b>(LRR P, S</b>	E T 11)	Anomalous i	Silgili Loai	rry Solis (	F20) (WILK	A 149A, 155C,	1550)		
	Layer (if observed):									
Type: _G										
	ches): 4 inches						Hydric Soil	Dresent?	Yes	No X
Remarks:			<del>-</del> -				Tiyane con	r i e seint :	163	
	Hydric soils w	ere not n	resent at Sa	amnla l	Point 3	RF				
	riyano sons w	cic not p	resent at of	ampic i	Onto	/I XI .				

3RF

Project/Site: Redfish Facility Survey Area	City/County: Aransas Pass/San Patricio County Sampling Date: November 28, 2018
Applicant/Owner: Project Consulting Services, Inc.	State: TX Sampling Point: RF-SP4
Investigator(s): B.J. Hill	Section, Township, Range: N/A
	Local relief (concave, convex, none): None Slope (%): 2-3%
	7.1552247338 Long: 27.8763613068 Datum: WGS84
Soil Map Unit Name: Dianola Soils	NWI classification: Upland
Are climatic / hydrologic conditions on the site typical for this time	of year? Yes NoX (If no, explain in Remarks.)
Are Vegetation No , Soil No , or Hydrology No significa	antly disturbed? Are "Normal Circumstances" present? Yes X No
Are Vegetation No , Soil No , or Hydrology No naturall	
	ving sampling point locations, transects, important features, etc.
Hydrophytic Vegetation Present? YesX No	
Hydric Soil Present? Yes X No	
Wetland Hydrology Present? YesX No  Remarks:	
the May-October rainfall total was 1.89 inches above the Anormal May-October rainfall for the survey area. Sample F	Survey was 32.52-inches. According to NOAA's National Weather Service, ANNUAL rainfall total for the survey area, and 12.38 inches (62%) above Point 4RF was determined to be located within wetlands due to the Iric soils and the presence of wetland hydrology at the sample plot.
HYDROLOGY	
Wetland Hydrology Indicators:	Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that ap	pply) Surface Soil Cracks (B6)
Surface Water (A1) X Aquatic Fauna	(B13) Sparsely Vegetated Concave Surface (B8)
X High Water Table (A2) Marl Deposits	(B15) (LRR U) Drainage Patterns (B10)
X Saturation (A3) Hydrogen Sulf	ide Odor (C1) Moss Trim Lines (B16)
Particular and the second of t	ospheres along Living Roots (C3) Dry-Season Water Table (C2)
Sediment Deposits (B2) Presence of R	TO SECURE OF THE PROPERTY OF T
	eduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4) Thin Muck Sur	
Iron Deposits (B5) Other (Explain	
Inundation Visible on Aerial Imagery (B7)	X FAC-Neutral Test (D5)
Water-Stained Leaves (B9)	Sphagnum moss (D8) (LRR T, U)
Field Observations:	Name Name
Surface Water Present? Yes No _X Depth (inc	450000000000000000000000000000000000000
Water Table Present? Yes X No Depth (inc	I I
Saturation Present? Yes X No Depth (includes capillary fringe)	ches): Surface Wetland Hydrology Present? Yes X No
Describe Recorded Data (stream gauge, monitoring well, aerial p	photos, previous inspections), if available:
ArcGIS basemap.	~
Remarks:	
Wetland hydrology was present at Sample	Point 4RF due to the presence of a High Water Table
	per 12-inches of the soil profile, the presence of Drift
1 ' '	ne Geomorphic Position (D2) of the sample plot (lower
	. , , , , , , , , , , , , , , , , , , ,
portions of the landscape), and passing the	= 1 AO-Neullal Test (DO).

VECETATION .	(Circa Chrone)	Llas scientific name	a of planta
VEGETATION	(rive Siraia) –	Use scientific name	es of plants.

EGETATION (Five Strata) – Use scientific nam	nes of pla	ants.		Sampling Point: 4RF
To Control N/A		Dominant		Dominance Test worksheet:
4	% Cover	Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
2.				Total Number of Dominant
3				Species Across All Strata: 4 (B)
1				Percent of Dominant Species
5				That Are OBL, FACW, or FAC:100% (A/B)
5				
		= Total Cov	er	Prevalence Index worksheet:
50% of total cover:	_ 20% of	total cover:		Total % Cover of: Multiply by:
Sapling Stratum (Plot size: N/A )				OBL species x 1 =
l.				FACW species x 2 =
2.				FAC species x 3 =
3				FACU species x 4 =
1.				UPL species x 5 =
5				Column Totals: (A) (B)
5.				Prevalence Index = B/A =
		= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of	total cover:		1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 30 ft x 30 ft )	800 E00 E00 E00 E00 E00 E00 E00 E00 E00			2 - Dominance Test is >50%
1. Avicennia germinans	20%	Yes	OBL	3 - Prevalence Index is ≤3.0 <sup>1</sup>
2.				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3.				Problematic Hydrophytic Vegetation (Explain)
4.		N		11-4:
5				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
6.			18	Definitions of Five Vegetation Strata:
	20%	= Total Cov	er	
50% of total cover:10%				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 30 ft x 30 ft )				(7.6 cm) or larger in diameter at breast height (DBH).
Spartina patens	40%	Yes	FACW	Sapling – Woody plants, excluding woody vines,
2. Sporobolus virginicus	20%	Yes	FACW	approximately 20 ft (6 m) or more in height and less
Borrichia frutescens	20%	_Yes	OBL	than 3 in. (7.6 cm) DBH.
4. Batis maritima	15%	No	OBL	Shrub – Woody plants, excluding woody vines,
5. Spartina alterniflora	5%	No	OBL	approximately 3 to 20 ft (1 to 6 m) in height.
5				Herb - All herbaceous (non-woody) plants, including
7				herbaceous vines, regardless of size, and woody
3				plants, except woody vines, less than approximately 3 ft (1 m) in height.
9				
10				Woody vine – All woody vines, regardless of height.
1.				
	100%	= Total Cov	er	
50% of total cover: 50%				
Noody Vine Stratum (Plot size: N/A )			· · · · · · · · · · · · · · · · · · ·	
,				
·				
3.				
5.				
		= Total Cov		Hydrophytic Vegetation
50% of total cover:	t t			Present? Yes X No

SOIL Sampling Point: 4RF

Depet C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.   Occation: PL=Pore Lining, M=Matrix.	(inches) 0-8"	Matrix		Redox	Features				
ppe: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.  dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)	'-8"	Color (moist)	%		600°700°		Loc <sup>2</sup>	Texture	Remarks
dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)	_	10YR 4/1	100%					Loamy sand	
dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)									
dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)					-				
dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)		<u> </u>						<u> </u>	
dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)			-52						<u>,                                    </u>
dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)									
dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)									
dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)		S			-				
dric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)  Histosol (A1)		oncontrotion D-Dor	 Notion DM-E	adused Metrix MS	·———	Cond Cro	inc	2l eastion:	DI - Doro Lining M-Metrix
Histosol (A1)	10000		70 00 20 100 1000				11115.		
Histic Epipedon (A2)			ADIO TO GII EI				PPGTII		
Black Histic (A3)									
Hydrogen Sulfide (A4)									
Stratified Layers (A5)	TO HAS TONE DOMINISTRUM	1011CN97725 NOSCIONANA					•		
Depleted Dark Surface (F7) Red Parent Material (TF2)  Muck Presence (A8) (LRR U) Redox Depressions (F8) Very Shallow Dark Surface (TF12)  1 cm Muck (A9) (LRR P, T) Marl (F10) (LRR U) Other (Explain in Remarks)  Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151)  Thick Dark Surface (A12) Iron-Manganese Masses (F12) (LRR O, P, T) Iron-Manganese Masses (F12) (LRR O, P, T)  Sandy Mucky Mineral (S1) (LRR O, S) Delta Ochric (F17) (MLRA 151) unless disturbed or problematic.  Sandy Gleyed Matrix (S4) Reduced Vertic (F18) (MLRA 150A, 150B)  Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 149A)  Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)  Dark Surface (S7) (LRR P, S, T, U)  Strictive Layer (if observed):  Type: Shell Hash Depth (inches): 8 inches  Hydric Soil Present? Yes X No marks:  Hydric soils were assumed due to the dominance of only obligate and facultative wetland				A CONTRACTOR OF THE PROPERTY O				50 DAGGGGGGG	
Muck Presence (A8) (LRR U) Redox Depressions (F8) Other (Explain in Remarks)  1 cm Muck (A9) (LRR P, T) Marl (F10) (LRR U) Other (Explain in Remarks)  Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151)  Thick Dark Surface (A12) Iron-Manganese Masses (F12) (LRR O, P, T) Iron-Manganese Masses (F12) (LRR O, P, T) Wetland hydrology must be present, unless disturbed or problematic.  Sandy Mucky Mineral (S1) (LRR O, S) Delta Ochric (F17) (MLRA 151) unless disturbed or problematic.  Sandy Redox (S5) Reduced Vertic (F18) (MLRA 150A, 150B)  Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)  Strictive Layer (if observed):  Type: Shell Hash Depth (inches): 8 inches Hydric Soil Present? Yes X No Marks:  Hydric Soils were assumed due to the dominance of only obligate and facultative wetland	_ Organic	Bodies (A6) (LRR F	², T, U)	Redox Dark S	Surface (F	3)		(MLF	RA 153B)
1 cm Muck (A9) (LRR P, T)	_ 5 cm Mi	ucky Mineral (A7) <b>(L</b>	RR P, T, U)	Depleted Dar	k Surface	(F7)		Red Pa	arent Material (TF2)
Depleted Below Dark Surface (A11) Depleted Ochric (F11) (MLRA 151)  Thick Dark Surface (A12) Iron-Manganese Masses (F12) (LRR O, P, T) Iron-Manganese Masses (F12) (LRR O, P, T) Iron-Manganese Masses (F12) (LRR O, P, T) Wetland hydrology must be present, unless disturbed or problematic.  Sandy Mucky Mineral (S1) (LRR O, S) Delta Ochric (F17) (MLRA 151) Unless disturbed or problematic.  Sandy Gleyed Matrix (S4) Reduced Vertic (F18) (MLRA 150A, 150B)  Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 149A)  Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)  Dark Surface (S7) (LRR P, S, T, U)  strictive Layer (if observed):  Type: Shell Hash  Depth (inches): 8 inches  Hydric Soil Present? Yes X No Marks:  Hydric soils were assumed due to the dominance of only obligate and facultative wetland			J)	A STATE OF THE STA		)			
Thick Dark Surface (A12)								Other (	(Explain in Remarks)
Coast Prairie Redox (A16) (MLRA 150A) Umbric Surface (F13) (LRR P, T, U) wetland hydrology must be present, unless disturbed or problematic.  Sandy Mucky Mineral (S1) (LRR O, S) Delta Ochric (F17) (MLRA 151) unless disturbed or problematic.  Sandy Gleyed Matrix (S4) Reduced Vertic (F18) (MLRA 150A, 150B)  Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 149A)  Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)  Dark Surface (S7) (LRR P, S, T, U)  strictive Layer (if observed):  Type: Shell Hash  Depth (inches): 8 inches			e (A11)					<b>-</b> v 3:_a:-	
Sandy Mucky Mineral (S1) (LRR O, S) Delta Ochric (F17) (MLRA 151) unless disturbed or problematic.  Sandy Gleyed Matrix (S4) Reduced Vertic (F18) (MLRA 150A, 150B)  Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 149A)  Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)  Strictive Layer (If observed):  Type: Shell Hash  Depth (inches): 8 inches	LL DOS GUOVANESSO ASVOYS		MI DA 450A\	II INSTRUMENT OF THE PROPERTY OF			TOWNSHIP THE CONTROL OF THE		
Sandy Gleyed Matrix (S4) Reduced Vertic (F18) (MLRA 150A, 150B) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 149A) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)  Strictive Layer (if observed): Type: Shell Hash Depth (inches): 8 inches	The separate paraget was	Appropriate Company of the Company o	CONTRACTOR INVESTMENT				U)		
Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 149A) Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)  Strictive Layer (if observed):  Type: Shell Hash Depth (inches): 8 inches	- 10 1000 AND		LIKIK O, O)		AN PROPERTY AND PROPERTY.	Chicago and the state	0A 150B)	dille	ess disturbed of problematic.
Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)  Dark Surface (S7) (LRR P, S, T, U)  Strictive Layer (if observed):  Type: Shell Hash  Depth (inches): 8 inches  Hydric Soil Present? Yes X No  marks:  Hydric soils were assumed due to the dominance of only obligate and facultative wetland				50 STATE OF THE ST				9A)	
Dark Surface (S7) (LRR P, S, T, U)  strictive Layer (if observed):  Type: Shell Hash Depth (inches): 8 inches  Hydric Soil Present? Yes X No  marks:  Hydric soils were assumed due to the dominance of only obligate and facultative wetland	- 12 April 10 12 1	an mana manana di manaharan		A STATE OF THE STA					, 153D)
Type: Shell Hash  Depth (inches): 8 inches  Hydric Soil Present? Yes X No  marks:  Hydric soils were assumed due to the dominance of only obligate and facultative wetland	_ Dark Su	ırface (S7) (LRR P,	S, T, U)	e <del></del>	474	2 8			
Depth (inches): 8 inches  marks:  Hydric Soil Present? Yes X No  Hydric soils were assumed due to the dominance of only obligate and facultative wetland		• • •	:						
Hydric soils were assumed due to the dominance of only obligate and facultative wetland	Type: Sh	nell Hash		_					
Hydric soils were assumed due to the dominance of only obligate and facultative wetland	Depth (in	ches): 8 inches		_				Hydric Soil	Present? Yes X No
	emarks:							X	
		Hvdric soils w	ere assu	med due to t	the dor	ninano	ce of or	ılv obligat	e and facultative wetland
vegetation and an abrupt westand boundary.		•						,	
		vogotation an	a an abre	apt Wottaria t	Journac	y .			

