APPENDIX I

ADDITIONAL EXPERT ANALYSIS - WETLAND DELINEATION (CK ASSOCIATES)

8591 UNITED PLAZA BLVD
SUITE 300
BATON ROUGE, LA 70809
PHONE (225) 755-1000
FAX (225) 751-2010
www.c-ka.com

HOUSTON, TX
PHONE (281) 397-9016
FAX (281) 397-6637

LAKE CHARLES, LA
PH0NE (337) 625-6577
FAX (337) 625-6580

SHREVEPORT, LA
PHONE (318) 797-8636
FAX (318) 798-0478

October 31, 2022

Liskow & Lewis
A Professional Law Corporation
822 Harding Street
P.O. Box 52008
Lafayette, Louisiana 70503
ATTN: Mr. John Troutman

Re: August J. Levert, Jr., Family, LLC, et al vs. BP America Production Company
18th JDC, Iberville Parish, LA
Docket No. 78953 Div. "A"
C-K Associates' Project Number

Dear Mr. Troutman:

I respectfully submit the enclosed report regarding approximately 57 acres of property located in the Iberville Parish, LA, specifically the North Half (N/2) of Fractional Section 15, Township Ten South (T10S), Range 11 East (R11E), Parcel Number 0800988025 in the Tax Roll Records in the Assessor's Office in Iberville Parish. This report provides a delineation of potential wetland and aquatic resources that may be regulated by the U.S. Army Corps of Engineers under Section 404 of the Clean Water Act.   In addition, I provide my opinion as to the character of areas as upland or type of wetland as defined in Louisiana Title 43, Part XIX, Statewide Order 29-B, Chapter 3, §301.

If there are any questions or you require any additional information, do not hesitate to contact me at your convenience.

Sincerely,

Wade Bryant

Wade L. Bryant Jr.
Senior Environmental Scientist
CK Associates

1.0 INTRODUCTION

C-K Associates, LLC (CK) was retained by the law firm Liskow & Lewis, on behalf of BP America Production Company to delineate aquatic resources that may be regulated by the U.S. Army Corps of Engineers under section 404 of the Clean Water Act (CWA), on approximately 57 acres in Iberville Parish LA (Figure 1). In addition, I was asked to provide an opinion as to the category of wetland areas as "Submerged", "Elevated", or neither as defined in Title 43 NATURAL RESOURCES Part XIX. Office of Conservation—General Operations Subpart 1. Statewide Order No. 29-B Chapter 3. Pollution Control—Onsite Storage, Treatment and Disposal of Exploration and Production Waste (E&P Waste) Generated from the Drilling and Production of Oil and Gas Wells (Oilfield Pit Regulations)

The property is located within the Grand River Oil and Gas Field and is the subject of the lawsuit captioned August *J. Levert, Jr., Family, LLC et al., v. BP America Production Company*, 18th Judicial District Court for the Parish of Iberville, Docket No. 078953, Division "A". The property is situated in the North Half (N/2) of Fractional Section 15, Township Ten South (T10S), Range 11 East (R11E), Parcel Number 0800988025 in the Tax Roll Records in the Assessor's Office in Iberville Parish. The property is approximately 2.6 miles north of the USGS 07381450 Lower Grand River at Bayou Sorrel, LA Gage (Figure 1). The coordinates of the approximate center of the property are 30.19598N and 91.33973W.

2.0 SITE DESCRIPTION

The property lies within the Atchafalaya River Flood Basin. The Atchafalaya River carries about 30% of the combined flow of the Mississippi and Red Rivers and the basin of the Atchafalaya contains the largest wetlands in North America. The basin is constrained to the east and west by levees designed to contain the spring flood. In addition to the east and west levees, hydrologic manipulations for transportation, flood control, logging, and mineral extraction have altered flow patterns.

The site is in Hydrologic Unit Code 08070300 Lower Grand which encompasses approximately 790 square miles within a levee system and upstream from the Bayou Sorrel Lock. This lock provides navigation via the Gulf Intracoastal Waterway (GIWW) from Morgan City to Port Allen and flood protection. The operation of the lock to allow barge traffic to pass influences the water level in Bayou Sorrel and often results in reverse flows when closed.

Prior to conducting the field investigation, CK reviewed aerial photography (example in Figure 2), elevation data [Light Detection and Ranging (LIDAR) data and Digital Elevation Models (DEM)], soil data and National Wetland Inventory maps.

Based on LIDAR data, excluding the man-made levees, the topography the property is relatively flat elevation ranging from +2.5 to +5 feet with levee deposits piles +14ft NAVD (Figures 3, 4). An example elevation profile from top of levee to cypress dominated swamp is provided in Figure 4. A plot of acres by elevation range bin for the 5mx5m cell size raster DEM data is shown in Figure

5. Values less than 1ft are open water canals. Values between 1ft and 2.5ft are along the edge of the canals on the toe of the levees. Elevations 3ft -4ft appear to be natural elevations (no levee deposit influence). Elevations 4ft – 14.5ft are associated with levee deposits along the canals.

USDA-Natural Resources Conservation Service data show the property as 100 percent Dowling Association – Frequently Flooded (Figure 6) except for open water areas. As per the Official Series Description: "series consists of very deep, very poorly drained, very slowly permeable soils that formed in clayey alluvium. These soils are in low, ponded oxbow depressions and backswamp areas of the lower Mississippi River alluvial plain. Slopes are less than 1 percent." The 0 horizon, where present, has hue of 10YR, value of 2 to 4, and chroma of 1; or value of 2 or 3 and chroma of 2; or it is neutral with value of 4. Thickness is less than 8 inches. Texture is muck or mucky peat.

National Wetlands Inventory data for the site were obtained using the U.S. Fish and Wildlife Service (USFWS) Wetland Mapper interface (Figure 7). For the NWI, wetlands at the site were photo interpreted using 1:65,000 scale, color infrared imagery from 11/21/1988. Three wetland types (codes) were identified on the site: PFO1C, PFO1/2C and PEM1F. These are further defined as follows:

      PFO1C - Palustrine forested broad-leaved deciduous trees. Seasonally flooded with surface water present for extended periods especially early during the growing season but can be absent by the end of the growing season in most years.

      PFO2/1C - Palustrine forested area is dominated more by needle-leaved deciduous trees than by broad-leaved deciduous. Seasonally flooded with surface water present for extended periods especially early during the growing season but can be absent by the end of the growing season in most years.

      PEM1F are dominated by emergent plants. The water regime is Semi permanently Flooded, surface water persists throughout the growing season in most years.

The USFWS's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis. It is important to note, wetlands may have changed since the date of the imagery.

3.0 WETLAND DELINEATION

CK visited the project area on August 8 and 9, 2022. Five data points (DP) were collected during the September 2022 site visit (Figure 9). See Appendix A for all wetland determination data forms and example photographs. The wetland delineation followed routine onsite field procedures as outlined by the USACE (1987 and 2010). Soil references include the NRCS (2022, 2022a, and 2022b), and USDA (2010). Plant nomenclature and wetland indicator status is taken from The

National Wetland Plant List (USACE 2020). Plant nomenclature not listed in The National Wetland Plant List is taken from NRCS PLANTS Database (NRCS 2016).

Wetland hydrology was based on the observation of wetland hydrology indicators, as described by USACE (2010). Wetland hydrology criteria were met if at least one primary indicator was observed or a minimum of two secondary indicators were observed.

Dominant vegetative species present within each data point were documented for all vegetation strata, including the tree stratum, sapling/shrub stratum, herbaceous stratum, and woody vines stratum. Percent absolute cover for each species was determined by visual estimation. Plant communities met hydrophytic vegetation criteria if all dominant species across all strata are classified as obligate-wetland and/or facultative-wetland, or if greater than 50% of all dominant species from all strata were classified as obligate-wetland, facultative-wetland, and/or facultative species, or if the prevalence index is 3.0 or less (USACE 2010). Dominant species were selected using the "50/20 rule" described by the USACE (2010).

Soil profiles were obtained with either a split spoon sampler or by excavating an approximate 24 inch soil pit with a shovel. Soil color was recorded by matching soil samples throughout the profile to color chips contained in a Munsell soil color chart. The presence or absence of hydric soils was determined utilizing the methods and procedures outlined by the USACE (2010).

Three mandatory technical criteria for determining the presence of a wetland are, with exceptions, 1) prevalence of hydrophytic vegetation, 2) wetland hydrology, and 3) hydric soils (USACE 1987). Hydrophytic vegetation is defined as "the sum total of macrophytic plant life growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content" (USACE 1987). "Prevalent vegetation is characterized by the dominant species comprising the plant community or communities. Dominant plant species are those that contribute more to the character of a plant community than other species present, as estimated or measured in terms of some ecological parameter or parameters" (USACE 1987). The term wetland hydrology describes "the sum total of wetness characteristics in areas that are inundated or have saturated soils for a sufficient duration to support hydrophytic vegetation" (USACE 1987). A hydric soil is defined as "a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part" (USDA 2017).

Data points and locations of additional observations (ex. edge of water, transitions between upland and wetland) were mapped with a Trimble® d® 5 Differential Global Positioning System (DGPS) utilizing real-time corrections. Photographs were taken with a GPS enabled camera, but locations are not as accurate as with a Trimble® GPS. Data was imported into ESRI® ArcMap Version 10.8. Wetland areas were mapped using a combination of field observations, LIDAR elevation data and aerial imagery.

