WETLANDS INVESTIGATION REPORT

I-20 South Tract
Highway 594 and Interstate 20
Ouachita Parish, Louisiana

Prepared for

Harrod and Harrod
Monroe, Louisiana

Prepared by
McAbee Wetland Services
655 Meadowbrook Road
Jackson, MS 39206

December 5, 2012

INTRODUCTION

A formal investigation for wetlands and O*ther Waters of the U.S.* was conducted for an approximately 232 acre tract of farmland located southwest of the intersection of I-20 Highway 594 (Exhibits 1, 2 and 3). The investigator was Mr. Bill McAbee with McAbee Wetland Services, and the site was investigated on November 30, 2012. Methodology of the investigation followed guidelines set forth in the 1987 COE Wetland Delineation Manual and the Regional Supplement Manual for the Atlantic and Gulf Coastal Plain Region.

BACKGROUND

The subject property is almost 100% homogeneous bottomland hardwood forest. Part of the Russell Sage Wildlife Management Area is located less than one-quarter mile to the east of the southeastern corner of the subject property. A Waste Management facility was located adjacent and south of the subject property. Bennett Bayou crosses through the site beginning at the southwest corner heading east and then turning north dissecting the subject property as it continues north under I-20 (Exhibits 4 and 5). Bennett Bayou has been channelized and straightened along most of its length through the subject property with spoil located on both sides of the channel. The spoil ranges from approximately 10-15 feet above the bank top and from 30-40 feet wide.

According to the USDA Quadrangle mapping there was a remnant of Gourd Bayou along a small section of the very southern section of the subject property. This remnant channel was most likely significantly impacted by the activities on the adjacent landfill which borders the subject property to the south. There were two ponds located on the north portion of the property that were created from borrow areas during the construction of I-20 (Exhibits 6 and 7).

Improvements on the subject property included a gravel road that leads from Highway 594 to the easternmost pond. Adjacent to the larger pond, at the end of the gravel road, there was a historic fill area that may have been associated with a former oil or gas well facility (Exhibit 8). There was and overhead transmission line row and a gas pipeline row located along the far west side of the property (Exhibit 9 and 10). Both of these utilities run north and south across the entire site. There are abandoned dirt roads throughout the subject property that were apparently used as hunting access roads; most of which are not passable by anything other than an ATV.

The forest was fairly homogeneous due to the flat topography (Exhibits 11 and 12). The dominant canopy species were water oak (*Quercus nigra*), willow oak (*Q. phellos*), delta post oak (*Q. stellata*), cherry bark oak (*Q. pagoda*), green ash (*Fraxinus pennsylvanica*), hackberry (*Celtis laevigata*), water hickory (*Carya aquatic*), and cedar elm (*Ulmus crassifolia*) and winged elm (*Ulmus alata*). Midstory and herbaceous species were minimal due to the dense canopy with the exception of dwarf palmetto (*Sabal minor*).

The natural gas pipeline ROW is regularly maintained with only short grasses and it is apparently used as a property access road at times. The overhead power transmission line ROW is more overgrown but still maintained either annually or semi-annually with no woody vegetation noted, other than some small sapling black willows (*Salix nigra*).

The Ouachita Soil Survey indicates that the soils on the site were 92% Perry Clay, occasionally flooded (Exhibit 13). The Perry Clay, occasionally flooded soils are considered a hydric soil.

A review of the USFWS National Wetland Inventory mapping showed most of the tract as Palustrine Forested, broad-leaved deciduous vegetation, temporarily flooded (PFOIA, Exhibit 14).

FINDINGS

Wetlands: Based on the site reconnaissance, and a review of CIR photography, historical aerial photography, USFWS National Wetland Inventory mapping, the USDA Soil Survey for Ouachita Parish, and 7.5 minute topographic quadrangle maps, and a site visit, most of the subject property is forested wetlands. Positive hydrological conditions, vegetation and hydric soil characteristics were clear and distinct throughout the site.

Any impact, permanent or temporary, in a wetland must be permitted through the US Army Corps of Engineers.

Uplands: The areas of exception were the borrow area from dredging of Bennett Bayou, the developed road and abandoned oil/gas site pad. The uplands were noted as such due to historic fill material and continued maintenance. A representative data sheet was prepared for the borrow area uplands adjacent to Bayou Bennett, however the roads and abandoned pad site were considered disturbed and data sheets were not completed since there was rock/gravel fill and no vegetation.

Gravel access road = 0.84 acres
Gas well pad site = 0.62 acres
Borrow from Bayou Bennett = 5.5 acres

Total Uplands = 6.96 acres

Other Waters of the US: Bayou Bennett is a manipulated perennial stream which extends through the property for approximately 4,029 feet. The nearest Navigable Waterway is Bayou Lafourche which is approximately 5.8 river miles away and 3.8 aerial miles away. The average high water mark was three feet and the average width at the ordinary high water mark was approximately 30 feet. The bank slopes were typically 3:1 or greater with defined bed and bank. At the time of the visit the water was below the ordinary high water mark and there was no flow noted. The bottom was consolidated silt with riffles and pools created by debris and scouring. There was little vegetation.