Project/Site: Redfish Facility	Survey Area	City/Co	ounty: Aransas Pass/S	San Patricio County	Sampling Date: No	vember 28, 2018
Applicant/Owner: Project Con	sulting Services, Inc.		Sis	State: TX	Sampling Point:	RF-SP5
Investigator(s): B.J. Hill		Section	n, Township, Range: _			
Landform (hillslope, terrace, etc					Slope	(%): 2-3%
Subregion (LRR or MLRA): ML					Datu	
Soil Map Unit Name: Dianola			McGodella Bass	NWI classifica	50 A 0-00 a 51	Decorate:
Are climatic / hydrologic condition	ons on the site typical for	this time of year? Ye	es NoX	(If no, explain in Re	emarks.)	
Are Vegetation No , Soil N	lo_, or Hydrology No	significantly disturb	ed? Are "Norm	al Circumstances" p	resent? Yes X	No
Are Vegetation No Soil N	lo, or HydrologyNo	naturally problema	tic? (If needed	, explain any answer	rs in Remarks.)	
SUMMARY OF FINDING	S – Attach site m	ap showing sam	pling point locat	ions, transects	, important fea	tures, etc.
Hydrophytic Vegetation Prese		No	Is the Sampled Area			
Hydric Soil Present?	Yes	No X	within a Wetland?	Yes	NoX	
Wetland Hydrology Present?	Yes	NoX		(1)	D 20	
Remarks: Total rainfall in the six mode Service, the May-Octobe inches (62%) above norm within uplands due to the	r rainfàll total was 1. nal May-October rai	 89 inches above to nfall for the survey	he ANNUAL rainfa area. Sample Po	all total for the suint 5RF was dete	urvey area, and ermined to be lo	12.38
	lack of flydric soils			. the sample plot	•	72
HYDROLOGY				0 1 1 1		1 15
Wetland Hydrology Indicato				All processor Williams and	tors (minimum of tv	vo requirea)
Primary Indicators (minimum o				Surface Soil (		
Surface Water (A1)		atic Fauna (B13)	•••		etated Concave Su	urface (B8)
High Water Table (A2)		Deposits (B15) (LRR		Drainage Pat		
Saturation (A3)	S	rogen Sulfide Odor (C		Moss Trim Li		
Water Marks (B1)			ong Living Roots (C3)		Nater Table (C2)	
Sediment Deposits (B2)		ence of Reduced Iron		Crayfish Burr		(00)
Drift Deposits (B3)		ent Iron Reduction in	filled Solls (Cb)		sible on Aerial Imaç	jery (C9)
Algal Mat or Crust (B4)		Muck Surface (C7) er (Explain in Remarks		Geomorphic		
Iron Deposits (B5)	10-10-10-10-10-10-10-10-10-10-10-10-10-1	er (Explain in Remarks	5)	Shallow Aquit FAC-Neutral		
Inundation Visible on Aeri Water-Stained Leaves (B					noss (D8) <b>(LRR T, l</b>	n.
Field Observations:	<del>)</del>		T	Spriagnum m	ioss (Do) (LKK I, C	,)
Surface Water Present?	Yes No _X	Depth (inches):	lone			
Water Table Present?	Yes No _X	Deptil (mories).				
Saturation Present?	Yes No _X		lone Wetland	Hydrology Presen	t? Yes	No_X_
(includes capillary fringe)		1 1570 52 550/65		5 4550	<del></del>	
Describe Recorded Data (stre ArcGIS basemap.	am gauge, monitoring w	ell, aerial photos, prev	rious inspections), if av	/ailable:		
Remarks:						
Wetland hydrology v	was not present	at Sample Poi	nt 5RF			

VEGETATION	(Five	Strata).	_ L	ISA	scientific	names	of	nlan	te

EGETATION (Five Strata) – Use scientific na	ames of pla	nts.		Sampling Point:5RF
N/A	Absolute			Dominance Test worksheet:
<u>ree Stratum</u> (Plot size: <u>N/A</u> ))	% Cover		<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
				Total Number of Dominant
<u> </u>				Species Across All Strata: 2 (B)
				Percent of Dominant Species
·				That Are OBL, FACW, or FAC: 50% (A/B)
	=	Total Co	ver	Prevalence Index worksheet:
50% of total cover:	20% of t	otal cover		Total % Cover of: Multiply by:
Sapling Stratum (Plot size: N/A )				OBL species 0 x 1 = 0
·				FACVV species X Z =
· <u>-</u>				FAC species x s =
,			101 E	x 4 =
×				UPL species x 5 = 50
i.,				Column Totals:(A)(B)
				Prevalence Index = B/A = 3.0
		: Total Co	ver	Prevalence index = BA =
50% of total cover:	· · · · · · · · · · · · · · · · · · ·			Hydrophytic Vegetation Indicators:
Shrub Stratum (Plot size: 30 ft x 30 ft )	2070 011			1 - Rapid Test for Hydrophytic Vegetation
Helianthus argophyllus	10%	Yes	NI	2 - Dominance Test is >50%
2.				✓ 3 - Prevalence Index is ≤3.0 <sup>1</sup>
			**************************************	Problematic Hydrophytic Vegetation¹ (Explain)
s			2) <u> </u>	
l				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
5	<del></del>		<del></del>	be present, unless disturbed or problematic.
S	10%	- 14 enne		Definitions of Five Vegetation Strata:
50% of total cover:5		: Total Co :otal cover		Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
Paspalum monostachyum	50%	Yes	FACW	
Andropogon glomeratus	20%	Yes	FACW	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
Schizachyrium scoparium	20%	Yes	FACU	than 3 in. (7.6 cm) DBH.
Ambrosia psilostachya	10%	No	FAC	Should 10 (and unleasted expluding unadductions
**************************************		INU	<u> IAC</u>	Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
·	-			
				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
				plants, except woody vines, less than approximately
k- <u>-</u>				3 ft (1 m) in height.
,				Woody vine – All woody vines, regardless of height.
0				, , , , , , , , , , , , , , , , , , , ,
1				
	100% =			
50% of total cover:50	<u>%</u> 20% of t	otal cover	20%	
Voody Vine Stratum (Plot size: N/A )				
<u> </u>				
š				
			07 <u> </u>	
j				Hydrophytic
				Vegetation
				Present? Yes X No No
50% of total cover:	20% of t	otal cover	•	Flesent: les NO

SOIL Sampling Point: \_

	cription: (Describe	to the depth				or confirm	the absence	of indicate	ors.)	
Depth (inches)	Matrix Color (moist)	<u></u> %	Redo Color (moist)	<u>x Features</u> %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-18"	10YR 4/2	100%	COIOI (IIIOISE)		1100		Loamy sand		rtomants	
	8			-0.				d.		
							-			
		<u> </u>					-			
	8 8	******		-1.01	· · · · · · · · · · · · · · · · · · ·					
	× <del></del>			*						
	% <del>2</del>							47		
	9	. ———		-			_	-		
200 HOUSE HOUSE	oncentration, D=Dep	70 PV 70 TO TO TO THE POST OF	100 March 1980 1980 1980 1980 1980 1980 1980 1980			ains.			ining, M=Matr	
	Indicators: (Applic	able to all LR							matic Hydric	Soils':
Histoso			Polyvalue Be							
	pipedon (A2)		Thin Dark Su					luck (A10)		
JC Noch forecontrolleron	istic (A3)		Loamy Muck		77. 7.084 (\$7.04.5647.46.479	0)			18) <b>(outside l</b>	
	en Sulfide (A4) d Layers (A5)		Loamy Gleye Depleted Ma		-2)				ain Soils (F19) Loamy Soils (	
	: Bodies (A6) (LRR P	TID	Redox Dark		3)			(1003 Bright RA 153B)	Loanly Golls (	F20)
	ucky Mineral (A7) (LI		Depleted Da	27			- 0. <sup>65</sup> 1/2*-10	arent Mater	ial (TF2)	
	resence (A8) (LRR L		Redox Depre		9 6				k Surface (TF1	2)
	uck (A9) (LRR P, T)	,	Marl (F10) (L		,			Explain in		,
	d Below Dark Surfac	e (A11)	Depleted Oc		MLRA 1	51)	G	12 25		
Thick D	ark Surface (A12)		Iron-Mangan	ese Masse	s (F12) (I	LRR O, P,	T) <sup>3</sup> Indic	ators of hy	drophytic vege	tation and
The property of their the	rairie Redox (A16) <b>(f</b>	THE REPORTS OF THE PROPERTY OF	Umbric Surfa	SECURIOR SEC		, U)		massing and some more and	ogy must be p	
30 300000000000000000000000000000000000	Mucky Mineral (S1) (I	LRR O, S)	Delta Ochric					ess disturbe	ed or problema	tic.
	Gleyed Matrix (S4)		Reduced Ve							
	Redox (S5)		Piedmont Flo					452D)		
	d Matrix (S6) urface (S7) <b>(LRR P, \$</b>	S T 111	Anomalous i	sright Loam	ny Solis (i	-20) (NILK	A 149A, 153C	, 153U)		
	Layer (if observed):						T			
Type: N	151 11 1									
	ches): None		_				Hydric Soil	Present?	Yes	No X
Remarks:							I II Julio Goil	11030111.		
	Hydric soils w	ere not p	resent at Sa	ample F	Point 5	RF				
	riyano oono w	oro not p	rosoni ai oi	arripio i	Ollito					

5RF

Project/Site: Redfish Facility	Survey Area	City/Co	ounty: Aransas Pass/S	San Patricio County	Sampling Date: No	vember 28, 2018
Applicant/Owner: Project Con	sulting Services, Inc.		Sis	State: TX	Sampling Point:	RF-SP5
Investigator(s): B.J. Hill		Section	n, Township, Range: _			
Landform (hillslope, terrace, etc					Slope	(%): 2-3%
Subregion (LRR or MLRA): ML					Datu	
Soil Map Unit Name: Dianola			McGodella Bass	NWI classifica	50 A 0-00 a 51	Decorate:
Are climatic / hydrologic condition	ons on the site typical for	this time of year? Ye	es NoX	(If no, explain in Re	emarks.)	
Are Vegetation No , Soil N	lo_, or Hydrology No	significantly disturb	ed? Are "Norm	al Circumstances" p	resent? Yes X	No
Are Vegetation No Soil N	lo, or HydrologyNo	naturally problema	tic? (If needed	, explain any answer	rs in Remarks.)	
SUMMARY OF FINDING	S – Attach site m	ap showing sam	pling point locat	ions, transects	, important fea	tures, etc.
Hydrophytic Vegetation Prese		No	Is the Sampled Area			
Hydric Soil Present?	Yes	No X	within a Wetland?	Yes	NoX	
Wetland Hydrology Present?	Yes	NoX		(1)	D 20	
Remarks: Total rainfall in the six mode Service, the May-Octobe inches (62%) above norm within uplands due to the	r rainfàll total was 1. nal May-October rai	 89 inches above to nfall for the survey	he ANNUAL rainfa area. Sample Po	all total for the suint 5RF was dete	urvey area, and ermined to be lo	12.38
	lack of flydric soils			. the sample plot	•	72
HYDROLOGY				0 1 1 1		1 15
Wetland Hydrology Indicato				All processor Williams and	tors (minimum of tv	vo requirea)
Primary Indicators (minimum o				Surface Soil (		
Surface Water (A1)		atic Fauna (B13)	•••		etated Concave Su	urface (B8)
High Water Table (A2)		Deposits (B15) (LRR		Drainage Pat		
Saturation (A3)	S	rogen Sulfide Odor (C		Moss Trim Li		
Water Marks (B1)			ong Living Roots (C3)		Nater Table (C2)	
Sediment Deposits (B2)		ence of Reduced Iron		Crayfish Burr		(00)
Drift Deposits (B3)		ent Iron Reduction in	filled Solls (Cb)		sible on Aerial Imaç	jery (C9)
Algal Mat or Crust (B4)		Muck Surface (C7) er (Explain in Remarks		Geomorphic		
Iron Deposits (B5)	10-10-10-10-10-10-10-10-10-10-10-10-10-1	er (Explain in Remarks	5)	Shallow Aquit FAC-Neutral		
Inundation Visible on Aeri Water-Stained Leaves (B					noss (D8) <b>(LRR T, l</b>	n.
Field Observations:	<del>)</del>		T	Spriagnum m	ioss (Do) (LKK I, C	(ו
Surface Water Present?	Yes No _X	Depth (inches):	lone			
Water Table Present?	Yes No _X	Deptil (mories).				
Saturation Present?	Yes No _X		lone Wetland	Hydrology Presen	t? Yes	No_X_
(includes capillary fringe)		1 1570 52 550/65		5 4550	<del></del>	
Describe Recorded Data (stre ArcGIS basemap.	am gauge, monitoring w	ell, aerial photos, prev	rious inspections), if av	/ailable:		
Remarks:						
Wetland hydrology v	was not present	at Sample Poi	nt 5RF			

VEGETATION	(Five	Strata).	_ L	ISA	scientific	names	of	nlan	te

EGETATION (Five Strata) – Use scientific na	ames of pla	nts.		Sampling Point:5RF
N/A	Absolute			Dominance Test worksheet:
<u>ree Stratum</u> (Plot size: <u>N/A</u> ))	% Cover		<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
				Total Number of Dominant
<u> </u>				Species Across All Strata: 2 (B)
				Percent of Dominant Species
·				That Are OBL, FACW, or FAC: 50% (A/B)
	=	Total Co	ver	Prevalence Index worksheet:
50% of total cover:	20% of t	otal cover		Total % Cover of: Multiply by:
Sapling Stratum (Plot size: N/A )				OBL species 0 x 1 = 0
·				FACVV species X Z =
· <u>-</u>				FAC species x s =
,			101 E	x 4 =
×				UPL species x 5 = 50
i.,				Column Totals:(A)(B)
				Prevalence Index = B/A = 3.0
		: Total Co	ver	Prevalence index = BA =
50% of total cover:	· · · · · · · · · · · · · · · · · · ·			Hydrophytic Vegetation Indicators:
Shrub Stratum (Plot size: 30 ft x 30 ft )	2070 011			1 - Rapid Test for Hydrophytic Vegetation
Helianthus argophyllus	10%	Yes	NI	2 - Dominance Test is >50%
2.				✓ 3 - Prevalence Index is ≤3.0 <sup>1</sup>
			**************************************	Problematic Hydrophytic Vegetation¹ (Explain)
s			2) <u> </u>	
l				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
5	<del></del>		<del></del>	be present, unless disturbed or problematic.
S	10%	- 14 enne		Definitions of Five Vegetation Strata:
50% of total cover:5		: Total Co :otal cover		Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
Paspalum monostachyum	50%	Yes	FACW	
Andropogon glomeratus	20%	Yes	FACW	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
Schizachyrium scoparium	20%	Yes	FACU	than 3 in. (7.6 cm) DBH.
Ambrosia psilostachya	10%	No	FAC	Should 10 (and unleasted expluding unadductions
**************************************		INU	<u> IAC</u>	Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
·	-			
				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
				plants, except woody vines, less than approximately
k- <u>-</u>				3 ft (1 m) in height.
,				Woody vine – All woody vines, regardless of height.
0				, , , , , , , , , , , , , , , , , , , ,
1				
	100% =			
50% of total cover:50	<u>%</u> 20% of t	otal cover	20%	
Voody Vine Stratum (Plot size: N/A )				
<u> </u>				
š				
			07 <u> </u>	
j				Hydrophytic
				Vegetation
				Present? Yes X No No
50% of total cover:	20% of t	otal cover	•	Flesent: les NO