The USACE under the authority of the Clean Water Act, Section 404 and the Rivers and Harbor Act, Section 10 has the responsibility to make the final determination of the location and extent

of jurisdictional wetlands and navigable waters within the project area, respectively. This report represents my opinion and should be considered preliminary until final concurrence is obtained from the New Orleans District Army Corps of Engineers office.

In my opinion, based on USACE criteria the site has 13.25 acres of open water, 4.52 acres non-wetlands, and 39.13 acres of wetlands (Figure 9).

4.0 UPLAND, SUBMERGED OR ELEVATED AS PER 29-B

I was asked to provide an opinion as to the character of the site as upland or wetland type as defined in S Title 43, Part XIX, Statewide Order 29-B, Chapter 3, §301. There are three relevant definitions:

(1) Submerged Wetland Area- a wetland area which is normally inundated with water and where only levee material is available for mixing with waste fluids during closure of a pit.

(2) Elevated Wetland Area- a wetland area which is not normally inundated with water and where land mass and levee material are available for mixing with waste fluids during closure of a pit.

(3) Upland Area- an area which is not identified as a wetland and includes farmland, pastureland, recreational land, and residential land.

I combined my field observations (vegetation, hydrology, soils, and elevation transects) with a review of water level data, LIDAR elevations, and historical imagery to form my opinion.

The influence of the man-made levee on the character of the wetlands at the site was obvious. There is an unmistakable transition along the gradient of elevation (and therefore the frequency, duration, and depth of flooding) due to the man-made levee (Figures 10 and 11).   Along the gradient from highest elevation to lowest elevation, there is a transition from non-wetland (green Figures 10 and 11), through wetlands (yellow) with hydric soils but lacking mucky O horizon and dominance of facultative wetland plants to wetlands (red), soils with O horizon (muck), and obligate wetland plants.

I evaluated water levels collected since November 2001 at USGS 07381450 Lower Grand River at Bayou Sorrel, LA Gage (Figure 1) within the context of elevations at the site as per LIDAR data. In addition, I reviewed aerial imagery collected since 2001 to cross reference water levels to inundation at the site.   I combined this information with observations from the August 8 and 9, 2022 site visits to form my opinions.

In forming my opinions and for the purposes of illustrating conditions at the site, I utilized a classification of bottomland hardwood forest into zones, according to flooding conditions, that is common knowledge to wetland scientists (Figure 10) and contained in textbooks on the subject. I followed the definitions of water regimes from continuously to intermittently flooded as shown

in Figure 12. As "normally inundated" is not defined in 29-B, I considered the frequency of flooding > 50 percent (Zones I – 4) to be "normally inundated"

The site has all the zones depicted in Figure 10. Photographs within each zone are provided in Figures 13 – 28 and follow the gradient from Zone II through Zone IV / uplands.

I considered Zones II-IV to meet the definition of "submerged". These wetlands areas have mucky / high organics in the O horizon and have a higher prevalence of obligate wetland plants. At the Levert site, I determined Zone II-Zone IV generally have elevations between 1 and 7 ft NAVD.

The wetland areas within the site that lack mucky O horizons and lack obligate wetland plants are along a "bathtub ring" transition zone (Figures 10 and 11 - yellow) along the slope of the levee. At the Levert site, these areas have elevation between 8 and 9 ft NAVD. These areas meet the USACE definition of wetland but in my opinion are not "normally" inundated.

In my opinion, there are 37.07 acres of wetland that meet the definition of "submerged". These areas are normally inundated (normal events – most years) and there is only levee material adjacent to these areas (from man-made canals) that could be used for mixing. This is based on my interpretation that long range transport via barge or helicopter of land mass should not be considered as available within context of 29-B.

In my opinion, there are 2.06 acres of wetland that do not meet either the definition of "submerged" or "elevated". These areas are not normally inundated (takes an abnormal event) but there is no "land mass" available for mixing with waste fluids during closure of the pit.

In my opinion, there are 4.52 acres of non-wetland associated with man-made levees.

If wetlands with mucky soils, dominance of obligate wetland plant species, and frequency of flooding > 50 out of 100 years are not "normally inundated" then there are NO forested wetlands in Louisiana that would meet the definition.

6.0 LITERATURE CITED

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U.S. Department of Agriculture [USDA]. Natural Resources Conservation Service. 2010. Field Indicators of Hydric Soils in the United States, Version 7.0. ed. L.M. Vasilas, G.W. Hart, and C.V. Noble. USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.
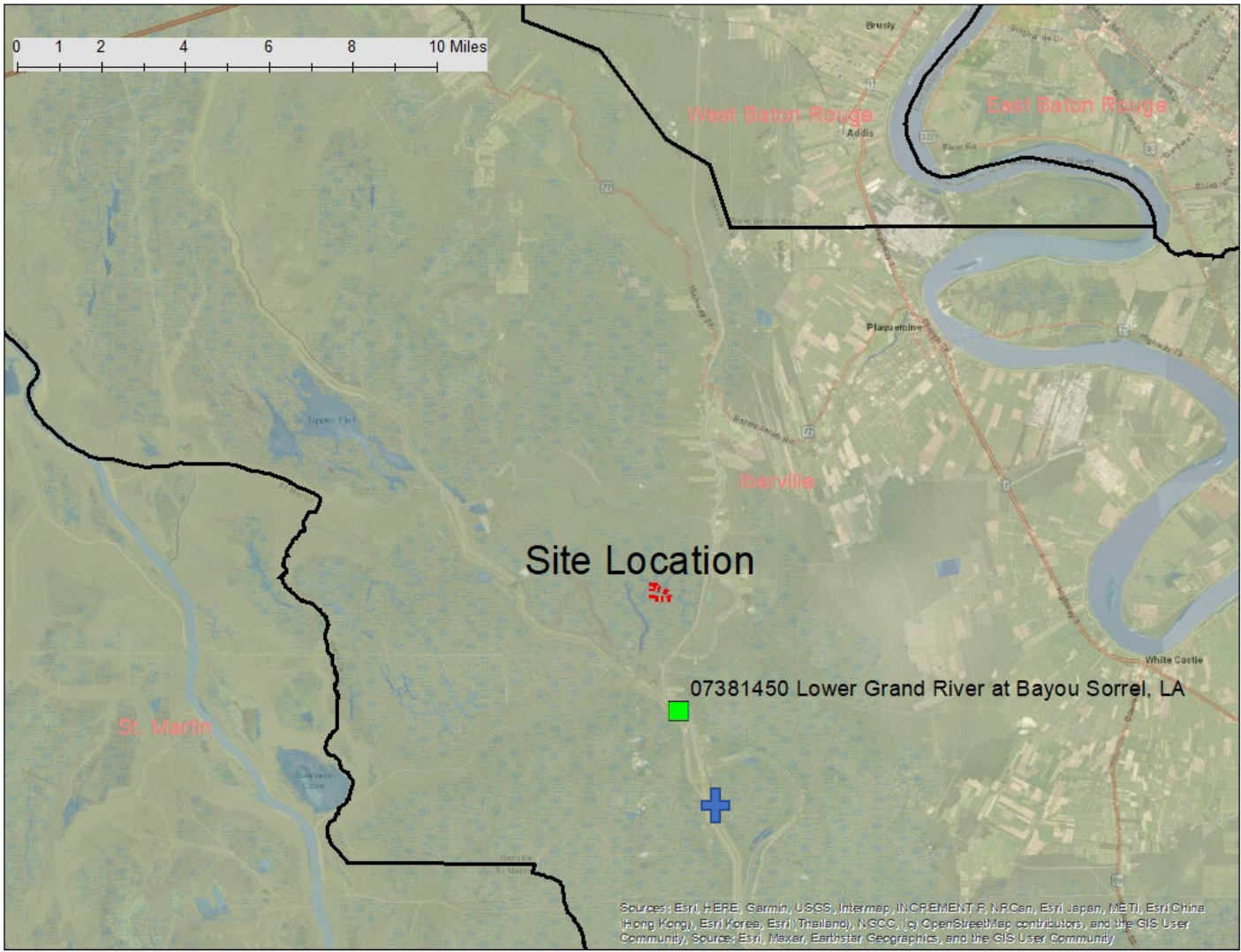
Figure 1. Site Location in Iberville Parish. The site is 2.6 mile north of the USGS Lower Grand River at Bayou Sorrel gaging station.