SOIL Sampling Point: \_

	cription: (Describe	to the depth				or confirm	the absence	of indicate	ors.)	
Depth (inches)	Matrix Color (moist)	<u></u> %	Redo Color (moist)	<u>x Features</u> %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-18"	10YR 4/2	100%	COIOI (IIIOISE)		1100		Loamy sand		rtomants	
	8			-0.				d <del>.</del>		
							-			
		<u> </u>						T		
	8 8			-1.01	· · · · · · · · · · · · · · · · · · ·					
	× <del></del>			*						
	% <del>2</del>							47		
	9	. ———		-			_	-		
200 HOUSE HOUSE	oncentration, D=Dep	70 PV 70 TO TO TO THE POST OF	100 March 1980 1980 1980 1980 1980 1980 1980 1980			ains.			ining, M=Matr	
	Indicators: (Applic	able to all LR							matic Hydric	Soils':
Histoso			Polyvalue Be							
	pipedon (A2)		Thin Dark Su					luck (A10)		
JC Noch forecontrolleron	istic (A3)		Loamy Muck		77. 7.084 (\$7.04.5647.46.479	0)			18) <b>(outside l</b>	
	en Sulfide (A4) d Layers (A5)		Loamy Gleye Depleted Ma		-2)				ain Soils (F19) Loamy Soils (	
	: Bodies (A6) (LRR P	TID	Redox Dark		3)			(1003 Bright RA 153B)	Loanly Golls (	F20)
	ucky Mineral (A7) (LI		Depleted Da	27			- 0. <sup>65</sup> 1/2*-10	arent Mater	ial (TF2)	
	resence (A8) (LRR L		Redox Depre		9 6				k Surface (TF1	2)
	uck (A9) (LRR P, T)	,	Marl (F10) (L		,			Explain in		,
	d Below Dark Surfac	e (A11)	Depleted Oc		MLRA 1	51)	G	12 25		
Thick D	ark Surface (A12)		Iron-Mangan	ese Masse	s (F12) (I	LRR O, P,	T) <sup>3</sup> Indic	ators of hy	drophytic vege	tation and
The property of their the	rairie Redox (A16) <b>(f</b>	THE REPORTS OF THE PROPERTY OF	Umbric Surfa	SECURIOR SEC		, U)		massing and some more and	ogy must be p	
30 300000000000000000000000000000000000	Mucky Mineral (S1) (I	LRR O, S)	Delta Ochric					ess disturbe	ed or problema	tic.
	Gleyed Matrix (S4)		Reduced Ve							
	Redox (S5)		Piedmont Flo					452D)		
	d Matrix (S6) urface (S7) <b>(LRR P, \$</b>	S T 111	Anomalous i	sright Loam	ny Solis (i	-20) (NILK	A 149A, 153C	, 153U)		
	Layer (if observed):						T			
Type: No	151 11 1									
	ches): None		_				Hydric Soil	Present?	Yes	No X
Remarks:							I II Julio Goil	11030111.		
	Hydric soils w	ere not p	resent at Sa	ample F	Point 5	RF				
	riyano oono w	oro not p	rosoni ai oi	arripio i	Ollito					

5RF

Project/Site: Redfish Facility	Survey Area	City/C	ounty: Aransas Pass/S	San Patricio County	Sampling Date: November	28, 2018
Applicant/Owner: Project Con	sulting Services, In	С.		State: TX	Sampling Point:RF	-SP6
Investigator(s): B.J. Hill		Section				
Landform (hillslope, terrace, etc	:): Coastal Prairie	Local	relief (concave, convex	(, none): None	Slope (%):	1-2%
Subregion (LRR or MLRA): ML	RA 150B in LRR T	Lat:97.155720	6586 Long:	27.8765682259	Datum: W	GS84
Soil Map Unit Name: Ijam Soil				NWI classifica	50 A 0-200 S ( 1,5 to 16 to	
Are climatic / hydrologic condition	ons on the site typical	for this time of year? Y	'es NoX	(If no, explain in Re	emarks.)	
Are Vegetation No , Soil N	o, or Hydrology	No significantly distur	bed? Are "Norm	al Circumstances" p	resent? Yes X N	o
Are Vegetation No Soil	lo, or Hydrology	No naturally problema	atic? (If needed,	, explain any answer	s in Remarks.)	
SUMMARY OF FINDING	S – Attach site	map showing san	npling point locati	ions, transects,	, important feature	s, etc.
Hydrophytic Vegetation Prese	unt? Yos	No_X				- 1
Hydric Soil Present?		NoX	Is the Sampled Area		<b>V</b>	
Wetland Hydrology Present?	Yes	NoX	within a Wetland?	Yes	NoX	
Remarks:	163					
Total rainfall in the six mo	onths (May-Octobe	r) prior to the survey	was 32 52-inches	According to NC	AA's National Weath	ner
Service, the May-October						
(62%) above normal May						
due to the dominance of a	upland vegetation,	the lack of hydric so	oils and the lack of v	vetland hydrolog <sub>?</sub>	y at the sample plot.	
HYDROLOGY						7.0
Wetland Hydrology Indicato	rs:			Secondary Indica	tors (minimum of two red	quired)
Primary Indicators (minimum	of one is required; che	eck all that apply)		Surface Soil (	Cracks (B6)	100
Surface Water (A1)		quatic Fauna (B13)			etated Concave Surface	(B8)
High Water Table (A2)		larl Deposits (B15) (LRI	R U)	Drainage Pat		(==)
Saturation (A3)		ydrogen Sulfide Odor (0		Moss Trim Lir		
Water Marks (B1)		xidized Rhizospheres a			Nater Table (C2)	
Sediment Deposits (B2)		resence of Reduced Iro		Crayfish Burn		
Drift Deposits (B3)	A 100 100 100 100 100 100 100 100 100 10	ecent Iron Reduction in			sible on Aerial Imagery (	C9)
Algal Mat or Crust (B4)	N	hin Muck Surface (C7)		Geomorphic I		SOLA.
Iron Deposits (B5)		ther (Explain in Remark	(S)	Shallow Aquit		
Inundation Visible on Aer				FAC-Neutral		
Water-Stained Leaves (B	9)				oss (D8) (LRR T, U)	
Field Observations:			Ì			
Surface Water Present?	Yes No _X	Depth (inches):	None			
Water Table Present?	Yes No _X	Depth (inches):	None			
Saturation Present?	Yes No _X	Depth (inches):	None Wetland	Hydrology Present	t? Yes No _	<u> </u>
(includes capillary fringe)  Describe Recorded Data (stre	am gauge monitoring	well aerial photos pre	vious inspections) if a	vailable:		
ArcGIS basemap.	am gaage, monitoring	, wen, denai priotos, pre	vious inspections,; ii av	anabio.		
Remarks:						-
Wetland hydrology	was not nrese	nt at Sample Po	nint 6RF			
VVCtiaria riyarology	was not presen	it at Gampie i c	mit orti .			

/EGETATION (Five Strata) – Use scientific names of p	piants.
--	---------

/EGETATION (Five Strata) – Use scientific nam	es of pla	ants.		Sampling Point: 6RF
N/A		Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: N/A ) 1.		Species?		Number of Dominant Species That Are OBL, FACW, or FAC:  (A)
2				Total Number of Dominant
3				Species Across All Strata: 2 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC:0% (A/E
6				Prevalence Index worksheet:
		= Total Cov	er er	
50% of total cover:	_ 20% of	total cover	:	
Sapling Stratum (Plot size: N/A )				FACW species x 2 =
1				FAC species x 3 =
2				FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5			-	Column rotals (A) (B)
6				Prevalence Index = B/A =
8	- 8	= Total Cov		Hydrophytic Vegetation Indicators:
50% of total cover:	_ 20% of	total cover		1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 30 ft x 30 ft )	400/	<b>V</b>	N.II	2 - Dominance Test is >50%
1. Helianthus argophyllus				3 - Prevalence Index is ≤3.0 <sup>1</sup>
2				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
3				
4				<sup>1</sup> Indicators of hydric soil and wetland hydrology must
5	-			be present, unless disturbed or problematic.
6	100/			Definitions of Five Vegetation Strata:
50/		= Total Cov		Tree – Woody plants, excluding woody vines,
50% of total cover: <u>5%</u>	_ 20% of	total cover	:	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
Herb Stratum (Plot size: 30 ft x 30 ft )  1. Schizachyrium scoparium	95%	Yes	FACU	(7.5 only or larger in diameter at broadt neight (BBH).
2. Baptisia alba	5%	No	UPL	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
				than 3 in. (7.6 cm) DBH.
3				Shrub – Woody plants, excluding woody vines,
4				approximately 3 to 20 ft (1 to 6 m) in height.
5				Harb All barbaras (and seeds) alone including
**************************************				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
7				plants, except woody vines, less than approximately
8			-	3 ft (1 m) in height.
9				Woody vine - All woody vines, regardless of height.
11			i	1
1116		= Total Cov		
50% of total cover: _ 50%				
Woody Vine Stratum (Plot size: N/A )	_ 20 70 01	total oover		
1				
2.				
3.				
4			2 <del></del>	
5				li de la companya de
u		Total Cov	er	Hydrophytic Vegetation
50% of total cover:				Present? Yes No _X
Remarks: (If observed, list morphological adaptations below		COLUI GOVEI		1
Tromains. (ii observed, list morphological adaptations below	<i>r</i> ).			
Hydrophytic vegetation was not domina	nt at S	ample l	Point 6I	RF.

6RF

SOIL Sampling Point: 6RF

Profile Des Depth	scription: (Describe Matrix	to the dept		ment the in ox Features		or confirm	n the absence	of indicate	ors.)	
(inches)	Color (moist)	%	Color (moist)	% realures	Type <sup>1</sup>	_Loc <sup>2</sup>	Texture		Remarks	
0-8"	10YR 4/2	100%					Loamy sand			
8-18"	10YR 6/2	100%		-10			Loamy sand	10		-
				-%				V3		
2							<u> </u>			
	- · ·	-02		-0.	. <del>.</del>		3	0.		
				-00	v <del></del>			13-		
								77		
										-
<sup>1</sup> Type: C=0	Concentration, D=De	oletion RM=	Reduced Matrix M	- ——— S=Masked	Sand Gr	ains	<sup>2</sup> Location:	PI =Pore I	_ining, M=Matı	rix
	Indicators: (Appli	99 PO 200 DOMESTIC							matic Hydric	
Histoso	ol (A1)		Polyvalue Be	elow Surfac	ce (S8) <b>(L</b>	RR S, T, L	J) 1 cm N	/luck (A9) (	LRR O)	
Histic E	Epipedon (A2)		Thin Dark St	urface (S9)	(LRR S,	T, U)	2 cm N	/luck (A10)	(LRR S)	
A PROS CICOLAGORIO	Histic (A3)		Loamy Muck	THE STATE OF THE PROPERTY OF T	*ID: 100 1*CONTROLO	(O)				MLRA 150A,B)
10 100 450500000	en Sulfide (A4)		Loamy Gley		F2)		0. 0.0000000000000000000000000000000000	SPERGERS AND ASSESSMENT OF THE PERSON OF THE		) (LRR P, S, T)
	ed Layers (A5) c Bodies (A6) <b>(LRR F</b>	) T III	Depleted Ma Redox Dark		·6)			alous Brigni RA 153B)	t Loamy Soils	(F20)
	lucky Mineral (A7) <b>(L</b>	Miles I San	Depleted Da	25				arent Mate	rial (TF2)	
	Presence (A8) (LRR I		Redox Depre		.3 6				k Surface (TF	12)
ES ST. CONTRACT	luck (A9) (LRR P, T)	29	Marl (F10) (I		,		- R	(Explain in		<u>,</u>
Deplete	ed Below Dark Surfac	ce (A11)	Depleted Oc	hric (F11)	(MLRA 1	51)				
	Oark Surface (A12)		Iron-Mangar						drophytic vege	
ac separative desired of	Prairie Redox (A16) (		DEDOTTO TO COMPANY AND ASSOCIATION	CONTRACTOR CONTRACTOR		, U)			logy must be p	
The second second second	Mucky Mineral (S1) (	LRR O, S)	Delta Ochric			0.A. 450E\		ess disturb	ed or problema	atic.
	Gleyed Matrix (S4) Redox (S5)		Reduced Ve Piedmont Flo							
20 April 10	d Matrix (S6)						A 149A, 153C	. 153D)		
	urface (S7) (LRR P,	S, T, U)	_					,,		
Restrictive	Layer (if observed)	):								
Туре: <u>_</u> <sup>С</sup>	Bravel									
Depth (ii	nches): 4 inches						Hydric Soil	Present?	Yes	_ No <u>X</u>
Remarks:										
	Hydric soils w	ere not	present at Sa	ample F	Point 6	RF.				

Project/Site: Harbor Island Survey Area	City/County: Nueces County		Sampling Date: No	vember 27, 2018
Applicant/Owner: Project Consulting Services, Inc.			Sampling Point:	
	Section, Township, Range: Ha			
	Local relief (concave, convex, r		Slope	(%): 1-2%
Subregion (LRR or MLRA): MLRA 150B in LRR T Lat: -97.0			Datur	
Soil Map Unit Name: _Tidal Flats, Occasionally Flooded			ation: Estuarine, Ma	
Are climatic / hydrologic conditions on the site typical for this time of y	ear? Yes No _X (	lf no, explain in Re	emarks.)	
Are Vegetation No, Soil No, or Hydrology No significantly	y disturbed? Are "Normal	Circumstances" p	resent? Yes X	No
Are Vegetation No , Soil No , or Hydrology No naturally p		xplain any answer		
SUMMARY OF FINDINGS – Attach site map showin				tures, etc.
Hydrophytic Vegetation Present? Yes X No				.13
Hydric Soil Present? Yes X No	is the Sampled Area	~		
Wetland Hydrology Present? Yes X No	within a welland?	Yes^	No	
Remarks:				-
Total rainfall in the six months (May-October) prior to the survive the May-October rainfall total was 1.89 inches above the ANN normal May-October rainfall for the survey area. Sample Poir dominance of hydrophytic vegetation, the presence of hydric	NUAL rainfall total for the surv at 1HI was determined to be lo	vey area, and 12 ocated within we	2.38 inches (62%) etlands due to the	) above
HYDROLOGY				
Wetland Hydrology Indicators:	,	A 1000 NO 100 NO 100 NO 1	tors (minimum of tw	o required)
Primary Indicators (minimum of one is required; check all that apply)	···	Surface Soil (		
Surface Water (A1)X Aquatic Fauna (B			etated Concave Su	ırface (B8)
X High Water Table (A2) Marl Deposits (B1		Drainage Pat		
X Saturation (A3) Hydrogen Sulfide		Moss Trim Li		
Company of the Compan	heres along Living Roots (C3)		Vater Table (C2)	
Sediment Deposits (B2) Presence of Redu	하다 (1915년 1일	Crayfish Burr		(00)
	ction in Tilled Soils (C6)	X Geomorphic	sible on Aerial Imag	gery (C9)
Algal Mat or Crust (B4) Thin Muck Surface Iron Deposits (B5) Other (Explain in		Shallow Aqui		
Inundation Visible on Aerial Imagery (B7)	(Citalks)	X FAC-Neutral	1.21.20.0000-1.20.00000000	
Water-Stained Leaves (B9)	,		oss (D8) (LRR T, U	n l
Field Observations:	T T		355 (25) (21111 1) 2	,
Surface Water Present? Yes No _X Depth (inches	s): None			
Water Table Present? Yes X No Depth (inches				
Saturation Present? Yes X No Depth (inchest (includes capillary fringe)		ydrology Presen	t? YesX	No
Describe Recorded Data (stream gauge, monitoring well, aerial pho	tos, previous inspections), if avai	lable:		
ArcGIS basemap.				
Remarks:				*
Wetland hydrology was present at Sample P	oint 1HI due to the pr	esence of a	High Water	Table
(A2) and soil Saturation (A3) within the uppe	•		•	
Deposits (B3) and Aquatic Fauna (B13), the				
			sample plot	(lowel
portions of the landscape), and passing the F	AC-Neutral Test (D3	)-		