Bayou Sorrel Locks shown ✚

Figure 2. Site 1952 and 2010.
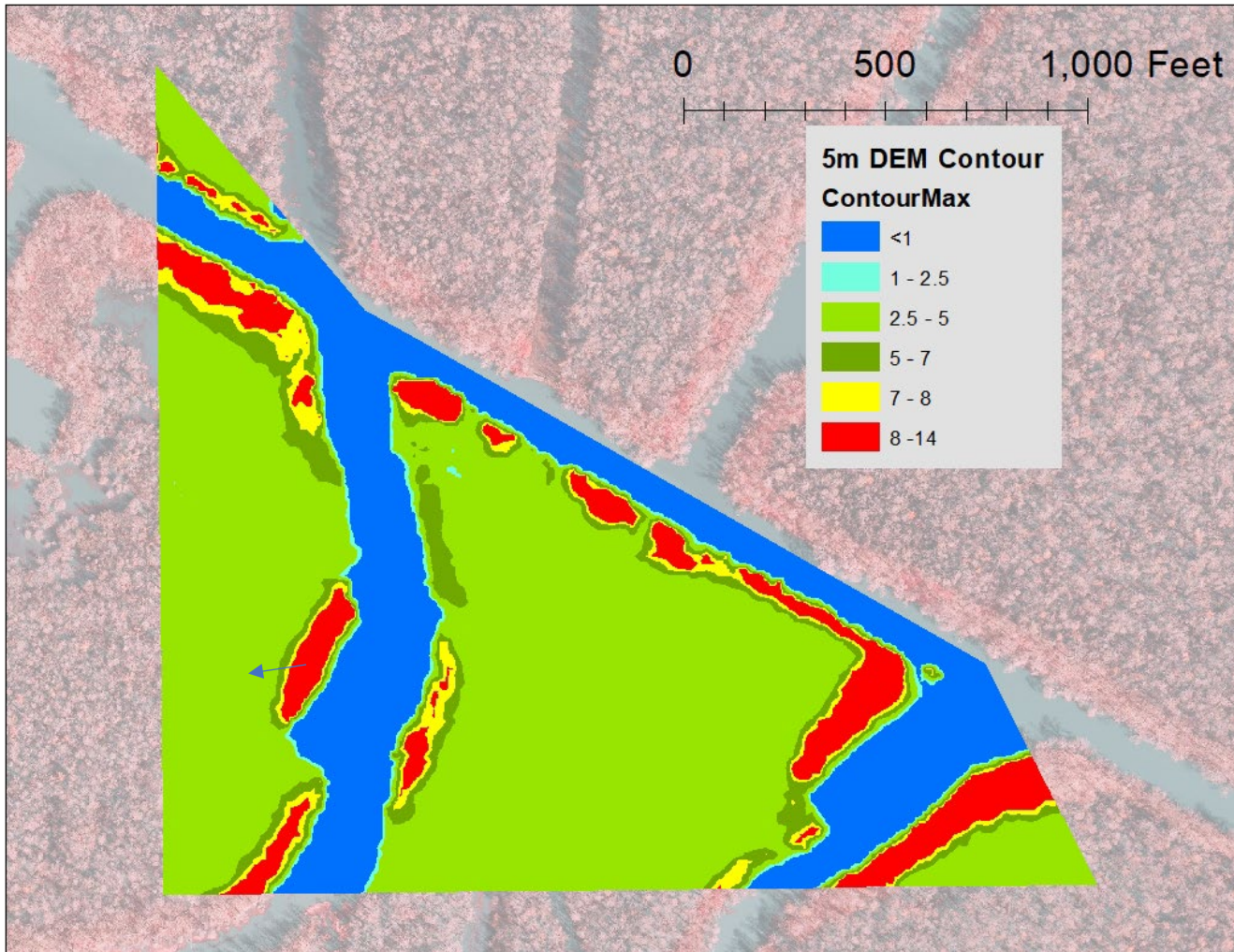
Figure 3. Topographic Contours based on 5m x 5m LIDAR data. Note the steep slope adjacent to berms. There was a noticeable change in soils and vegetation across the gradients from interior areas to the top of the berms.
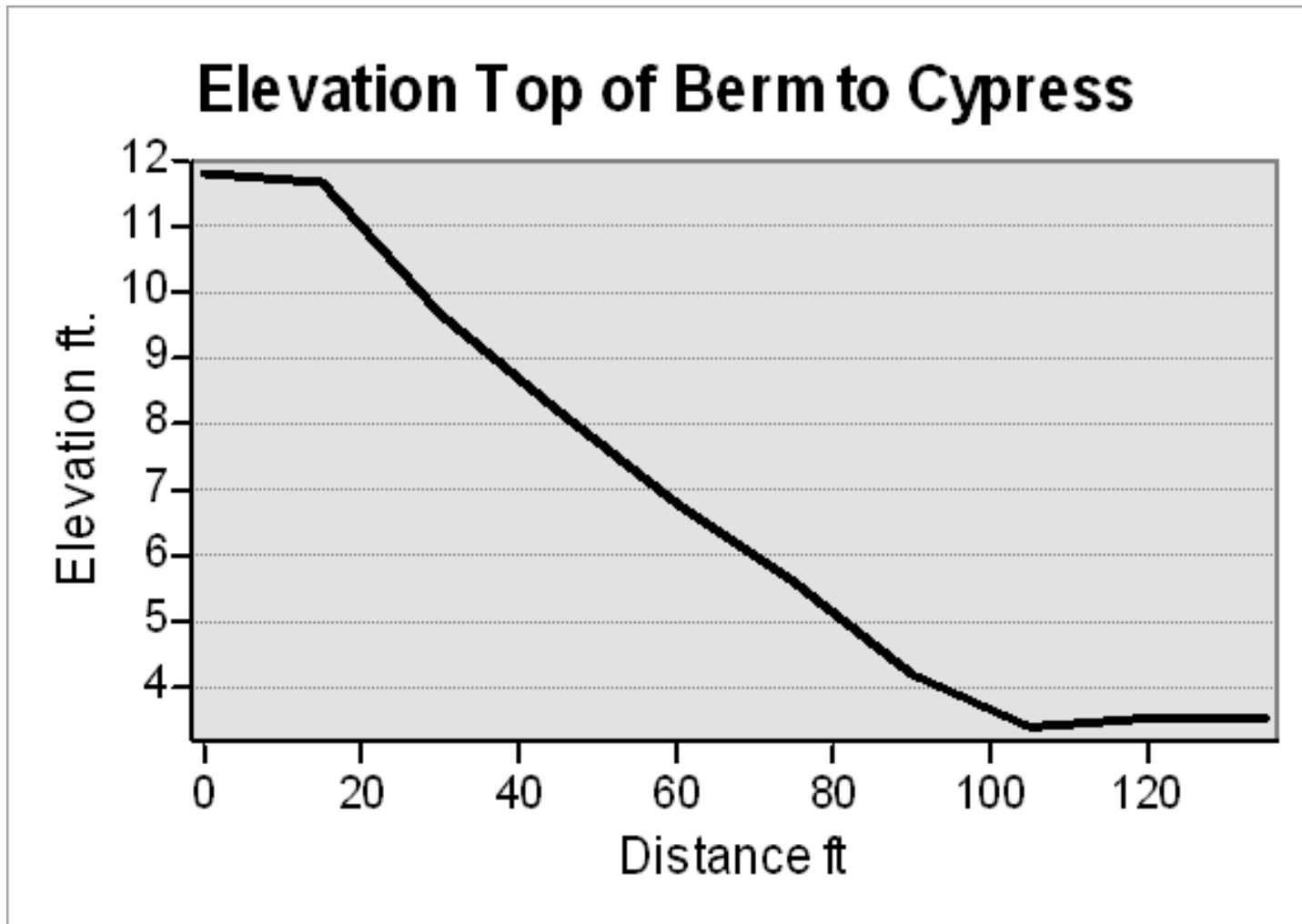
Figure 4. Example elevation profile from top of berm (upland @11.8 ft) to submerged wetland (@ < 4ft - cypress / tupelo)., approximately 8% slope (8 ft / 100 ft). Based on LIDAR digital elevations 5m x 5m resolution. Location of profile shown with arrow in Figure 2.
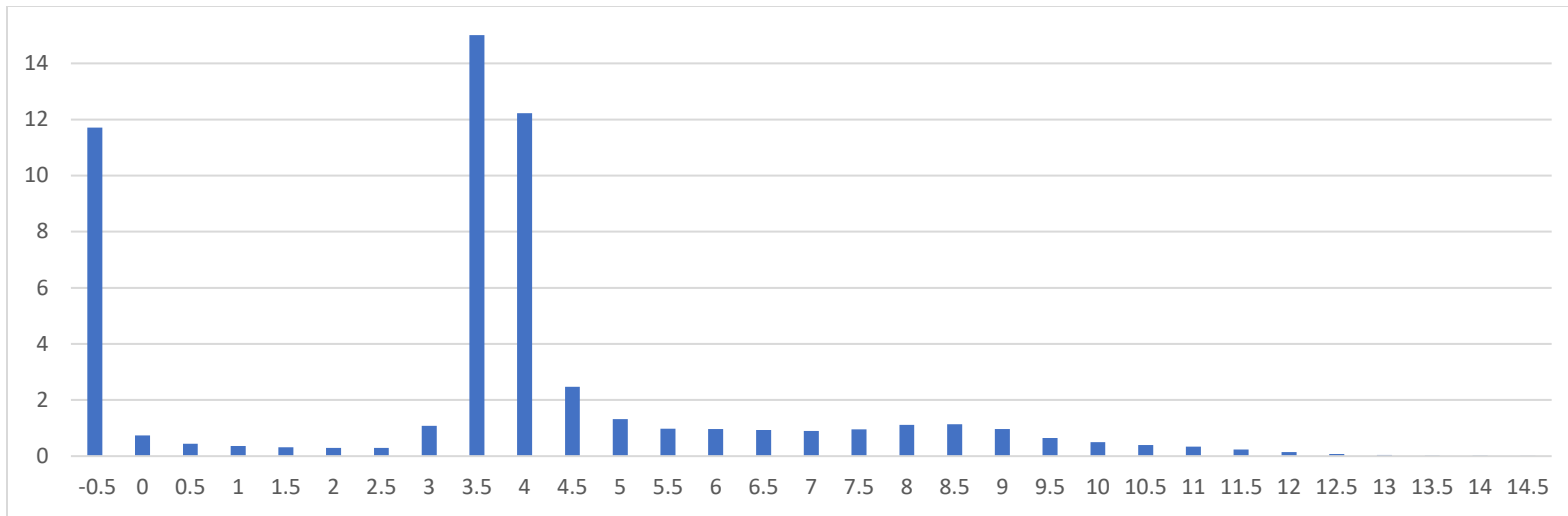