VEGETATION	(Five S	Strata) _	Ilea	scientific	names	f nl	lante	-

<b>EGETATION (Five Strata)</b> – Use scientific nan	nes or pr	arits.		Sampling Point:
N/A		Dominant		Dominance Test worksheet:
ree <u>Stratum</u> (Plot size: <u>N/A</u> )	% Cover	Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC:4 (A)
·				Total Niverbox of Dessie and
				Total Number of Dominant Species Across All Strata:  4 (B)
				(5)
			-	Percent of Dominant Species 100%
				That Are OBL, FACW, or FAC:(A/B
·		= Total Cov		Prevalence Index worksheet:
EOO/ of total appears	rannonnama n			Total % Cover of: Multiply by:
50% of total cover:	20% 01	total cover		OBL species x 1 =
apling Stratum (Plot size: N/A )				FACW species x 2 =
				FAC species x 3 =
·				FACU species x 4 =
·				UPL species x 5 =
			-	Column Totals: (A) (B)
				Prevalence Index = B/A =
		= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of	total cover		1 - Rapid Test for Hydrophytic Vegetation
hrub Stratum (Plot size: 30 ft x 30 ft )				✓ 2 - Dominance Test is >50%
Avicennia germinans	20%	Yes	OBL	3 - Prevalence Index is ≤3.0 <sup>1</sup>
				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
			-	Problematic Hydrophytic Vegetation (Explain)
				1
				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
i	<del></del>		<del></del>	
<u> </u>	20%			Definitions of Five Vegetation Strata:
10%		= Total Cov		Tree - Woody plants, excluding woody vines,
50% of total cover: 10%	20% of	total cover		approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
Herb Stratum (Plot size: 30 ft x 30 ft )	400/	Voo	OBL	(7.5 only or larger in diameter at broadt neight (BBH).
Distichlis littoralis	40%	Yes	$\overline{}$	Sapling - Woody plants, excluding woody vines,
Batis maritima	20%	Yes_	OBL	approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
Sarcocornia ambigua	20%	Yes_	OBL	than o in. (7.5 only BBH.
Fimbristylis castanea	10%	No No	OBL	Shrub – Woody plants, excluding woody vines,
Spartina alterniflora	10%	No	OBL_	approximately 3 to 20 ft (1 to 6 m) in height.
· ·				Herb – All herbaceous (non-woody) plants, including
·				herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately
				3 ft (1 m) in height.
				The Second Control of the Control of
0				Woody vine – All woody vines, regardless of height.
1			s - S	
		= Total Cov	er	
50% of total cover: _50%		f total cover		
Voody Vine Stratum (Plot size: N/A )	20 70 01	total cover		
•				
			A <del></del>	
·				
v				Hydrophytic
	-	= Total Cov	er	Vegetation
	000/ -/			Present? Yes X No No
50% of total cover:	20% or	total cover		32 ANNOUNT

Soil Sampling Point: 1HI

OOIL								Sampling Folia.
Aller Aller		to the dep	th needed to docur			or confirm	n the absence	of indicators.)
Depth (inches)	Matrix Color (moist)	%	Color (moist)	x Features	Type <sup>1</sup>	_Loc <sup>2</sup>	Texture	Remarks
(inches) 0-3"	10YR 7/1		Color (Indist)		Type	LOC	Loamy sand	Remarks
		100%						
3-18"	10YR 7/1	60%	2.5Y 4/1	40%	_MS	M	Loamy sand	
(**************************************		<u></u>						
		- 10		100			-	
1	-						2	-
		70 PO 70 PO 10 PO	Reduced Matrix, M			ains.	The state of the s	PL=Pore Lining, M=Matrix.
2000		cable to all	LRRs, unless other					for Problematic Hydric Soils <sup>3</sup> :
Histosol			Polyvalue Be					luck (A9) (LRR O)
	pipedon (A2)		Thin Dark Su					luck (A10) (LRR S)
A -NOS GROOM GROOM	stic (A3)		Loamy Muck	a security supplies of the	100 1100 1000 1000	0)	W. 01-19-12-13-01-23-01-01-01-01-01-01-01-01-01-01-01-01-01-	ed Vertic (F18) (outside MLRA 150A,B)
- 10 1000 45 0505 090 and 0	n Sulfide (A4)		Loamy Gleye		F2)		SA DEGRADATE ENVISE	ont Floodplain Soils (F19) (LRR P, S, T)
	d Layers (A5)	N T 10	Depleted Ma		C)			lous Bright Loamy Soils (F20)
	Bodies (A6) (LRR F		Redox Dark	an many are 25			-0.83	RA 153B)
20 St. 10	icky Mineral (A7) (L				.23			arent Material (TF2)
	esence (A8) <b>(LRR l</b> ick (A9) <b>(LRR P, T)</b>	וָנ	— Redox Depre Marl (F10) (L		9)			hallow Dark Surface (TF12) Explain in Remarks)
10 30	d Below Dark Surfac	o (A11)	Depleted Oc		MIDA 1	:4 \	— Other (	Explain in Remarks)
l	ark Surface (A12)	c (ATT)	Iron-Mangan				T) <sup>3</sup> Indica	ators of hydrophytic vegetation and
LE 1001 3000 VINEEU / NOVOYON	rairie Redox (A16) (	MIRA 1504	A DOMESTIC CONTRACTOR					and hydrology must be present,
	lucky Mineral (S1) (		Delta Ochric			0,		ess disturbed or problematic.
	Gleyed Matrix (S4)		Reduced Ver	THE COLUMN PROPERTY	STANDARD SOME SOME	0A. 150B		soo distalled of problematio.
	Redox (S5)		Piedmont Flo			and like a second		
X Stripped				and the same of th	will man 35	Tilleranea - realiza inserio a	RA 149A, 153C,	153D)
	rface (S7) (LRR P,	S, T, U)	<u> </u>	-	•	M 12		
	Layer (if observed)							
Type: No	ne							
	ches): None						Hydric Soil	Present? Yes X No
Remarks:							1.,,	
and Workship Control March And Advances	Although byd	ric coile	woro occumo	od duo	to the	domin	ance of on	ly obligate vegetation,
l								ily obligate vegetation,
	soils also met	criteria	to be classifi	ed as S	strippe	d Matr	ix (S6).	

Project/Site: Harbor Island S	Survey Area		City/County: Nu	eces Count	ty	Sampling Date: No	vember 27, 2018
Applicant/Owner: Project Co	nsulting Service	s, Inc.			State: TX	Sampling Point:	
Investigator(s): B.J. Hill			Section, Townshi				
Landform (hillslope, terrace, et						Slope	(%): 10-12%
Subregion (LRR or MLRA): M						Datu	
Soil Map Unit Name: Tidal Fl		1000000000000		Markode Markon	NWI classific		1000
Are climatic / hydrologic condit			of year? Yes				
Are Vegetation No Soil						present? Yes X	No
Are Vegetation No Soil			VI-2		explain any answe		_ 110
SUMMARY OF FINDING				er or er	W 8	100 NO 10	tures, etc.
Hydrophytic Vegetation Pres Hydric Soil Present? Wetland Hydrology Present? Remarks: Total rainfall in the six m Service, the May-Octobe	Yes Yes nonths (May-O		within a V	2.52-inche	s. According to		
inches (62%) above nor within uplands due to the	mal May-Octo	ber rainfa <mark>ll</mark> for tl	ne survey area. Sa				
HYDROLOGY							
Wetland Hydrology Indicate	ors:				Secondary Indica	tors (minimum of tw	vo required)
Primary Indicators (minimum	of one is required	d; check all that ap	ply)		Surface Soil	Cracks (B6)	
Surface Water (A1)	256	Aquatic Fauna	(B13)		Sparsely Ve	getated Concave Su	urface (B8)
High Water Table (A2)		Marl Deposits			Drainage Pa		8 52
Saturation (A3)		Hydrogen Sulfi	de Odor (C1)		Moss Trim L	ines (B16)	
Water Marks (B1)			spheres along Living	Roots (C3)		Water Table (C2)	
Sediment Deposits (B2)		Presence of Re	educed Iron (C4)		Crayfish Bur	rows (C8)	
Drift Deposits (B3)			duction in Tilled Soils	(C6)		isible on Aerial Imag	gery (C9)
Algal Mat or Crust (B4)	122	Thin Muck Sur	face (C7)			Position (D2)	**************************************
Iron Deposits (B5)	74	Other (Explain	in Remarks)		Shallow Aqu	itard (D3)	
Inundation Visible on Ae					FAC-Neutral	Test (D5)	
Water-Stained Leaves (E						noss (D8) (LRR T, L	(ر
Field Observations:							
Surface Water Present?	Yes No	X Depth (inc	hes): None				
Water Table Present?		X Depth (inc					
Saturation Present?		X Depth (inc	Company of the Compan	Wetland	Hydrology Preser	nt? Yes	No_X_
(includes capillary fringe)		G 35 157 37	20/23	ations) if our	-ilable:	35 35	
Describe Recorded Data (street) ArcGIS basemap.	eam gauge, moni	toring well, aerial p	motos, previous insper	tions), ii ava	allable.		
Remarks:							
Wetland hydrology	was not pre	esent at Sam	ple Point 2HI.				
	•						

(COETATION	/F: /	344-1	1.1	:		-14-
VEGETATION	(Five :	otrata) —	use	scientific	names or	plants.

EGETATION (Five Strata) – Use scientific na	mes of pla	ints.		Sampling Point:2HI			
ree Stratum (Plot size: N/A )		Dominant		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 50%			
				That Are OBL, FACW, or FAC:(A/B)			
				Prevalence Index worksheet:			
50% of total cover:				Total % Cover of: Multiply by:			
Sapling Stratum (Plot size: N/A )	20 70 01	10101 00401		OBL species15 x 1 =15			
				FACW species0 x 2 =0			
				FAC species65 x 3 =95			
				FACU species 20 x 4 = 80			
				UPL species x 5 =			
i				Column Totals: (A) (B)			
i				Prevalence Index = B/A =2.9			
		= Total Cov	er	Hydrophytic Vegetation Indicators:			
50% of total cover:	20% of	total cover:		1 - Rapid Test for Hydrophytic Vegetation			
Shrub Stratum (Plot size: N/A )				2 - Dominance Test is >50%			
				3 - Prevalence Index is ≤3.0 <sup>1</sup>			
				Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)			
3.							
ł				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.			
5 5		<del></del> 0		Definitions of Five Vegetation Strata:			
		 Total Cov		Definitions of Five Vegetation Offata.			
50% of total cover:				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.			
Herb Stratum (Plot size: 30 ft x 30 ft )			-	(7.6 cm) or larger in diameter at breast height (DBH).			
Muhlenbergia reverchonii	50%	Yes	FAC	Sapling – Woody plants, excluding woody vines,			
Schizachyrium scoparium	20%	Yes	FACU	approximately 20 ft (6 m) or more in height and less			
Fimbristylis castanea	15%	<u>No</u>	OBL	than 3 in. (7.6 cm) DBH.			
lva annua	15%	No	FAC_	Shrub – Woody plants, excluding woody vines,			
6				approximately 3 to 20 ft (1 to 6 m) in height.			
5				Herb – All herbaceous (non-woody) plants, including			
·				herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately			
b		<del></del>	<del></del>	3 ft (1 m) in height.			
),				Woody vine - All woody vines, regardless of height.			
0							
1	100%		· · · · · · · · · · · · · · · · · · ·				
50% of total cover: _50%	10.5	= Total Cov					
Noody Vine Stratum (Plot size: N/A )	20% 01	total cover.					
voody vine stratum (Plot size)							
		·					
·							
5.				Liverandration			
*		Total Cov	er	Hydrophytic Vegetation			
50% of total cover:	k			Present? Yes X No No			

Soil Sampling Point: 2HI

Profile Desc	ription: (Describe t	o the depti	n needed to docum	nent the ir	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redox	ς Features	ii .			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	Remarks
0-18"	10YR 5/1	95%	10YR 3/6	5%	C	M	Loamy sand	
								-
-								-
	2	7 <u> </u>		50°				
				·				
1							21 4:	Displaced to the Makes
	oncentration, D=Depl Indicators: (Applica	00 PO 20 DOING				ains.		PL=Pore Lining, M=Matrix.  for Problematic Hydric Soils <sup>3</sup> :
3840		ible to all L				DD 6 T II		DEGE
Histosol	pipedon (A2)		Polyvalue Be Thin Dark Su					Muck (A9) (LRR O) Muck (A10) (LRR S)
Black Hi	Call Conversions address of the Conversion of th		Loamy Mucky					ed Vertic (F18) (outside MLRA 150A,B)
C Non-tracerous	n Sulfide (A4)		Loamy Gleye			0,	10 00 10 10 10 10 10 10 10 10 10 10 10 1	ont Floodplain Soils (F19) (LRR P, S, T)
	Layers (A5)		Depleted Mat		-/-			alous Bright Loamy Soils (F20)
Organic	Bodies (A6) (LRR P,	T, U)	Redox Dark S	Surface (F	6)		(MLF	RA 153B)
5 cm Mu	icky Mineral (A7) <b>(LR</b>	R P, T, U)	Depleted Dar	k Surface	(F7)		Red Pa	arent Material (TF2)
Muck Pr	esence (A8) (LRR U)		Redox Depre	ssions (F8	3)		Very S	hallow Dark Surface (TF12)
	ick (A9) (LRR P, T)		Marl (F10) (L				Other (	(Explain in Remarks)
	d Below Dark Surface	(A11)	Depleted Och					
The state of the s	ark Surface (A12)	II DA 450A'	Iron-Mangane				200.00	eators of hydrophytic vegetation and
A SERVICE SERVER WITH	rairie Redox (A16) <b>(M</b> lucky Mineral (S1) <b>(L</b>	CO REPORTED IN THE PROPERTY.	Umbric Surfa Delta Ochric			U)		land hydrology must be present, ess disturbed or problematic.
	Gleyed Matrix (S4)	KK 0, 0)	Reduced Ver	NO DESCRIPTION SECURIORS	PERSONAL BOOK BUSIN	0A. 150B)	dille	ess disturbed of problematic.
	ledox (S5)		Piedmont Flo				9A)	
AND THE RESERVE TH	Matrix (S6)		The same of the sa				A 149A, 153C,	, 153D)
Dark Su	rface (S7) (LRR P, S	, T, U)						ER PROPERTY OF THE PROPERTY OF
Restrictive	Layer (if observed):							
Туре: <u>No</u>	ne							
Depth (in	ches): None						Hydric Soil	Present? Yes X No
Remarks:								
H	Hydric soils we	ere pres	ent at Sampl	e Poin	t 2HI c	lue to n	neeting th	ne criteria to be classified
	as Sandy Red	•	•				Ü	
`	as samay risa	on (00).						