Figure 5. Distribution of elevation values for 5mx5m LIDAR raster data clipped to the site boundary. Acres (y axis) by upper range of elevation (NAVD ft.) Values less than 1 are open water. Values between 1 and 2.5 are along the edge of the canals. Elevations 3-5 appear to be natural elevations (no levee deposit influence). Elevations 5 – 14.5 are due to levee deposits along the canals.
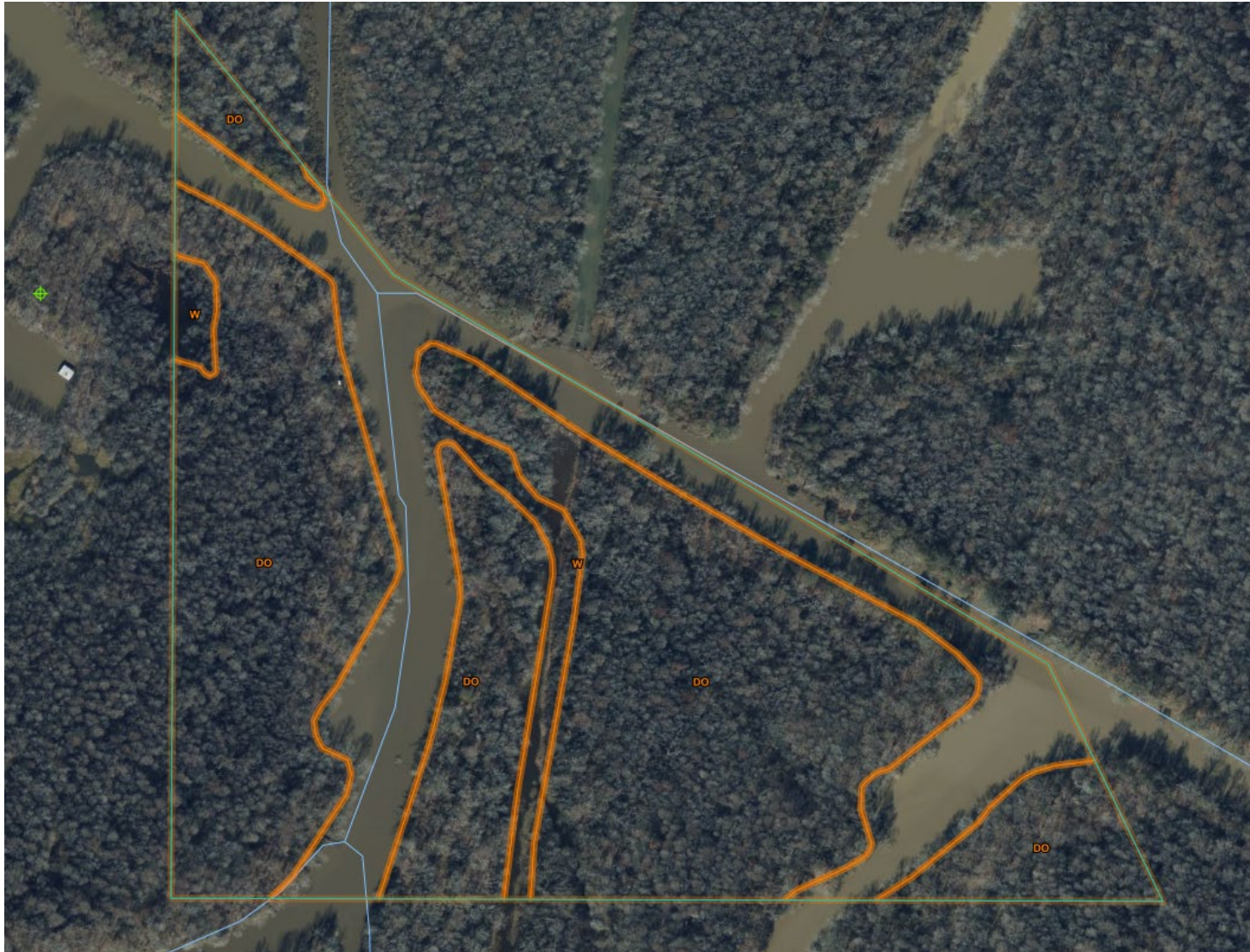
Figure 6. Soils classifications
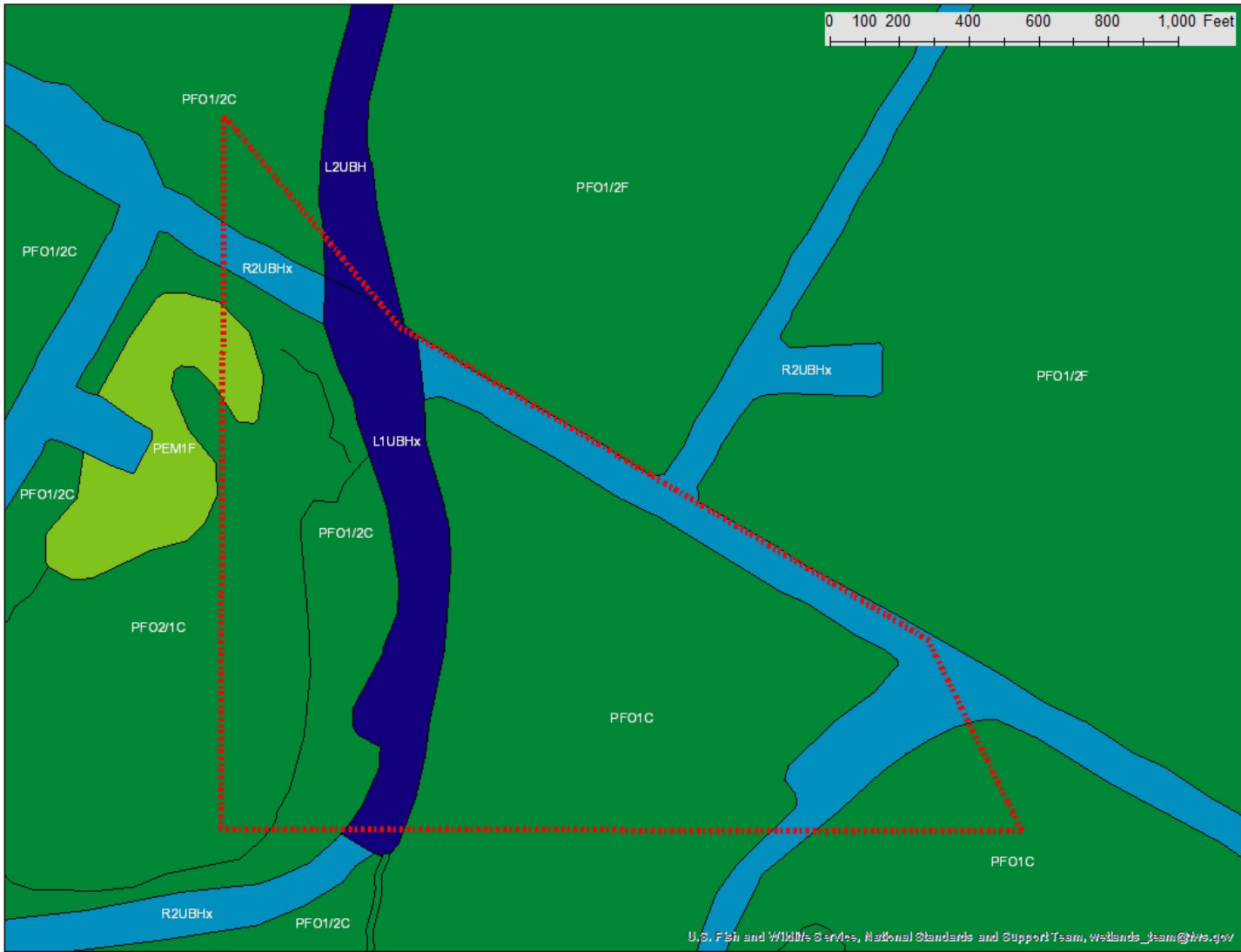
Figure 7. Wetland and Aquatic types according to U.S. Fish and Wildlife National Wetlands Inventory.
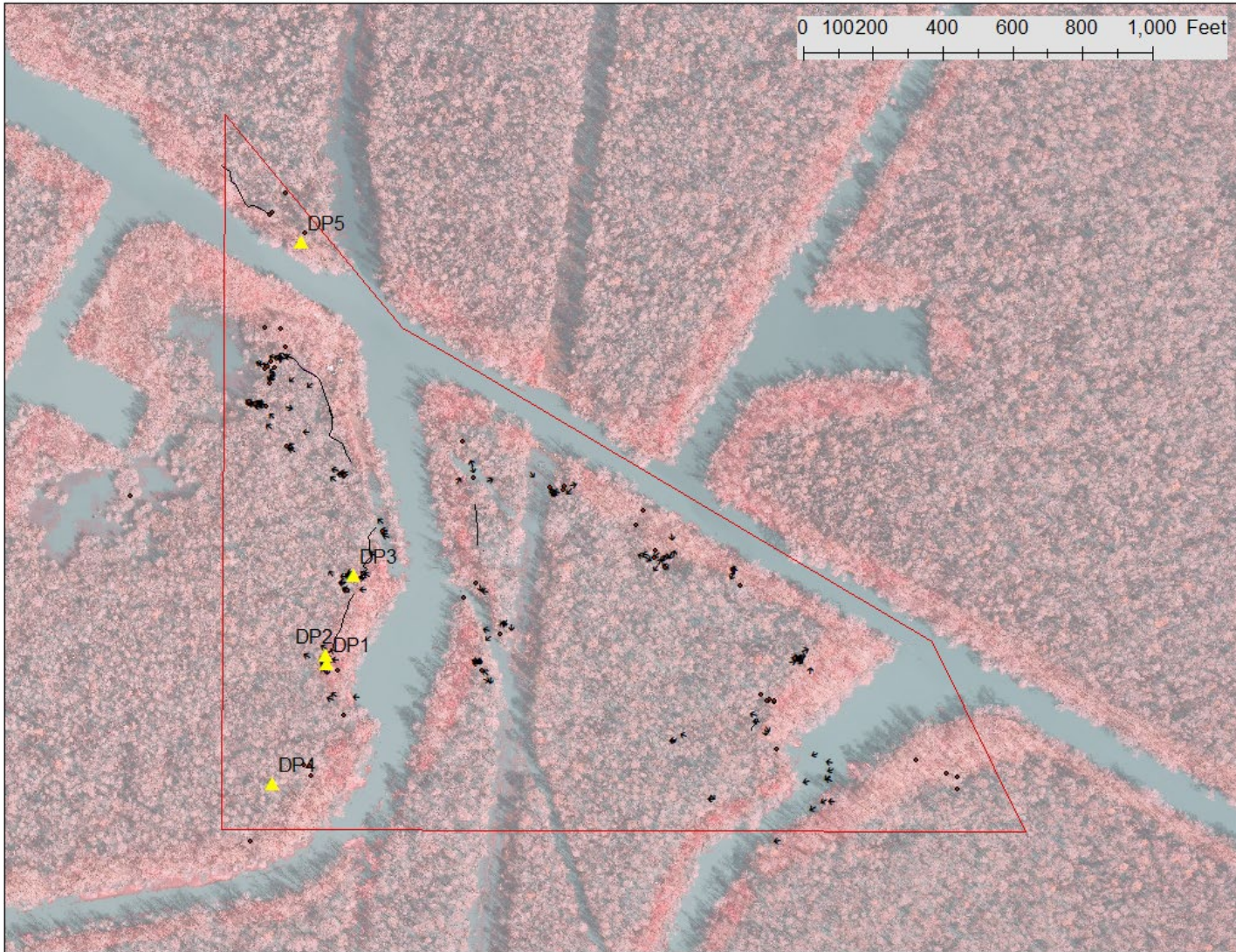
Figure 8. Location of data points and other observations. Image background is 2010 False color infrared. Note the difference between vegetation along the levee and interior wetlands.
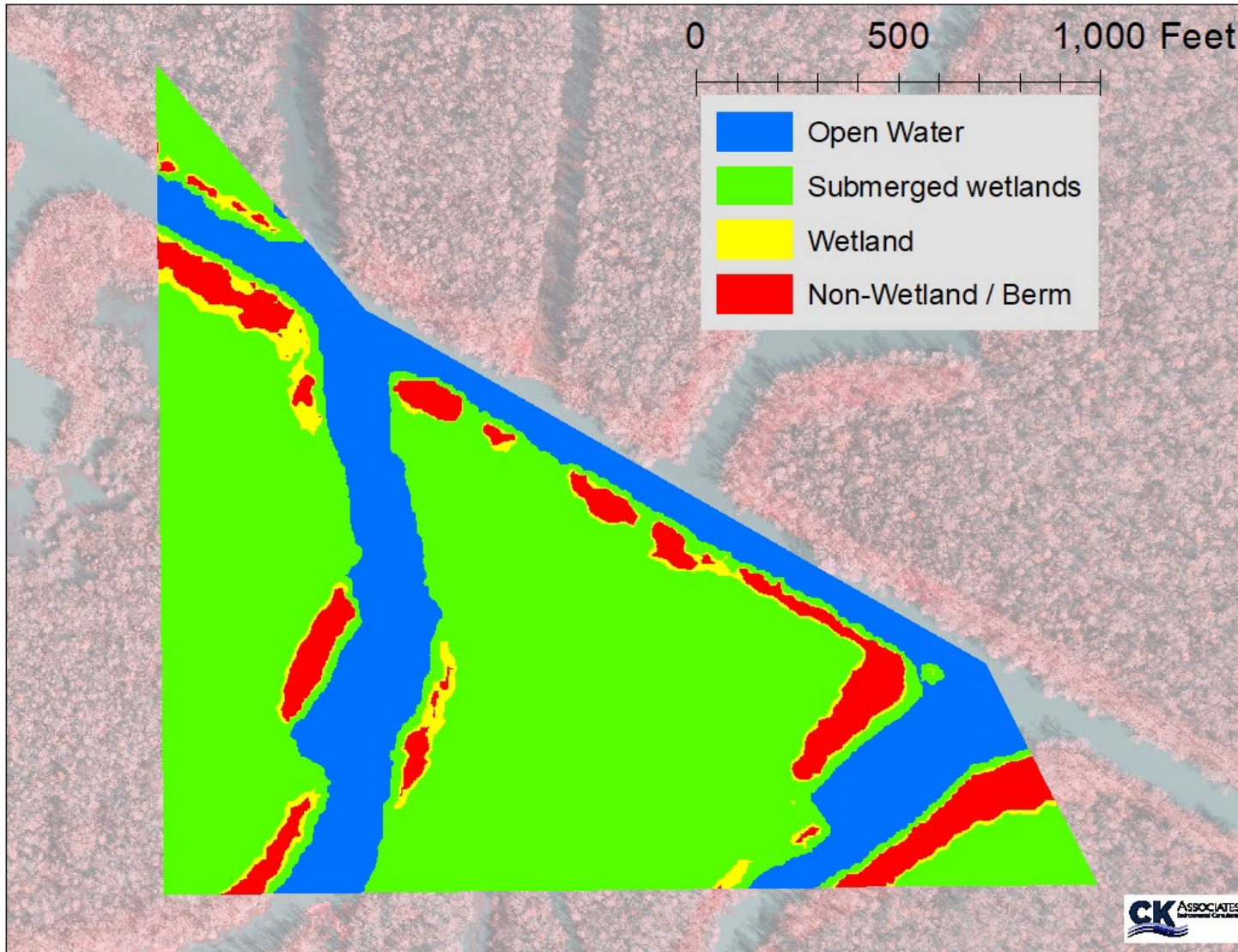
Figure 9. Wetland delineation.

Figure 10.   View perpendicular to the elevation gradient from upland (left and green) non-hydric soils, wetland hydrology indicators lacking, through transition wetland (yellow) with hydric soils but lacking O horizon (no muck) and Facultative wetland plants (*Quercus texana*, *Acer negundo*) to submerged wetland (red), soils with O horizon (muck), and Obligate wetland plants (*Phanopyrum gymnocarpon, Nyssa Aquatica, and Taxodium distichum*)

Figure 11. View perpendicular to elevation gradient in area with steeper gradient compared to Figure 8. Upland berm (right and green) non-hydric soils, wetland hydrology indicators lacking, through transition wetland (yellow) with hydric soils but lacking O horizon (no muck) and Facultative wetland plants (*Quercus texana, Acer negundo*) to submerged wetland (red), soils with O horizon (muck), and Obligate wetland plants (*Phanopyrum gymnocarpon,* and *Taxodium distichum*)
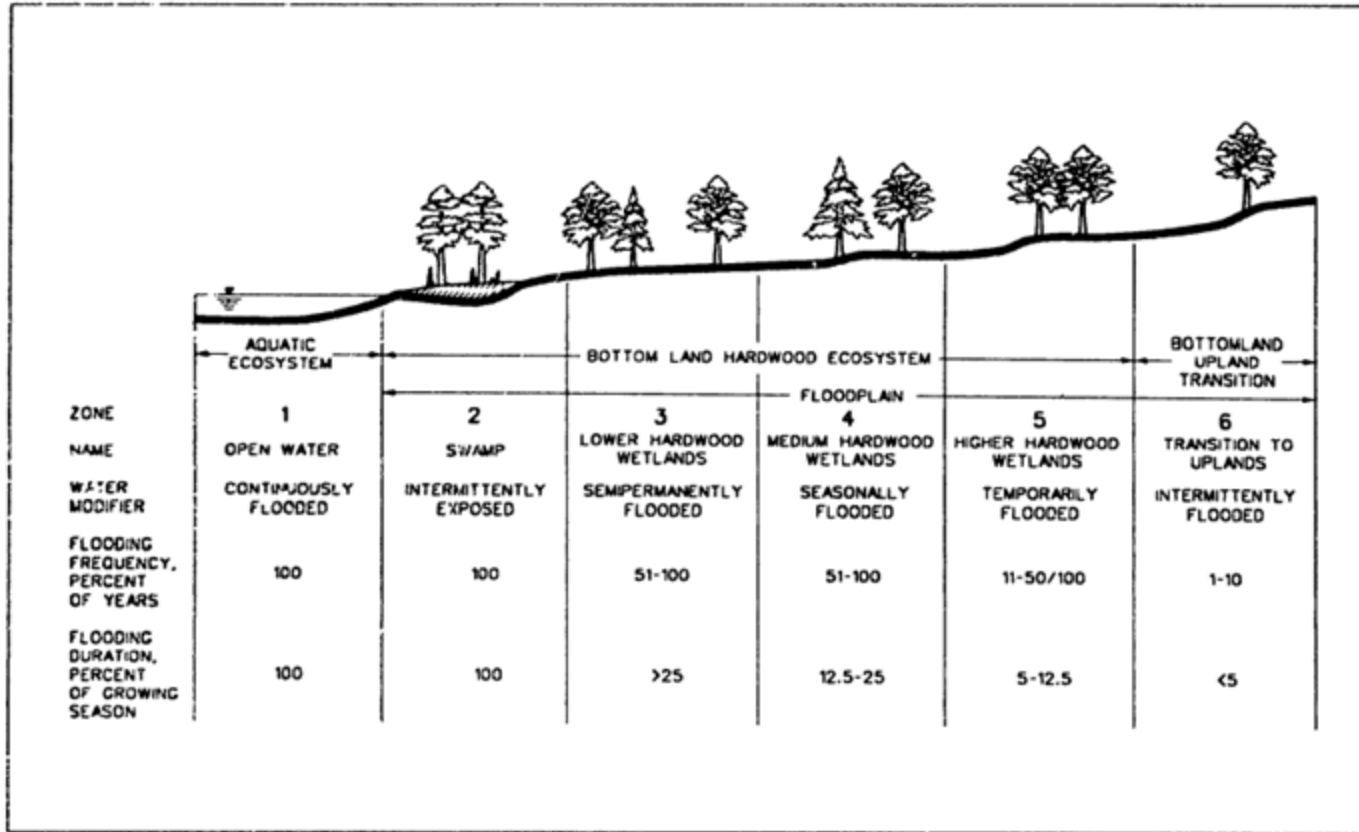
Figure 1   Zonal classification of bottomland forest wetlands (adapted from Clark and Benforado 1981)