Project/Site: Harbor Island Si	urvey Area	City/C	ounty: Nueces Coun	ty	Sampling Date: November 27, 2018			
Applicant/Owner: Project Con	sulting Services, Ir				Sampling Point: HI-SP3			
Investigator(s): B.J. Hill		Section			The state of the s			
Landform (hillslope, terrace, etc					Slope (%): 10-15%			
Subregion (LRR or MLRA): ML				27.8490359951	Datum: WGS84			
Soil Map Unit Name: Tidal Fla		10001000000	70000000000000000000000000000000000000	NWI classifica				
Are climatic / hydrologic conditi								
Are Vegetation No Soil N					resent? Yes X No			
Are Vegetation No Soil	10_, or Hydrology_	No naturally problema	atic? (If needed,	explain any answer	rs in Remarks.)			
SUMMARY OF FINDING	S – Attach site	map showing sam	npling point locati	ons, transects	, important features, etc			
Hudsonbutio Vocatation Proce	unt2 Von	No _ X						
Hydrophytic Vegetation Prese Hydric Soil Present?		NoX	Is the Sampled Area		V			
Wetland Hydrology Present?	Yes	No X	within a Wetland?	Yes	NoX			
Remarks:	103							
Total rainfall in the six mo	onths (May-Octob	er) nrior to the survey	was 32 52-inches	According to NC	)ΔΔ's National Weather			
					ey area, and 12.38 inches			
					be located within uplands			
due to the dominance of u								
HYDROLOGY								
Wetland Hydrology Indicato	rs:			Secondary Indica	tors (minimum of two required)			
Primary Indicators (minimum		eck all that apply)		Surface Soil (	ar - W townstand			
Surface Water (A1)		Aquatic Fauna (B13)	<del></del>	- Dec Mai Amboritation	jetated Concave Surface (B8)			
High Water Table (A2)		Marl Deposits (B15) <b>(LRI</b>	D 11/					
Saturation (A3)		Hydrogen Sulfide Odor (0		Drainage Patterns (B10) Moss Trim Lines (B16)				
Water Marks (B1)		Oxidized Rhizospheres a						
Sediment Deposits (B2)		Presence of Reduced Iro		Crayfish Burn				
Drift Deposits (B3)		Recent Iron Reduction in			sible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)	1. — — — — — — — — — — — — — — — — — — —	Thin Muck Surface (C7)	Tilled Colls (CO)	Geomorphic				
Iron Deposits (B5)		Other (Explain in Remark	(e)	Shallow Aquit				
Inundation Visible on Aer		other (Explain in Neman	(0)	FAC-Neutral				
Water-Stained Leaves (B					noss (D8) (LRR T, U)			
Field Observations:			7	opnagnamm	000 (20) (211111)			
Surface Water Present?	Yes No	X Depth (inches):	None					
Water Table Present?			None					
Saturation Present?			None Wetland	Hydrology Presen	t? Yes No _X			
(includes capillary fringe)	3 3	26 1570 ST SEVER						
Describe Recorded Data (stre	am gauge, monitorin	g well, aerial photos, pre	vious inspections), if av	ailable:				
ArcGIS basemap.								
Remarks:								
Wetland hydrology	was not prese	ent at Sample Po	int 3HI.					
, , ,	'	'						

/EGETATION	(Five Strata	) - Use scientific names of plants	
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- Ν/Δ						
The Paragraph of the Control of the		Dominant		Dominance Test worksheet:		
Tree Stratum (Plot size: N/A ) 1		Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC:	1	(A)
2				Total Number of Dominant		
3				Species Across All Strata:	2	(B)
4				Barrat of Barria and Garrian		
5				Percent of Dominant Species That Are OBL, FACW, or FAC:	50%	(A/B)
5					***	. (, , ,
		= Total Cov		Prevalence Index worksheet:		
50% of total cover:				Total % Cover of: N	Multiply by:	_
Sapling Stratum (Plot size: N/A )	<del></del>			OBL species x 1 =		_
1				FACW species x 2 =	<u> </u>	-00
2.				FAC species x 3 =	·	
3.				FACU species x 4 =		
1.				UPL species x 5 =		
				Column Totals: (A)	10-	(B)
5						
5		Total Cov	er	Prevalence Index = B/A =		
E00/ -51-1-1	ė d			Hydrophytic Vegetation Indicator		
50% of total cover: Shrub Stratum (Plot size: 30 ft x 30 ft )	20% <b>o</b> f	total cover:		1 - Rapid Test for Hydrophytic	Vegetation	
Schinus torobinthifolia	30%	Vac	FAC	2 - Dominance Test is >50%		
				3 - Prevalence Index is ≤3.0 <sup>1</sup>		
2.				Problematic Hydrophytic Veget	ation¹ (Expla	ain)
3						
4				<sup>1</sup> Indicators of hydric soil and wetlan		must
5	<del></del>		-	be present, unless disturbed or prol	250250000 to 2000000	
6				Definitions of Five Vegetation Str	ata:	
		= Total Cov		Tree – Woody plants, excluding wo	ody vines,	
50% of total cover: 15%	20% of	total cover:	:6%	approximately 20 ft (6 m) or more in		
Herb Stratum (Plot size: 30 ft x 30 ft )				(7.6 cm) or larger in diameter at bre	ast height (L	JBH).
1. Bothriochloa ischaemum	90%	Yes	NI	Sapling - Woody plants, excluding		
2				approximately 20 ft (6 m) or more in	height and	less
3				than 3 in. (7.6 cm) DBH.		
4				Shrub – Woody plants, excluding w		
5				approximately 3 to 20 ft (1 to 6 m) in	n height.	
5				Herb - All herbaceous (non-woody	) plants, inclu	uding
7				herbaceous vines, regardless of siz		
B				plants, except woody vines, less that 3 ft (1 m) in height.	an approxima	ately
э.					n ogo	0.00
10				Woody vine - All woody vines, reg	ardless of he	eight.
11.						
		Total Cov	er			
50% of total cover: 45%						
Noody Vine Stratum (Plot size: N/A )		10101 00101				
1						
2						
3						
4						
5				Hydrophytic		
		= Total Cov	⁄er	Vegetation		
50% of total cover:				Present? Yes	No X	

SOIL Sampling Point: 3HI

Profile Des Depth	cription: (Describe Matrix	to the dept		ment the in ox Features		or confirm	the absence	of indicate	ors.)	
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	_Loc <sup>2</sup>	Texture	2	Remarks	
0-6"	10YR 3/2	100%				-	Loamy sand	<del></del>		
6-18"	10YR 7/3	100%		10			Loamy sand	(d		-
	- 1011(770			-00	-			V)		
(g	K 2	_00						ă		
· Marco										
<u></u>				-				12		
	2 2						-	17		
	ō <del></del>						<del></del>			
THE RESERVE TO THE PARTY OF THE	Concentration, D=Dep	90 PO 70 PO				ains.			_ining, M=Matr	
	Indicators: (Applie	cable to all I							matic Hydric	Soils*:
Histoso			Polyvalue Be							
	Epipedon (A2)		Thin Dark Su					/luck (A10)		MI DA 450A D)
	listic (A3) en Sulfide (A4)		Loamy Muck Loamy Gley	A A A SANCTON MANAGEMENT AND	***************************************	(0)				MLRA 150A,B) (LRR P, S, T)
U 10.3 - 4.5 0 5.5 5 0 5 c.	ed Layers (A5)		Depleted Ma		r2)		0. 0.0000000000000000000000000000000000	special contract of the second contract of th	t Loamy Soils	
	Bodies (A6) (LRR F	P. T. U)	Redox Dark		6)			RA 153B)	Louiny Cons	(1 20)
	ucky Mineral (A7) (L		Depleted Da					arent Mater	rial (TF2)	
	resence (A8) (LRR I		Redox Depre	essions (F	В)				k Surface (TF	12)
De de la company	uck (A9) (LRR P, T)	21	Marl (F10) (I	RR U)			- R	(Explain in		
Deplete	ed Below Dark Surfac	ce (A11)	Depleted Oc	hric (F11)	(MLRA 1	51)	90 Sept.			
	ark Surface (A12)		Iron-Mangar						drophytic vege	
AC PROPERTY OF STREET OF	Prairie Redox (A16) (		DEDOTTO TO COMPANY AND ADDRESS OF THE PARTY	CONTRACTOR CONTRACTOR		, U)			logy must be p	
The second secon	Mucky Mineral (S1) (	LRR O, S)	Delta Ochric			0 I 4 F 0 B 1		ess disturbe	ed or problema	atic.
	Gleyed Matrix (S4)		Reduced Ve							
See April 10	Redox (S5) d Matrix (S6)		Piedmont Flo				іям) RA 149A, 153C	153D)		
	urface (S7) <b>(LRR P,</b>	S T UI	Anomalous	Jilgili Loan	ily colla (	20) (10121)	A 143A, 1330	, 1550)		
	Layer (if observed)									
Type: N	121 11									
	nches): None						Hydric Soil	Present?	Yes	No X
Remarks:							1,			
	Hydric soils w	ere not	nresent at Sa	ample F	Point 3	н				
	riyano oono w	010 1100	prosont at ot	ampio i	Onite	· · · · · ·				

Project/Site: Harbor Island Surve	ey Area	City/County	: Nueces Cour	ty	Sampling Date: No	vember 27, 2018
Applicant/Owner: Project Consul	ting Services, Inc.			State: TX	Sampling Point:	
Investigator(s): B.J. Hill		Section, To				
Landform (hillslope, terrace, etc.):					Slope	(%): 2-3%
Subregion (LRR or MLRA): MLRA						
Soil Map Unit Name: Tidal Flats,	10/33		10000000000000000000000000000000000000	NWI classific		Dec Ses
Are climatic / hydrologic conditions	on the site typical for thi	s time of year? Yes	No X	(If no, explain in R	Remarks.)	
Are Vegetation No , Soil No					present? Yes X	No
Are Vegetation No Soil No		ME: NE:		explain any answe		
SUMMARY OF FINDINGS						tures, etc.
Hydrophytic Vegetation Present?	Yes X N					
Hydric Soil Present?	Yes X N		ne Sampled Area	·		
Wetland Hydrology Present?	Yes X N		nin a Wetland?	Yes^	No	
Remarks:						
Total rainfall in the six months the May-October rainfall total v normal May-October rainfall for dominance of hydrophytic veg	was 1.89 inches above or the survey area. Sar	e the ANNUAL rainfa nple Point 4HI was o	all total for the su determined to be	irvey area, and 1 located within w	2.38 inches (62% retlands due to the	) above e
HYDROLOGY						
Wetland Hydrology Indicators:				Secondary Indica	ators (minimum of tw	vo required)
Primary Indicators (minimum of o	ne is required; check all	that apply)		Surface Soil	Cracks (B6)	
Surface Water (A1)	X Aquatic	Fauna (B13)		Sparsely Ve	getated Concave Su	ırface (B8)
X High Water Table (A2)	Marl De	posits (B15) (LRR U)		Drainage Pa	tterns (B10)	
X Saturation (A3)	Hydroge	en Sulfide Odor (C1)		Moss Trim L	ines (B16)	
Water Marks (B1)	Oxidize	d Rhizospheres along	Living Roots (C3)	Dry-Season	Water Table (C2)	
Sediment Deposits (B2)	Present	e of Reduced Iron (C4	)	Crayfish Bur		120000000
Drift Deposits (B3)	Recent	Iron Reduction in Tilled	Soils (C6)		isible on Aerial Imag	gery (C9)
Algal Mat or Crust (B4)		ick Surface (C7)		X Geomorphic		
Iron Deposits (B5)		Explain in Remarks)		Shallow Aqu		
Inundation Visible on Aerial I	magery (B7)			X FAC-Neutral		
Water-Stained Leaves (B9)				Sphagnum r	noss (D8) (LRR T, L	J)
Field Observations:	X SOLU V SOL	or once to cont. N				
AN EXCHANGE WE BECKNOON PROPERTY OF THE	es No _X De					
l .	es X No De		l l			
Saturation Present? Y (includes capillary fringe)	es X No De	pth (inches): Surfac	Wetland	Hydrology Preser	nt? Yes X	No
Describe Recorded Data (stream	gauge, monitoring well,	aerial photos, previous	inspections), if av	railable:		
ArcGIS basemap.						
Remarks:						
Wetland hydrology wa	ıs present at Sar	mple Point 4HI	due to the p	presence of a	a High Water	Table
(A2) and soil Saturation	on (A3) within the	e upper 12-inch	nes of the so	oil profile, the	presence of	Aquatic
Fauna (B13), the Geo	morphic Position	n (D2) of the sa	mple plot (le	ower portion	s of the lands	cape),
and passing the FAC-		•				' ''
		/-				
1						- 1

VEGETATION (Five Str	ine pel I - (ctc	antific names	of plante

es of pla	arits.		Sampling Point:	
			Dominance Test worksheet:	
			Number of Dominant Species That Are OBL, FACW, or FAC:2	(A)
			Total Number of Dominant	
			1	(B)
			Percent of Dominant Species	
				(A/B)
			Prevalence Index worksheet	
rappenharea neb			ACT OF A STATE OF THE ACT OF A STATE OF A ST	
_ 20% of	total cover:		1.	_
			250 26 27	
			and the second s	
			( )	_ (-)
			Prevalence Index = B/A =	_
		i man	Hydrophytic Vegetation Indicators:	
_ 20% of	total cover:			
00%	Voc	OPI	2 - Dominance Test is >50%	
			3 - Prevalence Index is ≤3.0 <sup>1</sup>	
			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain	n)
				nust
		-	STATES SECTION OF THE STATE OF	
90%			Definitions of Five Vegetation Strata:	
			Tree - Woody plants, excluding woody vines,	
_ 20% 01	total cover.	1070		
20%	Yes	OBL		ś
	<del></del>			ess
			than 3 in. (7.6 cm) DBH.	
			Shrub - Woody plants excluding woody vines	
(4)			approximately 3 to 20 ft (1 to 6 m) in height.	
		35	Herb - All herbaceous (non-woody) plants includ	dina
		-	herbaceous vines, regardless of size, and woody	
				ely
		-	3 it (1 iii) iii rieigiit.	
		-	Woody vine - All woody vines, regardless of height	ght.
	= Total Cov	er		
2001/00/2004/2004/20		**************************************		
		· · · · · · · · · · · · · · · · · · ·		
			Hydrophytic	
	Total Cov	er	Vegetation	
			Present? Yes X No No	
_ 20% of	total cover:		rieseitti ies No	
	Absolute % Cover	Absolute % Cover Species?  = Total Cover 20% of total cover:  90% Yes  90% Total Cover: 20% of total cover: 20% of total cover: 20% Yes	Absolute Dominant Indicator % Cover Species? Status  = Total Cover = 20% of total cover:  90% Yes OBL  90% = Total Cover = 20% of total cover: 18%  20% Yes OBL	Absolute % Cover Species? Status   Number of Dominant Species   That Are OBL, FACW, or FAC:   2

SOIL Sampling Point: 4HI

Profile Desc	ription: (Describe	to the dept	h needed to docui	nent the i	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix			x Features				
(inches)	Color (moist)	<u></u> %	Color (moist)		Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-18"	10YR 4/1	80%	Gley1 4/N	20%	MS_		Sandy clay	
<u>-</u> 7	<u></u>	107 <u> </u>						
	<u>,                                      </u>							
	-							
1Type: C=C	oncentration, D=Dep	letion PM-	Peduced Matrix M	S-Mackad	Sand Gr	aine	<sup>2</sup> Location:	PL=Pore Lining, M=Matrix.
The second secon	Indicators: (Application)	70 10 20 20				ali 15.		for Problematic Hydric Soils <sup>3</sup> :
Histosol		abio to aii i	Polyvalue Be			PPGTI		luck (A9) (LRR O)
	pipedon (A2)		Thin Dark Su					luck (A10) (LRR S)
Black Hi			Loamy Muck					ed Vertic (F18) (outside MLRA 150A,B)
- Non-Executivescond	n Sulfide (A4)		Loamy Gleye	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	• 177. 1 100. 100. 100. 100. 100. 100. 10	-,	8: 9: 15: 15: 15: 15: 15: 15: 15: 15: 15: 15	ont Floodplain Soils (F19) (LRR P, S, T)
10 1000 AND SANDON	l Layers (A5)		Depleted Ma				to the contract of the contrac	lous Bright Loamy Soils (F20)
	Bodies (A6) (LRR P,	, T, U)	Redox Dark		6)			(A 153B)
5 cm Mu	icky Mineral (A7) (LF	RR P, T, U)	Depleted Da	rk Surface	(F7)		Red Pa	rent Material (TF2)
	esence (A8) (LRR U	)	Redox Depre	essions (F	3)		Very SI	hallow Dark Surface (TF12)
	ick (A9) (LRR P, T)		Marl (F10) (L				Other (	Explain in Remarks)
	d Below Dark Surface	e (A11)	Depleted Oc				9	
10. 200.02007140.00007040	ark Surface (A12)		Iron-Mangan					ators of hydrophytic vegetation and
	rairie Redox (A16) (N					, U)		and hydrology must be present,
30	lucky Mineral (S1) (L	.RR O, S)	Delta Ochric	and con-out account	MATERIAL SECTION	0 A 4 E 0 E )		ess disturbed or problematic.
	Bleyed Matrix (S4) edox (S5)		Reduced Ve Piedmont Flo					
X Stripped			The second secon	Accessed Tables and			A 149A, 153C,	153D)
	rface (S7) (LRR P, S	s. T. U)		origini Lour	ily 00ii3 (i	20) (III 21)	in 145h, 1550,	1000)
	_ayer (if observed):							
Type: No	151 11							
	ches): None						Hydric Soil	Present? Yes X No
Remarks:							1,	
	Although hydr	ic soils	were assume	auh ha	to the	domina	ance of on	ly obligate vegetation,
								ly obligate vegetation,
٤	soils also met	cniena	to be classiii	eu as s	surppe	u man	IX (56).	

Project/Site: Harbor Island Si	urvey Area	City/C	ounty: Nueces Cour	nty	Sampling Date: N	lovember 27, 2018
Applicant/Owner: Project Con	sulting Services, Ir		S18			
Investigator(s): B.J. Hill		Section				
Landform (hillslope, terrace, etc			relief (concave, convex		Slope	(%): 3-5%
Subregion (LRR or MLRA): ML				27.8450008208	Datu	
Soil Map Unit Name: Tidal Fla		1000 1000 0 JS	- Professional Control	NWI classific		lodiki
Are climatic / hydrologic conditi	ons on the site typica	I for this time of year? Ye	es No_ X	(If no, explain in R	emarks.)	
Are Vegetation No , Soil N				al Circumstances" p		No
Are Vegetation No Soil	10_, or Hydrology_	No naturally problema	itic? (If needed,	, explain any answe	rs in Remarks.)	
SUMMARY OF FINDING	S – Attach site	map showing sam	pling point locat	ions, transects	, important fea	atures, etc.
Hudronko dia Vanatatian Bassa		( No				
Hydrophytic Vegetation Prese Hydric Soil Present?		No	Is the Sampled Area			
Wetland Hydrology Present?	Yes	No X	within a Wetland?	Yes	NoX	ā.
Remarks:	165					
Total rainfall in the six me	onthe (May-Octol	per) prior to the surve	av was 32 52-inche	es According to	NOAA's Nation	al Weather
Service, the May-Octobe						
inches (62%) above norr						
within uplands due to the						
HYDROLOGY						//
Wetland Hydrology Indicato	ors:			Secondary Indica	tors (minimum of t	wo required)
Primary Indicators (minimum		eck all that apply)		Surface Soil	as William States	
Surface Water (A1)		Aquatic Fauna (B13)			getated Concave S	urface (B8)
High Water Table (A2)		Marl Deposits (B15) (LRF	R U)	Drainage Pat		
Saturation (A3)		Hydrogen Sulfide Odor (C		Moss Trim Li		
Water Marks (B1)		Oxidized Rhizospheres al			Water Table (C2)	
Sediment Deposits (B2)		Presence of Reduced Iron		Crayfish Burr		
Drift Deposits (B3)		Recent Iron Reduction in			sible on Aerial Ima	gery (C9)
Algal Mat or Crust (B4)		Thin Muck Surface (C7)			Position (D2)	
Iron Deposits (B5)		Other (Explain in Remark	s)	Shallow Aqui	itard (D3)	
Inundation Visible on Aer	ial Imagery (B7)			FAC-Neutral	Test (D5)	
Water-Stained Leaves (B	9)			Sphagnum m	noss (D8) (LRR T,	U)
Field Observations:						
Surface Water Present?	Yes No	Depth (inches):	None			
Water Table Present?	Yes No _>	Depth (inches):	None			
Saturation Present?	Yes No>	Depth (inches):	None Wetland	Hydrology Presen	t? Yes	No X
(includes capillary fringe)  Describe Recorded Data (stre	am gauge, monitorin	g well, aerial photos, pre-	vious inspections), if a	vailable:		-
ArcGIS basemap.	J J	<b>3</b> , p	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			
Remarks:						
Wetland hydrology	was not nrese	nt at Sample Po	int 5HI			
VVCtiana nyarology	was not prese	int at Gampio i G	iiit Oi ii.			

VEGETATION	(Five S	Strata) _	Ilea	scientific	names	f nl	lante	-

EGETATION (Five Strata) – Use scientific		\$10000000000000		ACTION AND THE CONTRACT OF THE	
ree Stratum (Plot size: N/A )	Absolute <u>% Cover</u>	Dominant Species?		Dominance Test worksheet:	
(FIOUSIZE)	_% COVE	<u>Opecies:</u>	Status	Number of Dominant Species That Are OBL, FACW, or FAC:2	(A)
				Total Niverbox of Dominant	
2				Total Number of Dominant Species Across All Strata: 2	(B)
				Control Contro	(-)
				Percent of Dominant Species 100%	(A (D
				That Are OBL, FACW, or FAC:	(A/B
				Prevalence Index worksheet:	
500/ -5/-/-				Total % Cover of: Multiply by:	
50% of total cover:	20% of	total cover		OBL species x 1 =	8
apling Stratum (Plot size: N/A )				FACW species x 2 =	
•				FAC species x 3 =	
• 1				FACU species x 4 =	
·				UPL species x 5 =	
·					
5			_	Column Totals: (A)	(B)
				Prevalence Index = B/A =	_
		= Total Cov	er er	Hydrophytic Vegetation Indicators:	
50% of total cover:	20% of	total cover	:	1 - Rapid Test for Hydrophytic Vegetation	
Shrub Stratum (Plot size: N/A )				✓ 2 - Dominance Test is >50%	
				3 - Prevalence Index is ≤3.0 <sup>1</sup>	
2.				Problematic Hydrophytic Vegetation (Explain	1)
S					2
lu				Indicators of hydric soil and wetland hydrology mu	uet
j				be present, unless disturbed or problematic.	ust
5.		-		Definitions of Five Vegetation Strata:	
		Total Cov	er		
50% of total cover:				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 i	in
Herb Stratum (Plot size: 30 ft x 30 ft )	0.0000000000000000000000000000000000000			(7.6 cm) or larger in diameter at breast height (DB	
Spartina patens	20%	Yes	FACW	Sapling – Woody plants, excluding woody vines,	
Fimbristylis castanea	10%	Yes	OBL	approximately 20 ft (6 m) or more in height and les	SS
Schizachyrium scoparium	5%	No	FACU	than 3 in. (7.6 cm) DBH.	
Sporobolus virginicus	5%	No	FACW	Shrub – Woody plants, excluding woody vines,	
				approximately 3 to 20 ft (1 to 6 m) in height.	
·	-			Hart All backs and for a second of a large state of	
S				Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody	ing
<u></u>				plants, except woody vines, less than approximate	ely
k- <u></u>		<del></del> 0	-	3 ft (1 m) in height.	
,				Woody vine - All woody vines, regardless of heig	ıht.
0					*****
1					
	100	= Total Cov			
50% of total cover: 2	0% 20% of	total cover	: _8%		
Voody Vine Stratum (Plot size: N/A )					
i		))	2)		
L					
i				Hydrophytic	
			er	Vegetation	
	8 6			Present? Yes X No No	
50% of total cover:	Z(1,50 L)	total cover			

SOIL Sampling Point: 5HI

Profile Desc	ription: (Describe t	o the depth	needed to docum	nent the ir	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redo	κ Features	<b>i</b>			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-18"	10YR 7/1	98%	10YR 5/6	2%	_RM_	M	Loamy sand	
-					·			-
	2	7 - 3		50°				
1						wardings.		
	oncentration, D=Depl	Off the Transfer Control				ains.		PL=Pore Lining, M=Matrix.
3840	Indicators: (Applica	ible to all L						for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1) pipedon (A2)		Polyvalue Bel					Muck (A9) (LRR O)
Histic =	Call Conversions address of the Conversion of th		Thin Dark Sui					fuck (A10) (LRR S) ed Vertic (F18) (outside MLRA 150A,B)
C Non-tracerous	n Sulfide (A4)		Loamy Gleye			. •,	(C) 01/10/10/04/04/04/04/04/04/04/04/04/04/04/04/04	ont Floodplain Soils (F19) (LRR P, S, T)
	Layers (A5)		Depleted Mat		-/			llous Bright Loamy Soils (F20)
	Bodies (A6) (LRR P,	T, U)	Redox Dark S		6)		The state of the s	RA 153B)
5 cm Mu	icky Mineral (A7) (LR	R P, T, U)	Depleted Dar	k Surface	(F7)		Red Pa	arent Material (TF2)
Muck Pr	esence (A8) (LRR U)		Redox Depre	ssions (F8	3)		Very S	hallow Dark Surface (TF12)
	ick (A9) (LRR P, T)		Marl (F10) (L				Other (	Explain in Remarks)
	d Below Dark Surface	(A11)	Depleted Och					
The state of the s	ark Surface (A12)	U DA 450A)	Iron-Mangane				200.00	ators of hydrophytic vegetation and
A SERVICE SERVER WITH	rairie Redox (A16) (M	CO RESOLUTION DE LE SANCONICIONE .	Umbric Surfa Delta Ochric			, U)		land hydrology must be present, ess disturbed or problematic.
	lucky Mineral (S1) <b>(L</b> Bleyed Matrix (S4)	KK 0, 3)	Reduced Veri	NO SECURIO SECURIOR	SCHOOL SERVICES	0A 150B)	unie	ess disturbed or problematic.
	ledox (S5)		Piedmont Flo				9A)	
AND THE RESERVE TH	Matrix (S6)		The same of the sa				A 149A, 153C,	. 153D)
	rface (S7) (LRR P, S	, T, U)			,	,	,	,
Restrictive	_ayer (if observed):							
Type: No	ne							
Depth (in	ches): None						Hydric Soil	Present? Yes X No
Remarks:							X	
ŀ	Hvdric soils we	ere pres	ent at Sampl	e Poin	t 5HI d	due to n	neetina th	e criteria to be classified
l	as Sandy Red	-						
	do Carray I tou	ox (00).						

Project/Site: Harbor Island St	urvey Area	City/Co	ounty: Nueces Coun	ty	Sampling Date: N	ovember 27, 2018
Applicant/Owner: Project Con	sulting Services, I		S1S			
Investigator(s): B.J. Hill		Sectio				
Landform (hillslope, terrace, etc			relief (concave, convex		Slope	(%): 2-3%
Subregion (LRR or MLRA): ML				27.8449542849	Datu	
Soil Map Unit Name: Tidal Fla		100010000000	McCodella Maria	NWI classific	56 A 0.000 a 0	Abdola -
Are climatic / hydrologic condition	ons on the site typica	al for this time of year? Ye	es No_X	(If no, explain in R	emarks.)	
Are Vegetation No , Soil N				al Circumstances" p		No
Are Vegetation No Soil N	lo, or Hydrology _	No naturally problema	tic? (If needed,	explain any answer	rs in Remarks.)	
SUMMARY OF FINDING	S – Attach site	map showing sam	pling point locati	ons, transects	, important fea	atures, etc.
W 1 1 2 1 2 1 2 2 2 2		x				
Hydrophytic Vegetation Prese Hydric Soil Present?		X No	Is the Sampled Area			
Wetland Hydrology Present?	Yes	No X No X	within a Wetland?	Yes	NoX	ĝ
Remarks:	163					
Total rainfall in the six mo	onths (May-Octo	her) prior to the surve	www. 32 52-inche	s According to	NOAA's Nation	al Weather
Service, the May-Octobe						
inches (62%) above norn						
within uplands due to the						
HYDROLOGY						//
Wetland Hydrology Indicato	rs:			Secondary Indica	tors (minimum of t	wo required)
Primary Indicators (minimum o	of one is required; ch	neck all that apply)	- W	Surface Soil	as William States	U42 15.
Surface Water (A1)		Aquatic Fauna (B13)			getated Concave S	urface (B8)
High Water Table (A2)		Marl Deposits (B15) (LRR	: U)	Drainage Pat		
Saturation (A3)		Hydrogen Sulfide Odor (C		Moss Trim Li		
Water Marks (B1)		Oxidized Rhizospheres al			Water Table (C2)	
Sediment Deposits (B2)		Presence of Reduced Iron		Crayfish Burr		
Drift Deposits (B3)		Recent Iron Reduction in			sible on Aerial Ima	gery (C9)
Algal Mat or Crust (B4)		Thin Muck Surface (C7)		Geomorphic	Position (D2)	ATT CONTROL OF CONTROL
Iron Deposits (B5)	2 <del></del>	Other (Explain in Remarks	s)	Shallow Aqui	tard (D3)	
Inundation Visible on Aeri	al Imagery (B7)			FAC-Neutral	Test (D5)	
Water-Stained Leaves (B	9)			Sphagnum m	noss (D8) (LRR T,	U)
Field Observations:						
Surface Water Present?	Yes No	X Depth (inches):N	lone			
Water Table Present?	Yes No	X Depth (inches):	None			
Saturation Present?	Yes No	X Depth (inches):	None Wetland	Hydrology Presen	t? Yes	No X
(includes capillary fringe)  Describe Recorded Data (stre	am gauge, monitorir	ng well, aerial photos, prev	vious inspections), if av	ailable:		
ArcGIS basemap.						
Remarks:						Î
Wetland hydrology v	was not prese	ent at Sample Po	int 6HI.			
]						

VEGETATION	(Five S	Strata) _	Ilea	scientific	names	f nl	lante	-

ree Stratum (Plot size: N/A )		Dominant		Dominance Test worksheet:
ree Stratum (Plot size: N/A )	<u>% Cover</u>		Status	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
				Total Number of Dominant Species Across All Strata:  3 (B)
			· · · · · · · · · · · · · · · · · · ·	Species Across Air Strata.
				Percent of Dominant Species That Are ORL FACW or FAC: 66%
				That Are OBL, FACW, or FAC: (A/E
·			<del></del>	Prevalence Index worksheet:
	-			Total % Cover of: Multiply by:
50% of total cover:	20% of	total cover	:	OBL species x 1 =
apling <u>Stratum</u> (Plot size: <u>N/A</u> )				
	-0.03			FACW species x 2 =
· <u>-</u>				FAC species x 3 =
				FACU species x 4 =
				UPL species x 5 =
				Column Totals: (A) (B
				Prevalence Index = B/A =
	-	Total Cov	er er	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of	total cover	i	1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: N/A )				2 - Dominance Test is >50%
·				3 - Prevalence Index is ≤3.0 <sup>1</sup>
				Problematic Hydrophytic Vegetation (Explain)
				1
l				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
i. <u> </u>	<del></del>		<del></del>	
				Definitions of Five Vegetation Strata:
				Tree – Woody plants, excluding woody vines,
50% of total cover:	20% of	total cover	·	approximately 20 ft (6 m) or more in height and 3 in.
lerb Stratum (Plot size: 30 ft x 30 ft )			=	(7.6 cm) or larger in diameter at breast height (DBH).
Schizachyrium scoparium	40%	Yes	FACU	Sapling – Woody plants, excluding woody vines,
Spartina patens	40%	Yes	FACW	approximately 20 ft (6 m) or more in height and less
Ambrosia psilostachya	20%	Yes	_FAC_	than 3 in. (7.6 cm) DBH.
	7/02 POS			Shrub – Woody plants, excluding woody vines,
				approximately 3 to 20 ft (1 to 6 m) in height.
	•			Herb - All herbaceous (non-woody) plants, including
				herbaceous vines, regardless of size, and woody
				plants, except woody vines, less than approximately
-			<del></del>	3 ft (1 m) in height.
				Woody vine - All woody vines, regardless of height.
0				
1			-	
		= Total Cov		
50% of total cover: 50%	20% of	total cover	20%	
Voody Vine Stratum (Plot size: N/A )				
		-20	2. <del>-</del>	
			9	
·				Hydrophytic Vegetation
		- Total Cov	rel .	- vegetation
50% of total cover:		**************************************		Present? Yes X No No