Figure 12. Zonal classifications of bottom-land hardwood forests.

Figure 13. Zone II Swamp

Figure 14. Zone II

Figure 15. Zone II soil muck layer.

Figure 16. Zone II - Zone III transition. Elevation higher than Zone II - *Phanopyrum gymnocarpon* is indicator.

Figure 17. Zone II muck layer evident

Figure 18. Zone II – Zone III transition

Figure 19. Zone II – Zone III transition.

Figure 20 . Zone III Note the root flare is buried evidence of sediment deposition since tree sprouted.

Figure 21. Zone III soil – mucky clay surface layer

Figure 22. Zone IV

Figure 23. Zone IV soil mucky clay surface layer.

Figure 24. Zone V

Figure 25. Zone 5 soil – low organic surface layer but wetland indicators at depth.

Figure 26. Zone 5 to upland transition

Figure 27. Zone V to upland transition

Figure 28. Upland soil

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Environmental Litigation	Parish: Iberville		Sampling Date: August 8, 2022	
Applicant/Owner: Liskow Lewis for BP America Production Company	State: Louisiana	Data Point: DP1		
Investigator(s): Wade Bryant and Taylor Turner	Section, Township, Range: Section 15, Township 10 South, Range 11 East			
Landform (hillslope, terrace, etc.): depression	Local relief (concave, convex, none): concave	Slope (%): 0-1		
Subregion (LRR or MLRA): LRR O/MLRA 131A	Lat: 30.19573	Long: -91.34174	Datum: NAD83	
Soil Map Unit Name: DO: Dowling association, frequently flooded	NWI Classification: PFO1/2C			

Are climatic / hydrologic conditions on the site typical for this time of year?   (Yes / No)   Yes   (if no, explain in Remarks.)

Are Vegetation __No__, Soil __No__, or Hydrology __No__ significantly disturbed?   Are "Normal Circumstances" present?   Yes __X__ No ___

Are Vegetation __No__, Soil __No__, or Hydrology __No__ naturally problematic?   (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes __X__ No ___		
Hydric Soil Present?	Yes __X__ No ___	Is the Sampled Area	
Wetland Hydrology Present?	Yes __X__ No ___	within a Wetland? Yes __X__ No ___	

Remarks:

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

HYDROLOGY

Wetland hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ___ No __X__	Depth (inches): __N/A__	Wetland Hydrology Present? Yes __X__ No ___	
Water Table Present?	Yes __x__ No ___	Depth (inches): __3__		
Saturation Present?	Yes __X__ No ___	Depth (inches): __1__		

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

Remarks:

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

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR4/1	100					Clay	
2-8	10YR4/1	90	7.5YR5/8	10	C	M	Clay	
8-18	10YR5/1	80	7.5YR4/5	20	C	M	Clay	

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

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

___ Histosol (A1)	___ 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)**	___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
___ Hydrogen Sulfide (A4)	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
___ Stratified Layers (A5)	__x__ Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)
___ Organic Bodies (A6) **(LRR P, T, U)**	___ Redox Dark Surface (F6)	**(MLRA 153B)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**	___ 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)**	[3]Indicators of hydrophytic vegetation and wetland
___ Coast Prairie Redox (A16) **(MLRA 150A)**	___ Umbric Surface (F13) **(LRR P, T, U)**	hydrology must be present, unless disturbed or
___ Sandy Mucky Mineral (S1) **(LRR O, S)**	___ Delta Ochric (F17) **(MLRA 151)**	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)**		

Indicators for Problematic Hydric Soils[3]:

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____   **Hydric Soil Present?   Yes __X__ No ___**

Remarks:

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

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

	Absolute % cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *Acer negundo*	30	Yes	FAC
2. *Celtis laevigata*	15	Yes	FACW
3. *Quercus texana*	5	No	FACW
4.			
5.			
6.			
	50	= Total Cover	
50% of total cover: 25	20% of total cover: 10		
Sapling Stratum (Plot size: 30 ft.)			
1. *Acer negundo*	10	Yes	FAC
2. *Quercus texana*	5	Yes	FACW
3. *Triadica sebifera*	5	Yes	FAC
4.			
5.			
6.			
	20	= Total Cover	
50% of total cover: 10	20% of total cover: 4		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft.)			
1. *Toxicodendron radicans*	15	Yes	FAC
2. *Carex longii*	10	Yes	OBL
3. *Brunnichia ovata*	10	Yes	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	35	= Total Cover	
50% of total cover: 17.5	20% of total cover: 7		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *Toxicodendron radicans*	15	Yes	FAC
2. *Rubus argutus*	10	Yes	FAC
3.			
4.			
5.			
	25	= Total Cover	
50% of total cover: 12.5	20% of total cover: 5		

Dominance Test worksheet:

Number of Dominant Species
That Are OBL, FACW, or FAC: **10** (A)

Total Number of Dominant
Species Across All Strata: **10** (B)

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

Prevalence Index Worksheet:

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

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

Hydrophytic Vegetation Indicators:

_____ 1 - Rapid Test for Hydrophytic Vegetation

__X__ 2 - Dominance Test is >50%

_____ 3 - Prevalence Index is ≤ 3.0[1]

_____ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five Vegetation Strata:

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

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

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

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 2 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes __X__ No _____

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

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

DP1

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Environmental Litigation	Parish: Iberville	Sampling Date: August 8, 2022
Applicant/Owner: Liskow Lewis for BP America Production Company	State: Louisiana	Data Point: DP2
Investigator(s): Wade Bryant and Taylor Turner	Section, Township, Range: Section 15, Township 10 South, Range 11 East	
Landform (hillslope, terrace, etc.): depression	Local relief (concave, convex, none): concave	Slope (%): 0-1
Subregion (LRR or MLRA): LRR O/MLRA 131A	Lat: 30.19579 Long: -91.34175	Datum: NAD83
Soil Map Unit Name: DO: Dowling association, frequently flooded	NWI Classification: PFO1/2C	

Are climatic / hydrologic conditions on the site typical for this time of year?   (Yes / No)   Yes   (if no, explain in Remarks.)

Are Vegetation __No__, Soil __No__, or Hydrology __No__ significantly disturbed?   Are "Normal Circumstances" present?   Yes __X__ No _____

Are Vegetation __No__, Soil __No__, or Hydrology __No__ naturally problematic?   (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes __X__ No _____		
Hydric Soil Present?	Yes __X__ No _____	**Is the Sampled Area**	
Wetland Hydrology Present?	Yes __X__ No _____	**within a Wetland?**	Yes __X__ No _____

Remarks:

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

HYDROLOGY

Wetland hydrology Indicators:

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

Primary		Secondary Indicators (minimum of two required)
_____ Surface Water (A1)	__X__ Aquatic Fauna (B13)	_____ Surface Soil Cracks (B6)
_____ High Water Table (A2)	_____ Marl Deposits (B15) **(LRR U)**	_____ Sparsely Vegetated Concave Surface (B8)
_____ Saturation (A3)	_____ Hydrogen Sulfide Odor (C1)	_____ Drainage Patterns (B10)
__X__ Water Marks (B1)	_____ Oxidized Rhizospheres on Living Roots(C3)	_____ Moss Trim Lines (B16)
__X__ Sediment Deposits (B2)	_____ Presence of Reduced Iron (C4)	_____ Dry-Season Water Table (C2)
_____ Drift Deposits (B3)	_____ Recent Iron Reduction in Tilled Soils (C6)	_____ Crayfish Burrows (C8)
_____ Algal Mat or Crust (B4)	_____ Thin Muck Surface (C7)	_____ Saturation Visible on Aerial Imagery (C9)
_____ Iron Deposits (B5)	_____ Other (Explain in Remarks)	_____ Geomorphic Position (D2)
_____ Inundation Visible on Aerial Imagery (B7)		_____ Shallow Aquitard (D3)
__X__ Water-Stained Leaves (B9)		__X__ FAC-Neutral Test (D5)
		_____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____ No __X__	Depth (inches): __N/A__	**Wetland Hydrology Present?** Yes __X__ No _____
Water Table Present?	Yes __X__ No _____	Depth (inches): __6__	
Saturation Present?	Yes __X__ No _____	Depth (inches): __2__	