SOIL Sampling Point: 6HI

	cription: (Describe	to the depth				or confirm	the absence	of indicato	ors.)	
Depth (inches)	<u>Matrix</u> Color (moist)	<u></u> %	Redo Color (moist)	x Features %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-18"	10YR 5/3	100%	COIOI (IIIOISI)		1100		Loamy sand	-	Romants	
				-102						
-	9 <del>9.</del>			- 0			-			
100	. <u>-</u>	107 <u> </u>		-100			<u> </u>			
	N <del>2</del>	5). <u> </u>		100			-			
		·		-00	1		- 3			
	n <u>-</u>									
<u> </u>										
The second secon	oncentration, D=Dep	90 90 90 100 100 100 100 100 100 100 100				ains.			ining, M=Matr	
Hydric Soil	Indicators: (Application	able to all Li	RRs, unless othe	rwise note	ed.)		Indicators	for Proble	matic Hydric	Soils <sup>3</sup> :
Histoso			Polyvalue Be							
	pipedon (A2)		Thin Dark Su					uck (A10)		
7 No. 1 (10. 10. 10. 10. 10. 10. 10. 10. 10. 10.	istic (A3)		Loamy Muck	The second transfer of the second	**************************************	(O)				MLRA 150A,B)
	en Sulfide (A4)		Loamy Gleye		F2)		Sit Description and American			(E20)
	d Layers (A5) : Bodies (A6) <b>(LRR P</b> ,	T ID	Depleted Ma Redox Dark		·6)			A 153B)	Loamy Soils	(FZU)
	ucky Mineral (A7) (LF		Depleted Da	A 100 A				rent Mater	ial (TF2)	
	resence (A8) (LRR U		Redox Depre		.33				Surface (TF	12)
ES ST. CO.	uck (A9) (LRR P, T)	ń	Marl (F10) (L					Explain in I		,
	d Below Dark Surface	e (A11)	Depleted Oc		(MLRA 1	51)				
Thick D	ark Surface (A12)		Iron-Mangan	iese Mass	es (F12) (	LRR O, P,	T) <sup>3</sup> Indica	ators of hyd	drophytic vege	etation and
- STANDAM CANADA W	Prairie Redox (A16) <b>(N</b>	ACT RESIDENCE IN THE SECOND PROPERTY OF THE S	ANALYST THE STATE OF THE ANALYST STATE	CONTRACTOR OF THE PROPERTY	0-20-00-00-00 <b>6</b> 0 -00	, U)			ogy must be p	
30. 30000000000000000000000000000000000	Mucky Mineral (S1) (L	.RR O, S)	Delta Ochric					ss disturbe	ed or problema	atic.
	Gleyed Matrix (S4)		Reduced Ve							
20 April 10	Redox (S5)		Piedmont Flo					4.52 D)		
	d Matrix (S6) urface (S7) <b>(LRR P, S</b>	T 115	Anomaious i	Bright Loar	ny Solis (I	F20) (NILK	A 149A, 153C,	1530)		
	Layer (if observed):						1			
Type: N	151 11									
	iches): None						Hydric Soil	Brocont?	Yes	No X
2000 2000	iciles). <u></u>						Hydric Soil	rieseiit?	162	. NO
Remarks:	Hydric soils w	oro not n	recent at Sa	ample l	Daint 6	:Ш1				
	riyuric solis w	ere not p	neseni ai Sa	ample i	- OII IL O	111.				

Project/Site: Harbor Island Survey Area	City/Cour	ty: Nueces County	Sa	ampling Date: November 28, 2018
Applicant/Owner: Project Consulting Serv	rices, Inc.	State	e: TX Sa	ampling Point: HI-SP7
Investigator(s): B.J. Hill	Section, 7			
Landform (hillslope, terrace, etc.): Edge of	Estuarine Flat Local relie	ef (concave, convex, none	e): None	Slope (%): 1-2%
Subregion (LRR or MLRA): MLRA 150B in				Datum: WGS84
Soil Map Unit Name: Tidal Flats, Occasion		200 TO 10 TO	NWI classification	
Are climatic / hydrologic conditions on the sit	e typical for this time of year? Yes	No X (If no	o. explain in Rem	narks.)
Are Vegetation No, Soil No, or Hydro				
Are Vegetation No , Soil No , or Hydro	ology No naturally problematic?	(If needed, expla	ain any answers i	in Remarks.)
SUMMARY OF FINDINGS - Attac	h site map showing sampl	ng point locations,	, transects, ir	mportant features, etc.
	es X No	the Sampled Area	Y	
100 C 100 C C C 100 C C C C C C C C C C	'es X No wi	thin a Wetland?	Yes^_	_ No
Remarks:				
Total rainfall in the six months (May-Oc the May-October rainfall total was 1.89 normal May-October rainfall for the sur dominance of hydrophytic vegetation, t	inches above the ANNUAL rainvey area. Sample Point 7HI was	fall total for the survey determined to be loca	area, and 12.3 ated within wetla	38 inches (62%) above ands due to the
HYDROLOGY				
Wetland Hydrology Indicators:		Sec	condary Indicator	rs (minimum of two required)
Primary Indicators (minimum of one is requ	ired; check all that apply)		Surface Soil Cra	acks (B6)
Surface Water (A1)	X Aquatic Fauna (B13)	<u></u>	Sparsely Vegeta	ated Concave Surface (B8)
X High Water Table (A2)	Marl Deposits (B15) (LRR U)	_	Drainage Patter	rns (B10)
X Saturation (A3)	Hydrogen Sulfide Odor (C1)		Moss Trim Lines	s (B16)
Water Marks (B1)	Oxidized Rhizospheres along	Living Roots (C3)	Dry-Season Wa	iter Table (C2)
Sediment Deposits (B2)	Presence of Reduced Iron (C	:4)	Crayfish Burrow	vs (C8)
Drift Deposits (B3)	Recent Iron Reduction in Tille	ed Soils (C6)	Saturation Visib	ole on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Thin Muck Surface (C7)	<u>X</u>	Geomorphic Po	sition (D2)
Iron Deposits (B5)	Other (Explain in Remarks)	<u></u>	Shallow Aquitar	rd (D3)
Inundation Visible on Aerial Imagery (E	37)	X	FAC-Neutral Te	est (D5)
Water-Stained Leaves (B9)				ss (D8) (LRR T, U)
Field Observations:				
Surface Water Present? Yes	No X Depth (inches): Nor	ne		
FOR ENGINEERING MINISTERS SHOULD SHOU	No Depth (inches):10" from si	urface		
	No Depth (inches):4" from si		ology Present?	YesX No
Describe Recorded Data (stream gauge, m	onitoring well, aerial photos, previou	is inspections), if available	e:	
ArcGIS basemap.				
Remarks:				
Wetland hydrology was pres	ent at Sample Point 7H	I due to the pres	ence of a H	High Water Table
(A2) and soil Saturation (A3)	-	-		•
Fauna (B13), the Geomorph	• •	•		·
1		ample plot (lowe	i portions c	in the landsdape),
and passing the FAC-Neutra	11 1 68t (D3).			

VEGETATION	(Five S	Strata) _	Ilea	scientific	names	f nl	lante	-

				Space and the control of the control
N/A		Dominant		Dominance Test worksheet:
r <u>ee Stratum</u> (Plot size: <u>N/A</u> )		Species?		Number of Dominant Species That Are OBL, FACW, or FAC: (A)
				Total Number of Dominant Species Across All Strata: 2 (B)
				Species / Gross / Gros
				Percent of Dominant Species That Are OBL FACW or FAC: 100%
				That Are OBL, FACW, or FAC: (A/B)
-		Total Cov		Prevalence Index worksheet:
500/ -51-1-1				Total % Cover of: Multiply by:
50% of total cover:	20% or	total cover:		OBL species x 1 =
Sapling Stratum (Plot size: N/A )				FACW species x 2 =
				FAC species x 3 =
• {				FACU species x 4 =
·				UPL species x 5 =
*				
				Column Totals: (A) (B)
				Prevalence Index = B/A =
		= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover:	20% of	total cover:		1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: N/A )				✓ 2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.0¹
2				Problematic Hydrophytic Vegetation¹ (Explain)
				Troblemane rigarophyne vegetation (Explain)
5				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
S				Definitions of Five Vegetation Strata:
		Total Cov		John Marie Strate Togetation Circuit
50% of total cover:				Tree – Woody plants, excluding woody vines,
Herb Stratum (Plot size: 30 ft x 30 ft )	20 70 01	total cover.	· · · · · · ·	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
Spartina patens	60%	Yes	FACW	
Borrichia frutescens	20%	Yes	OBL	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
Schoenoplectus robustus	10%	No	OBL	than 3 in. (7.6 cm) DBH.
Sporobolus virginicus	10%	No	OBL	
	10 /6	INO	—OBL	Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
·	-			
<u> </u>				Herb – All herbaceous (non-woody) plants, including
·				herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately
· <u>-</u>			-	3 ft (1 m) in height.
<u> </u>				Woody vine. All woody vines regardless of height
0	010			Woody vine – All woody vines, regardless of height.
1				
		= Total Cov	er	
50% of total cover: _50%	1/1			
Voody Vine Stratum (Plot size: N/A )			<del></del>	
3 850 500 TO				
3				
l,	2017	100		
)				Hydrophytic
		= Total Cov	er	Vegetation
50% of total cover:	82			Present? Yes X No No

SOIL Sampling Point: 7HI

(inches)	Matrix Color (moist)	%	Color (moist)	x Features	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
-18"	10YR 4/2	90%	Gley1 4/N	10%	MS	М	Sandy clay	
				-00				
	×							
ype: C=C	oncentration, D=Depl	etion, RM=F	Reduced Matrix, M	 S=Masked	Sand Gra	ins.	 <sup>2</sup> Location:	PL=Pore Lining, M=Matrix.
dric Soil	Indicators: (Applica	able to all L	RRs, unless othe	rwise note	d.)		Indicators	for Problematic Hydric Soils <sup>3</sup> :
_ Histoso			Polyvalue Be					luck (A9) (LRR O)
	pipedon (A2)		Thin Dark Su					fuck (A10) (LRR S)
- NOS 636 00 PO00000	istic (A3) en Sulfide (A4)		Loamy Muck Loamy Gleye			0)		ed Vertic (F18) <b>(outside MLRA 150A,</b> l ont Floodplain Soils (F19) <b>(LRR P, S, 1</b>
	d Layers (A5)		Depleted Ma		-/		0. 2000000000000000	lous Bright Loamy Soils (F20)
	Bodies (A6) (LRR P,	T, U)	Redox Dark		6)			RA 153B)
	ucky Mineral (A7) <b>(LR</b>		Depleted Da		33 S			arent Material (TF2)
	resence (A8) (LRR U)	)	Redox Depre		3)			hallow Dark Surface (TF12)
	uck (A9) <b>(LRR P, T)</b> d Below Dark Surface	. (A11)	Marl (F10) (L Depleted Oc		MIDA 14	41	Other (	Explain in Remarks)
and the second s	ark Surface (A12)	5 (ATT)	Iron-Mangan				T) <sup>3</sup> Indic	ators of hydrophytic vegetation and
THE THREE GUIDANNESS OF THE PROPERTY OF THE PR	rairie Redox (A16) (N	ILRA 150A)						and hydrology must be present,
_ Sandy N	Mucky Mineral (S1) (L		Delta Ochric	(F17) <b>(ML</b>	RA 151)		unle	ess disturbed or problematic.
	Gleyed Matrix (S4)		Reduced Ve			and the - a seed		
	Redox (S5)		Piedmont Flo					4500)
	d Matrix (S6) Irface (S7) <b>(LRR P, S</b>	T 115	Anomaious E	Bright Loan	ny Solis (F	-20) (IVILR	A 149A, 153C,	(1530)
	Layer (if observed):	, 1, 0,					1	
Type: No								
	ches): None		_				Hydric Soil	Present? Yes X No
emarks:	-							
	Although hydri	ic soils v	vere assume	ed due	to the	domina	ance of on	lly obligate and facultative
	•							net criteria to be classifie
	as Stripped Ma		•			, , ,		
	ac caippea iii	ati ix (00	/ <b>·</b>					
•	• •							
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Project/Site: Harbor Island S	urvey Area		City	y/County: Nue	ces Coun	ty	Sampling Date: N	ovember 27, 2018
Applicant/Owner: Project Cor	nsulting Service	s, Inc.				State: TX	Sampling Point: _	HI-SP8
Investigator(s): B.J. Hill			Se-					
Landform (hillslope, terrace, et							Slope	(%): 3-5%
Subregion (LRR or MLRA): M						27.8423335538	Datu	
Soil Map Unit Name: Tidal Fla		100				NWI classific		laction.
Are climatic / hydrologic condit			is time of year?	Yes				
Are Vegetation No Soil							present? Yes X	No
Are Vegetation No Soil		550	1000			explain any answe		
SUMMARY OF FINDING					101 1 101 May 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		90 02 000000	atures, etc.
Hydrophytic Vegetation Prese Hydric Soil Present? Wetland Hydrology Present?	Yes	r	10X	Is the Sam within a W		Yes	NoX	1
Remarks: Total rainfall in the six moderates and service, the May-Octobe (62%) above normal May due to the dominance of	r rainfall total v /-October rainf	vas 1.89 i all for the	nches above survey area.	the ANNUA Sample Poi	L rainfall t nt 8HI wa	otal for the surv s determined to	ey area, and 12 be located withi	.38 inches n uplands
HYDROLOGY								
Wetland Hydrology Indicate						AT 1000 IN 10 IN 100	tors (minimum of to	wo required)
Primary Indicators (minimum					<del></del>	Surface Soil		
Surface Water (A1)	-		Fauna (B13)				getated Concave S	urface (B8)
High Water Table (A2)	(c <del>-</del>		eposits (B15) (L			Drainage Pat		
Saturation (A3)			en Sulfide Odo		(OO)	Moss Trim Li		
Water Marks (B1)			d Rhizosphere	577.13	(00ts (C3)		Water Table (C2)	
Sediment Deposits (B2)	).		ce of Reduced		(00)	Crayfish Burn		(CO)
Drift Deposits (B3) Algal Mat or Crust (B4)	10-		Iron Reduction uck Surface (C)		(00)		isible on Aerial Ima Position (D2)	gery (C9)
Iron Deposits (B5)	17-		Explain in Rem			Shallow Aqui		
Inundation Visible on Aer		0.1161 (	LAPIAIII III INCIII	aiks)		FAC-Neutral		
Water-Stained Leaves (E							noss (D8) (LRR T,	m l
Field Observations:	,5)					Opilagilalii ii	1033 (D0) (LIKK 1,	<i>-</i> ,
Surface Water Present?	Vec Nr	X De	epth (inches): _	None				
Water Table Present?	Yes No			None				
Saturation Present?	Yes No			None	Wetland	Hydrology Presen	at? Vos	No_X_
(includes capillary fringe)	S	(S	70.0 ST SECTION			2 1550	it: Tes	NO
Describe Recorded Data (street) ArcGIS basemap.	eam gauge, moni	toring well,	aerial photos, p	orevious inspec	tions), if av	ailable:		
Remarks:								
Wetland hydrology	was not pre	esent at	Sample F	Point 8HL				
Trouding Hydrology	was not pro	, , , , , , , , , , , , , , , , , , ,	. Gampio :	o o				

/EGETATION (Five Strata) – Use scientific names of pl	lants.
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/EGETATION (Five Strata) – Use scientific nam	es of pla	ants.		Sampling Point: 8HI
Ν/Δ		Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size: <u>N/A</u> )		Species?		Number of Dominant Species That Are OBL, FACW, or FAC:1 (A)
2				Total Number of Dominant
3				Species Across All Strata:3 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 33% (A/B)
6				
		= Total Cov		Prevalence Index worksheet:
50% of total cover:	_ 20% of	total cover	:	Total % Cover of: Multiply by:
Sapling Stratum (Plot size: N/A )				OBL species x 1 =
1				FACW species x 2 =
2				FAC species x 3 =
3				FACU species x 4 =
4				UPL species x 5 =
5				Column Totals: (A) (B)
6.				Dravialance Index: - D/A -
		Total Cov	er	Prevalence Index = B/A =
50% of total cover:	:			Hydrophytic Vegetation Indicators:
Shrub Stratum (Plot size: 30 ft x 30 ft )		60001		1 - Rapid Test for Hydrophytic Vegetation
Schinus terebinthifolia	40%	Yes	FAC	2 - Dominance Test is >50%
				3 - Prevalence Index is ≤3.0¹
2				Problematic Hydrophytic Vegetation (Explain)
3				1
4				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5	-		-	
6	40%			Definitions of Five Vegetation Strata:
200/		= Total Cov		Tree – Woody plants, excluding woody vines,
50% of total cover: 20%	_ 20% of	total cover	:0%	approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
Herb Stratum (Plot size: 30 ft x 30 ft )	200/	Voo	FACU	(7.6 cm) of larger in diameter at breast height (DBH).
1. Schizachyrium scoparium	20%	Yes		Sapling – Woody plants, excluding woody vines,
2. Opuntia stricta	5%	Yes_	FACU_	approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
3				
4				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
5				approximately 3 to 20 it (1 to 6 iii) iii neight.
6	7.0			Herb – All herbaceous (non-woody) plants, including
7				herbaceous vines, regardless of size, <u>and</u> woody plants, except woody vines, less than approximately
8				3 ft (1 m) in height.
9				Woody vine – All woody vines, regardless of height.
10	_			voody vine – All woody vines, regardless of freight.
11				
	25% :	= Total Cov	er er	
50% of total cover: 13%	_ 20% of	total cover	5%	
Woody Vine Stratum (Plot size: N/A )				
1				
2			3	
3.				
4.				
5				Hydrophytic
		Total Cov	er	Hydrophytic Vegetation
50% of total cover:	- B			Present? Yes No _X
Remarks: (If observed, list morphological adaptations below		10101 00401		
Tromants. (In observed, list morphological adaptations below	. 1.			
Hydrophytic vegetation was dominant a	t Samr	ole Poir	nt 8HI.	

SOIL Sampling Point: 8HI

	cription: (Describe	to the depth				or confirm	n the absence	of indicate	ors.)	
Depth (inches)	Matrix Color (moist)	<u></u> %	Redo Color (moist)	<u>x Features</u> %	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-20"	10YR 7/2	100%	COIOI (IIIOISE)		1100		Loamy sand		rtomants	
	8 <del>-</del>							ù-		
							*			
		272					<u> </u>			
	8 8	**************************************		-1.51	· · · · · · · · · · · · · · · · · · ·		-			
	× <del></del>			-			-			*
	2	· · · · · · · · · · · · · · · · · · ·						7		
	ş <u></u>	. — —		-				-		
	oncentration, D=Dep	THE RESERVE THE PERSON OF THE	100 March 1980 1980 1980 1980 1980 1980 1980 1980			ains.			ining, M=Matr	
lydric Soil	Indicators: (Applic	able to all LF	RRs, unless othe	rwise note	d.)		Indicators	for Proble	matic Hydric	Soils <sup>3</sup> :
Histoso			Polyvalue Be							
11	pipedon (A2)		Thin Dark Su					luck (A10)		
Jr. — Non Kitchell (1900)	istic (A3)		Loamy Muck	- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	77. 7.084 (\$7.04.5647.46.479	0)			18) (outside l	
	en Sulfide (A4) d Layers (A5)		Loamy Gleye		-2)		311 Decoroners (5000)		ain Soils (F19)	
	Bodies (A6) (LRR P	TIN	Depleted Ma Redox Dark		3)			ilous Brigili RA 153B)	Loamy Soils (	F20)
	ucky Mineral (A7) (LF		Depleted Da	25				arent Mater	ial (TF2)	
	resence (A8) (LRR U		Redox Depre		9 6				k Surface (TF1	2)
	uck (A9) (LRR P, T)	,	Marl (F10) (L		,			Explain in		
	d Below Dark Surfac	e (A11)	Depleted Oc		MLRA 15	51)				
Thick D	ark Surface (A12)		Iron-Mangan	ese Masse	s (F12) (	LRR O, P,	T) <sup>3</sup> Indic	ators of hy	drophytic vege	tation and
ac services contact w	rairie Redox (A16) <b>(l</b>	THE REPORTS IN THE PROPERTY OF THE PARTY OF	Umbric Surfa	percentage and a contract of the contract of t		, U)		massing and some more and	ogy must be p	
20 1000 AND	Mucky Mineral (S1) (I	LRR O, S)	Delta Ochric					ess disturbe	ed or problema	tic.
	Gleyed Matrix (S4)		Reduced Ve							
	Redox (S5) d Matrix (S6)		Piedmont Flo				19A) RA 149A, 153C,	452D)		
	rface (S7) <b>(LRR P, \$</b>	S T 10	Allomaious i	origini Loan	iy Solis (i	-20) (NILK	A 149A, 133C	(1330)		
	Layer (if observed):									
Type: N	151 11									
	ches): None		_				Hydric Soil	Present?	Yes	No X
Remarks:										
	Hydric soils w	ere not n	resent at Sa	ample F	Point 8	HI				
	riyano oono w	oro not p	rosoni ai oi	annpic i	Ollito					

Project/Site: Harbor Island S	urvey Area		City/County: Nu	eces Coun	ty	Sampling Date: No	vember 27, 2018
Applicant/Owner: Project Cor	nsulting Services,	Inc.			State: TX	Sampling Point:	
Investigator(s): B.J. Hill							
Landform (hillslope, terrace, et						Slope	(%): 3-5%
Subregion (LRR or MLRA): M					27.8422890121	Datu	
Soil Map Unit Name: Tidal Fla		10201010101010			NWI classific		86865
Are climatic / hydrologic conditi			ear? Yes				
Are Vegetation No Soil						present? Yes X	No
Are Vegetation No Soil		1			explain any answe		_ 140
SUMMARY OF FINDING							tures, etc.
Hydrophytic Vegetation Prese Hydric Soil Present? Wetland Hydrology Present?	Yes	No X No X No X	Is the San	npled Area /etland?	Yes	NoX	
Remarks: Total rainfall in the six moderates and service, the May-Octobe (62%) above normal May due to the dominance of	r rainfall total wa ⁄-October rainfall	s 1.89 inches ab for the survey a	ove the ANNUA rea. Sample Po	L rainfall t nt 9HI wa	total for the surv s determined to	ey area, and 12. be located withir	38 inches n uplands
HYDROLOGY							
Wetland Hydrology Indicate		101 NV 1079000 PA 00400			Secondary Indica	ators (minimum of tw	vo required)
Primary Indicators (minimum					Surface Soil		
Surface Water (A1)	_	Aquatic Fauna (B1				getated Concave Su	ırface (B8)
High Water Table (A2)	( <del>-</del>	Marl Deposits (B1			Drainage Pa		
Saturation (A3)		Hydrogen Sulfide			Moss Trim L		
Water Marks (B1)		Oxidized Rhizosph	377.13	Roots (C3)		Water Table (C2)	
Sediment Deposits (B2)	¥ <del></del>	Presence of Redu			Crayfish Bur		1221
Drift Deposits (B3)	17		ction in Tilled Soils	(C6)		isible on Aerial Imag	jery (C9)
Algal Mat or Crust (B4)		Thin Muck Surface				Position (D2)	
Iron Deposits (B5)		Other (Explain in I	Remarks)		Shallow Aqu		
Inundation Visible on Aer					FAC-Neutral		IV:
Water-Stained Leaves (E	19)				Spnagnum n	noss (D8) (LRR T, L	J)
Field Observations:	V. N	X 5 " " 1	None				
Surface Water Present?		X Depth (inches					
Water Table Present?		X Depth (inches					🗸 📗
Saturation Present? (includes capillary fringe)	Yes No _	X Depth (inches	s): None	Wetland	Hydrology Preser	nt? Yes	No X
Describe Recorded Data (stree ArcGIS basemap.	eam gauge, monitor	ing well, aerial phot	os, previous inspe	ctions), if av	ailable:		
Remarks:							
Wetland hydrology	was not pres	ent at Sampl	e Point 9HL				
Wouldn't Try ar ology	was not proc	one at Gampi					

/EGETATION (	Eivo Strata	Lleo eciontific	names of	plante
VEGETATION	rive Strata) -	Ose scientific	Harries or	piarits.

<b>EGETATION (Five Strata)</b> – Use scientific nam	es of pla	ants.		Sampling Point:9HI
To Control (District N/A		Dominant		Dominance Test worksheet:
T <u>ree Stratum</u> (Plot size: <u>N/A</u> ) 1		Species?		Number of Dominant Species That Are OBL, FACW, or FAC:1 (A)
2				Total Number of Dominant
3				Species Across All Strata: 2 (B)
1				Percent of Dominant Species 500/
5				That Are OBL, FACW, or FAC: 50% (A/B)
Š				
		= Total Cov		Prevalence Index worksheet:
50% of total cover:	_ 20% of	total cover		Total % Cover of: Multiply by:
Sapling Stratum (Plot size: N/A )				OBL species x 1 =
L				FACW species x 2 =
2.	-			FAC species 40 x 3 = 120
				FACU species x 4 = 40
i				UPL species x 5 =
5				Column Totals: (A) (B)
5.				Prevalence Index = B/A =3.2
ä		= Total Cov	er	Hydrophytic Vegetation Indicators:
50% of total cover:	_ 20% of	total cover		1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: 30 ft x 30 ft )				2 - Dominance Test is >50%
1. Schinus terebinthifolia	40%	Yes	FAC	3 - Prevalence Index is ≤3.0¹
2.				Problematic Hydrophytic Vegetation¹ (Explain)
3.				Problematic Trydrophrytic Vegetation (Explain)
4.				
5.				Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
6		<del></del> i		Definitions of Five Vegetation Strata:
·	40%	= Total Cov		Sommons of the vogetation endia.
50% of total cover: _ 20%				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in.
Herb Stratum (Plot size: 30 ft x 30 ft )	_ 20 /0 01	total cover		(7.6 cm) or larger in diameter at breast height (DBH).
Opuntio atriata	10%	Yes	FACU	
				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less
2.				than 3 in. (7.6 cm) DBH.
3				Church 10/and relate levels discovered to ince
1				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
5	-			NATIONAL STREET, STREE
5				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody
7				plants, except woody vines, less than approximately
3				3 ft (1 m) in height.
)				Woody vine - All woody vines, regardless of height.
10				, , , , , , , , , , , , , , , , , , , ,
1				
		= Total Cov		
50% of total cover: 5%	_ 20% of	total cover	2%	
Woody Vine Stratum (Plot size: N/A )				
1				
2.				
3				
4	70			
5				Hydrophytic
		= Total Cov	er	Vegetation
50% of total cover:	20% of	total cover		Present? Yes No _X
Remarks: (If observed, list morphological adaptations below				L
Hydrophytic vegetation was dominant a		ole Poir	t 9HI	
Tydrophytic vegetation was dominant a	Camp	JIC I UII	it Of III.	

SOIL Sampling Point: 9HI

	cription: (Describe	to the depth				or confirm	the absence	of indicate	ors.)	
Depth (inches)	Matrix Color (moist)	<u></u> %	Redo Color (moist)	x Features %	s Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
0-18"	10YR 7/2	100%	COIOI (IIIOISI)		1100		Loamy sand	-	Romants	
		- 10070		-0.						2.
<u>-</u>	8 <del>2</del>			- 0	1		-			
100	S 2			-100			<u> </u>			
		34 24		100	£ €.		-			
				-133	1		* *			
	2 2	·								
<u> </u>	-									
The second secon	oncentration, D=Dep	70 NO 20 NO NO NO NO NO				ains.			ining, M=Matr	
Hydric Soil	Indicators: (Applic	able to all Li	RRs, unless othe	rwise note	ed.)		Indicators	for Proble	matic Hydric	Soils <sup>3</sup> :
Histoso			Polyvalue Be							
	pipedon (A2)		Thin Dark Su					uck (A10)		
7 No. 1 (10. 10. 10. 10. 10. 10. 10. 10. 10. 10.	istic (A3)		Loamy Muck	The second transfer of the second	**************************************	(O)				MLRA 150A,B)
	en Sulfide (A4)		Loamy Gleye		F2)		Sit Description Programmer			(E20)
	d Layers (A5) : Bodies (A6) <b>(LRR P</b>	T III	Depleted Ma Redox Dark		(6)			A 153B)	Loamy Soils	(FZU)
	ucky Mineral (A7) (LF		Depleted Da	A 100 A				rent Mater	ial (TF2)	
	resence (A8) (LRR U		Redox Depre						Surface (TF	12)
ES ST. CO.	uck (A9) (LRR P, T)	Á	Marl (F10) (L		- 2			Explain in I		,
	d Below Dark Surfac	e (A11)	Depleted Oc		(MLRA 1	51)		2.0		
Thick D	ark Surface (A12)		Iron-Mangan	iese Mass	es (F12) <b>(</b>	LRR O, P,	T) <sup>3</sup> Indica	ators of hyd	drophytic vege	etation and
- STANDARY CHANGE W	rairie Redox (A16) <b>(N</b>	THE REPORTSON IN THE PROPERTY OF THE	ANALYST THE STATE OF THE ANALYST STATE	CONTRACTOR OF THE PROPERTY		, U)			ogy must be p	
30. 30000000000000000000000000000000000	Mucky Mineral (S1) (L	.RR O, S)	Delta Ochric					ss disturbe	ed or problema	atic.
	Gleyed Matrix (S4)		Reduced Ve							
20 April 10	Redox (S5)		Piedmont Flo					452D)		
	d Matrix (S6) ırface (S7) <b>(LRR P, S</b>	5 T 113	Anomaious i	Bright Loar	ny Solis (	F20) (WLK	A 149A, 153C,	1530)		
	Layer (if observed):						T			
Type: N	151 31 5									
	ches): None						Hydric Soil	Procent?	Yes	No X
2000			_				Tiyane oon	rieseilt:	163	. 140
Remarks:	Hydric soils w	ara not n	resent at Sa	amnla l	Point C	Ш				
	riyano sons w	ere not p	nesent at Se	ampie i	Ontes	'I II.				