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

Remarks:

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

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR3/1	100					Clay	slighty mucky high organic
2-6	10YR5/1	80	7.5YR5/7	20	C	M	Clay	
6-22	10YR5/1	80	7.5YR4/5	20	C	M	Clay	

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

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

		Indicators for Problematic Hydric Soils[3]:
_____ 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)**	_____ Reduced Vertic (F18) **(outside MLRA 150A,B)**
_____ Hydrogen Sulfide (A4)	_____ Loamy Gleyed Matrix (F2)	_____ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
_____ Stratified Layers (A5)	_____ Depleted Matrix (F3)	_____ Anomalous Bright Loamy Soils (F20)
_____ Organic Bodies (A6) **(LRR P, T, U)**	_____ Redox Dark Surface (F6)	**(MLRA 153B)**
_____ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**	__X__ 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)**	[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
_____ Coast Prairie Redox (A16) **(MLRA 150A)**	_____ Umbric Surface (F13) **(LRR P, T, U)**	
_____ Sandy Mucky Mineral (S1) **(LRR O, S)**	_____ Delta Ochric (F17) **(MLRA 151)**	
_____ 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)**		

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____   **Hydric Soil Present?   Yes __X__ No _____**

Remarks:

No soil sample was collected due to pipeline right of way. Soil assumed non hydric based on data collected from USDA Web Soil Survey.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

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

Sampling Point: **DP2**

	Absolute % cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *Nyssa aquatica*	15	Yes	OBL
2. *Celtis laevigata*	10	Yes	FACW
3.			
4.			
5.			
6.			
	25	= Total Cover	
50% of total cover: 12.5	20% of total cover: 5		

	Absolute % cover	Dominant Species	Indicator Status
Sapling Stratum (Plot size: 30 ft.)			
1. *Acer negundo*	15	Yes	FAC
2. *Celtis laevigata*	5	No	FACW
3. *Acer rubrum*	5	No	FAC
4. *Triadica sebifera*	2	No	FAC
5.			
6.			
	27	= Total Cover	
50% of total cover: 13.5	20% of total cover: 5.4		

	Absolute % cover	Dominant Species	Indicator Status
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	
50% of total cover:	20% of total cover:		

	Absolute % cover	Dominant Species	Indicator Status
Herb Stratum (Plot size: 30 ft.)			
1. *Phanopyrum gymnocarpon*	51	Yes	OBL
2. *Rubus argutus*	5	No	FAC
3. *Ampelopsis arborea*	5	No	FAC
4. *Nyssa aquatica*	5	No	OBL
5. *Cirsium horridulum*	2	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	68	= Total Cover	
50% of total cover: 34	20% of total cover: 13.6		

	Absolute % cover	Dominant Species	Indicator Status
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
		= Total Cover	
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

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

Prevalence Index Worksheet:

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

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

Hydrophytic Vegetation Indicators:

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

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

Definitions of Five Vegetation Strata:

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

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

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

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 2 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present?

Yes **X**   No _____

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

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

DP2

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site:	Environmental Litigation	Parish:	Iberville	Sampling Date:	August 8, 2022
Applicant/Owner:	Liskow Lewis for BP America Production Company	State:	Louisiana	Data Point:	DP3
Investigator(s):	Wade Bryant and Taylor Turner	Section, Township, Range:	Section 15, Township 10 South, Range 11 East		
Landform (hillslope, terrace, etc.):	depression	Local relief (concave, convex, none):	concave	Slope (%):	0-1
Subregion (LRR or MLRA):	LRR O/MLRA 131A	Lat: 30.19643	Long: -91.34150	Datum:	NAD83
Soil Map Unit Name:	DO: Dowling association, frequently flooded		NWI Classification:	PFO1/2C	

Are climatic / hydrologic conditions on the site typical for this time of year?   (Yes / No)   __Yes__   (if no, explain in Remarks.)

Are Vegetation __No__ ,Soil __No__ ,or Hydrology __No__ significantly disturbed?   Are "Normal Circumstances" present?   Yes __X__ No ____

Are Vegetation __No__ ,Soil __No__ ,or Hydrology __No__ naturally problematic?   (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes __X__	No ____	
Hydric Soil Present?	Yes __X__	No ____	**Is the Sampled Area**
Wetland Hydrology Present?	Yes __X__	No ____	**within a Wetland?** Yes __X__ No ____

Remarks:

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

HYDROLOGY

Wetland hydrology Indicators:

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

			Secondary Indicators (minimum of two required)
____ Surface Water (A1)	____ Aquatic Fauna (B13)		____ Surface Soil Cracks (B6)
____ High Water Table (A2)	____ Marl Deposits (B15) **(LRR U)**		____ Sparsely Vegetated Concave Surface (B8)
____ Saturation (A3)	____ Hydrogen Sulfide Odor (C1)		____ Drainage Patterns (B10)
__X__ Water Marks (B1)	____ Oxidized Rhizospheres on Living Roots(C3)		____ Moss Trim Lines (B16)
____ Sediment Deposits (B2)	____ Presence of Reduced Iron (C4)		____ Dry-Season Water Table (C2)
____ Drift Deposits (B3)	____ Recent Iron Reduction in Tilled Soils (C6)		____ Crayfish Burrows (C8)
____ Algal Mat or Crust (B4)	__X__ Thin Muck Surface (C7)		____ Saturation Visible on Aerial Imagery (C9)
____ Iron Deposits (B5)	____ Other (Explain in Remarks)		____ Geomorphic Position (D2)
____ Inundation Visible on Aerial Imagery (B7)			____ Shallow Aquitard (D3)
__X__ Water-Stained Leaves (B9)			__X__ FAC-Neutral Test (D5)
			____ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No __X__	Depth (inches): __N/A__	**Wetland Hydrology Present?**	Yes __X__	No ____
Water Table Present?	Yes __X__	No ____	Depth (inches): __2__			
Saturation Present?	Yes __X__	No ____	Depth (inches): __0__			

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

Remarks:

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

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10YR3/1	100					Muck	saturated
1-6	10YR4/1	80	7.5YR5/6	20	C	M	Clay	high organics
6-20	10YR5/1	70	7.5YR4/5	30	C	M	Clay	

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

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

		Indicators for Problematic Hydric Soils[3]:
____ 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)**	____ Reduced Vertic (F18) **(outside MLRA 150A,B)**
____ Hydrogen Sulfide (A4)	____ Loamy Gleyed Matrix (F2)	____ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
____ Stratified Layers (A5)	__X__ Depleted Matrix (F3)	____ Anomalous Bright Loamy Soils (F20)
__X__ Organic Bodies (A6) **(LRR P, T, U)**	____ Redox Dark Surface (F6)	**(MLRA 153B)**
____ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**	____ 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)**	[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
____ Coast Prairie Redox (A16) **(MLRA 150A)**	____ Umbric Surface (F13) **(LRR P, T, U)**	
____ Sandy Mucky Mineral (S1) **(LRR O, S)**	____ Delta Ochric (F17) **(MLRA 151)**	
____ 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)**		

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____   **Hydric Soil Present?**   Yes __X__   No ____

Remarks:

No soil sample was collected due to pipeline right of way. Soil assumed non hydric based on data collected from USDA Web Soil Survey.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

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

Sampling Point: **DP3**

	Absolute % cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *Nyssa aquatica*	20	Yes	OBL
2. *Gleditsia triacanthos*	10	Yes	FAC
3. *Acer negundo*	5	No	FAC
4. *Acer rubrum*	5	No	FAC
5.			
6.			
	40	= Total Cover	
50% of total cover: 20	20% of total cover: 8		
Sapling Stratum (Plot size: 30 ft.)			
1. *Acer rubrum*	15	Yes	FAC
2. *Cornus drummondii*	10	Yes	FAC
3.			
4.			
5.			
6.			
	25	= Total Cover	
50% of total cover: 12.5	20% of total cover: 5		
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30 ft.)			
1. *Triadica sebifera*	5	Yes	FAC
2. *Brunnichia ovata*	5	Yes	FACW
3. *Phanopyrum gymnocarpon*	5	Yes	OBL
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	15	= Total Cover	
50% of total cover: 7.5	20% of total cover: 3		
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
		= Total Cover	
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: **7** (A)

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

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

Prevalence Index Worksheet:

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

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

Hydrophytic Vegetation Indicators:

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

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

Definitions of Five Vegetation Strata:

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

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

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

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 2 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes **X** No _____

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

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

DP3

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: Environmental Litigation	Parish: Iberville	Sampling Date: August 8, 2022	
Applicant/Owner: Liskow Lewis for BP America Production Company	State: Louisiana	Data Point: DP4	
Investigator(s): Wade Bryant and Taylor Turner	Section, Township, Range: Section 15, Township 10 South, Range 11 East		
Landform (hillslope, terrace, etc.): depression	Local relief (concave, convex, none): concave	Slope (%): 0-1	
Subregion (LRR or MLRA): LRR O/MLRA 131A	Lat: 30.19478	Long: -91.34223	Datum: NAD83
Soil Map Unit Name: DO: Dowling association, frequently flooded		NWI Classification: PFO1/2C	

Are climatic / hydrologic conditions on the site typical for this time of year?   (Yes / No)   Yes   (if no, explain in Remarks.)

Are Vegetation **No** ,Soil **No** ,or Hydrology **No** significantly disturbed?   Are "Normal Circumstances" present?   Yes **X** No

Are Vegetation **No** ,Soil **No** ,or Hydrology **No** naturally problematic?   (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes **X** No _____	
Hydric Soil Present?	Yes **X** No _____	**Is the Sampled Area**
Wetland Hydrology Present?	Yes **X** No _____	**within a Wetland?** Yes **X** No _____

Remarks:

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

HYDROLOGY

Wetland hydrology Indicators:

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

	Secondary Indicators (minimum of two required)
X Surface Water (A1) **X** Aquatic Fauna (B13)	Surface Soil Cracks (B6)
___ High Water Table (A2) ___ Marl Deposits (B15) **(LRR U)**	Sparsely Vegetated Concave Surface (B8)
___ Saturation (A3) ___ Hydrogen Sulfide Odor (C1)	Drainage Patterns (B10)
X Water Marks (B1) ___ Oxidized Rhizospheres on Living Roots(C3)	Moss Trim Lines (B16)
___ Sediment Deposits (B2) ___ Presence of Reduced Iron (C4)	Dry-Season Water Table (C2)
___ Drift Deposits (B3) ___ Recent Iron Reduction in Tilled Soils (C6)	Crayfish Burrows (C8)
___ Algal Mat or Crust (B4) ___ Thin Muck Surface (C7)	Saturation Visible on Aerial Imagery (C9)
___ Iron Deposits (B5) ___ Other (Explain in Remarks)	Geomorphic Position (D2)
___ Inundation Visible on Aerial Imagery (B7)	Shallow Aquitard (D3)
___ Water-Stained Leaves (B9)	**X** FAC-Neutral Test (D5)
	Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes **X** No ____	Depth (inches): **3**	**Wetland Hydrology Present?** Yes **X** No ____
Water Table Present?	Yes **x** No ____	Depth (inches):	
Saturation Present?	Yes **x** No ____	Depth (inches):	

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

Remarks:

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

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR3/1	100					Muck	
4-12	10YR6/1	80	7.5YR5/6	20	C	M	Clay	
6-20	10YR5/1	90	7.5YR6/6	10	C	M	Clay	

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

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

		Indicators for Problematic Hydric Soils[3]:
___ 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)**	___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
___ Hydrogen Sulfide (A4)	___ Loamy Gleyed Matrix (F2)	___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
___ Stratified Layers (A5)	**X** Depleted Matrix (F3)	___ Anomalous Bright Loamy Soils (F20)
___ Organic Bodies (A6) **(LRR P, T, U)**	___ Redox Dark Surface (F6)	**(MLRA 153B)**
___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**	___ 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)**	[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.
___ Coast Prairie Redox (A16) **(MLRA 150A)**	___ Umbric Surface (F13) **(LRR P, T, U)**	
___ Sandy Mucky Mineral (S1) **(LRR O, S)**	___ Delta Ochric (F17) **(MLRA 151)**	
___ 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)**		

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____   **Hydric Soil Present?   Yes **X** No ____**

Remarks:

No soil sample was collected due to pipeline right of way. Soil assumed non hydric based on data collected from USDA Web Soil Survey.

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

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

	Absolute % cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. *Taxodium distichum*	25	Yes	OBL
2. *Acer rubrum*	15	Yes	FAC
3. *Celtis laevigata*	5	No	FACW
4.			
5.			
6.			
	45	= Total Cover	
50% of total cover: 22.5	20% of total cover: 9		

	Absolute % cover	Dominant Species	Indicator Status
Sapling Stratum (Plot size: 30 ft.)			
1. *Acer rubrum*	5	Yes	FAC
2. *Nyssa aquatica*	5	Yes	OBL
3.			
4.			
5.			
6.			
	10	= Total Cover	
50% of total cover: 5	20% of total cover: 2		

	Absolute % cover	Dominant Species	Indicator Status
Shrub Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	
50% of total cover:	20% of total cover:		

	Absolute % cover	Dominant Species	Indicator Status
Herb Stratum (Plot size: 30 ft.)			
1. *Phanopyrum gymnocarpon*	70	Yes	OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70	= Total Cover	
50% of total cover: 35	20% of total cover: 14		

	Absolute % cover	Dominant Species	Indicator Status
Woody Vine Stratum (Plot size: 30 ft.)			
1. *None Observed*			
2.			
3.			
4.			
5.			
		= Total Cover	
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

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

Prevalence Index Worksheet:

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

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

Hydrophytic Vegetation Indicators:

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

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

Definitions of Five Vegetation Strata:

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

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

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

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 2 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes __X__ No _____

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

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

DP4

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

Project/Site: __Environmental Litigation__ Parish: __Iberville__ Sampling Date: __August 8, 2022__
Applicant/Owner: __Liskow Lewis for BP America Production Company__ State: __Louisiana__ Data Point: __DP5__
Investigator(s): __Wade Bryant__ and __Taylor Turner__ Section, Township, Range: __Section 15, Township 10 South, Range 11 East__
Landform (hillslope, terrace, etc.): __depression__ Local relief (concave, convex, none): __convex__ Slope (%): __0-1__
Subregion (LRR or MLRA): __LRR O/MLRA 131A__ Lat: __30.19905__ Long: __-91.34197__ Datum: __NAD83__
Soil Map Unit Name: __DO: Dowling association, frequently flooded__ NWI Classification: __PFO1/2C__
Are climatic / hydrologic conditions on the site typical for this time of year? (Yes / No) __Yes__ (if no, explain in Remarks.)
Are Vegetation __No__, Soil __No__, or Hydrology __No__ significantly disturbed? Are "Normal Circumstances" present? Yes __X__ No ____
Are Vegetation __No__, Soil __No__, or Hydrology __No__ naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present?	Yes __X__	No ____
Hydric Soil Present?	Yes ____	No __X__	Is the Sampled Area
Wetland Hydrology Present?	Yes ____	No __X__	within a Wetland? Yes ____ No __X__

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

HYDROLOGY

Wetland hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes ____ No __X__	Depth (inches): __N/A__	Wetland Hydrology Present? Yes ____ No __X__
Water Table Present?	Yes ____ No __X__	Depth (inches): __>20__	
Saturation Present?	Yes ____ No __X__	Depth (inches): __>20__	

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

Remarks:
No positive indication of wetland hydrology was observed.

SOIL

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR7/1	100						top of levee
2-17	10YR7/ 3	100						

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

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

____ Histosol (A1)	____ 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)**	____ Reduced Vertic (F18) **(outside MLRA 150A,B)**
____ Hydrogen Sulfide (A4)	____ Loamy Gleyed Matrix (F2)	____ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
____ Stratified Layers (A5)	____ Depleted Matrix (F3)	____ Anomalous Bright Loamy Soils (F20)
____ Organic Bodies (A6) **(LRR P, T, U)**	____ Redox Dark Surface (F6)	**(MLRA 153B)**
____ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**	____ 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)**	[3]Indicators of hydrophytic vegetation and wetland
____ Coast Prairie Redox (A16) **(MLRA 150A)**	____ Umbric Surface (F13) **(LRR P, T, U)**	hydrology must be present, unless disturbed or
____ Sandy Mucky Mineral (S1) **(LRR O, S)**	____ Delta Ochric (F17) **(MLRA 151)**	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)**		

Indicators for Problematic Hydric Soils[3]:

Restrictive Layer (if observed):
Type: ____
Depth (inches): ____ **Hydric Soil Present?** Yes ____ No __X__

Remarks:
No soil sample was collected due to pipeline right of way. Soil assumed non hydric based on data collected from USDA Web Soil Survey.

August Levert_BP Plan_002061

WETLAND DETERMINATION DATA FORM - Atlantic and Gulf Coastal Plain Region

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

	Absolute % cover	Dominant Species	Indicator Status
Tree Stratum (Plot size: 30 ft.)			
1. Quercus nigra	20	Yes	FAC
2. Acer rubrum	10	Yes	FAC
3.			
4.			
5.			
6.			
	30	= Total Cover	
50% of total cover: 15	20% of total cover: 6		

	Absolute % cover	Dominant Species	Indicator Status
Sapling Stratum (Plot size: 30 ft.)			
1. Quercus nigra	15	Yes	FAC
2. Cornus drummondii	5	Yes	FAC
3. Triadica sebifera	5	Yes	FAC
4.			
5.			
6.			
	25	= Total Cover	
50% of total cover: 12.5	20% of total cover: 5		

	Absolute % cover	Dominant Species	Indicator Status
Shrub Stratum (Plot size: 30 ft.)			
1. None Observed			
2.			
3.			
4.			
5.			
6.			
		= Total Cover	
50% of total cover:	20% of total cover:		

	Absolute % cover	Dominant Species	Indicator Status
Herb Stratum (Plot size: 30 ft.)			
1. Quercus nigra	10	Yes	FAC
2. Campsis radicans	5	Yes	FAC
3. Brunnichia ovata	5	Yes	FACW
4. Toxicodendron radicans	2	No	FAC
5. Diospyros virginiana	2	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
	24	= Total Cover	
50% of total cover: 12	20% of total cover: 4.8		

	Absolute % cover	Dominant Species	Indicator Status
Woody Vine Stratum (Plot size: 30 ft.)			
1. None Observed			
2.			
3.			
4.			
5.			
		= Total Cover	
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species
That Are OBL, FACW, or FAC: **8** (A)

Total Number of Dominant
Species Across All Strata: **8** (B)

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

Prevalence Index Worksheet:

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

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

Hydrophytic Vegetation Indicators:

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

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

Definitions of Five Vegetation Strata:

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

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

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

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 2 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes __X__ No _____

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

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

DP5