There were two ponds noted on the site. These ponds were created back in the 1960s from borrow used to build Interstate 20. The banks are 3:1 or greater with little or no emergent or submergent wetland fringe. The eastern pond was 6.4 acres in size and the western pond was 4.0 acres in size.

Other Waters of the US are regulated by the US Army Corps of Engineers and a permit must be acquired before impacting Bennett Bayou or either of the ponds.

Exhibit 15 shows the wetlands, uplands, and "other waters" located within the subject property limits. Wetland Data Forms are located in the Appendix.

Sincerely,

William C. "Bill" McAbee
McAbee Wetland Services
655 Meadowbrook Road

Jackson, MS 39206
wmcabee@mbakercorp.com
601.842.8938

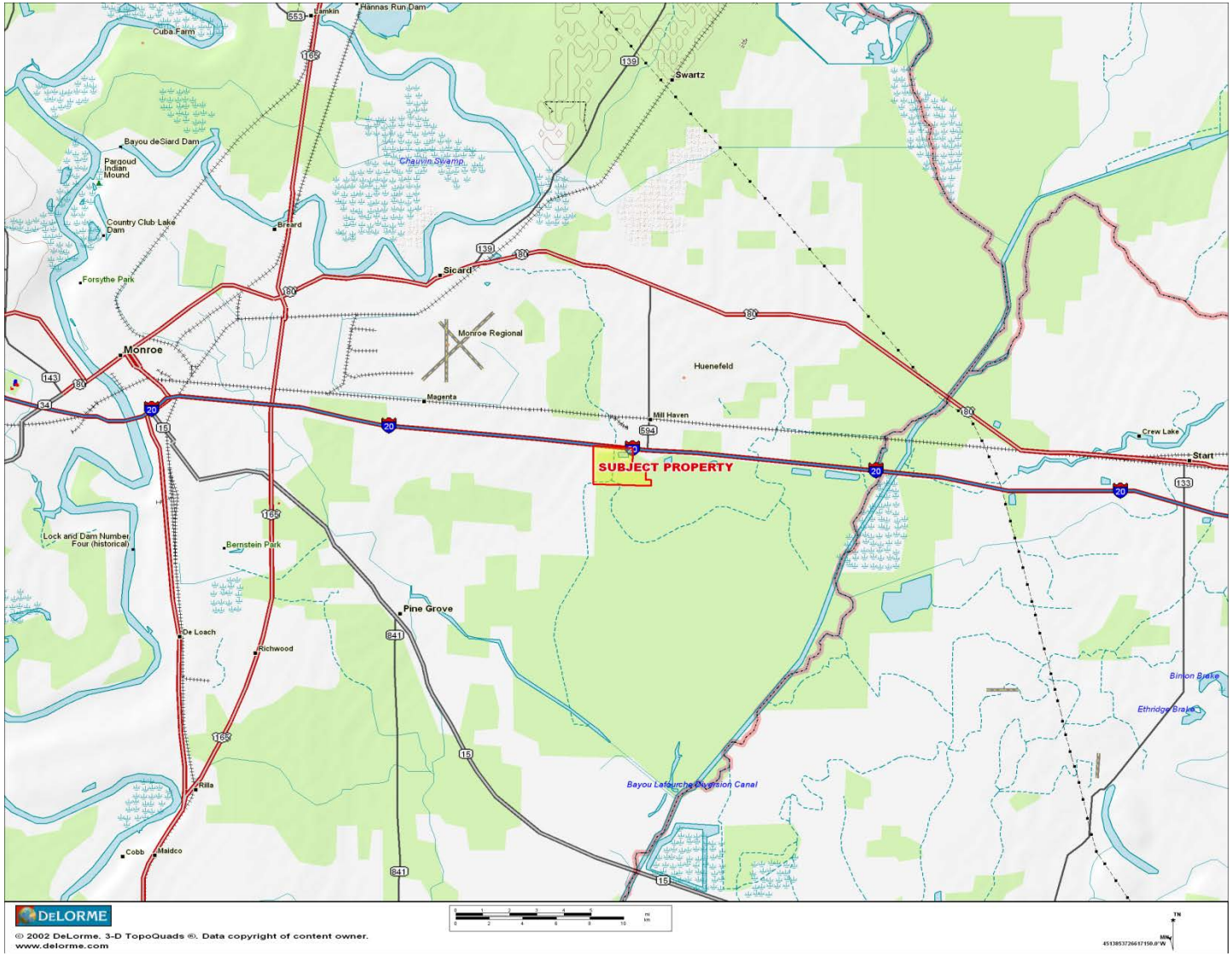

EXHIBIT 1. GENERAL LOCATION MAP

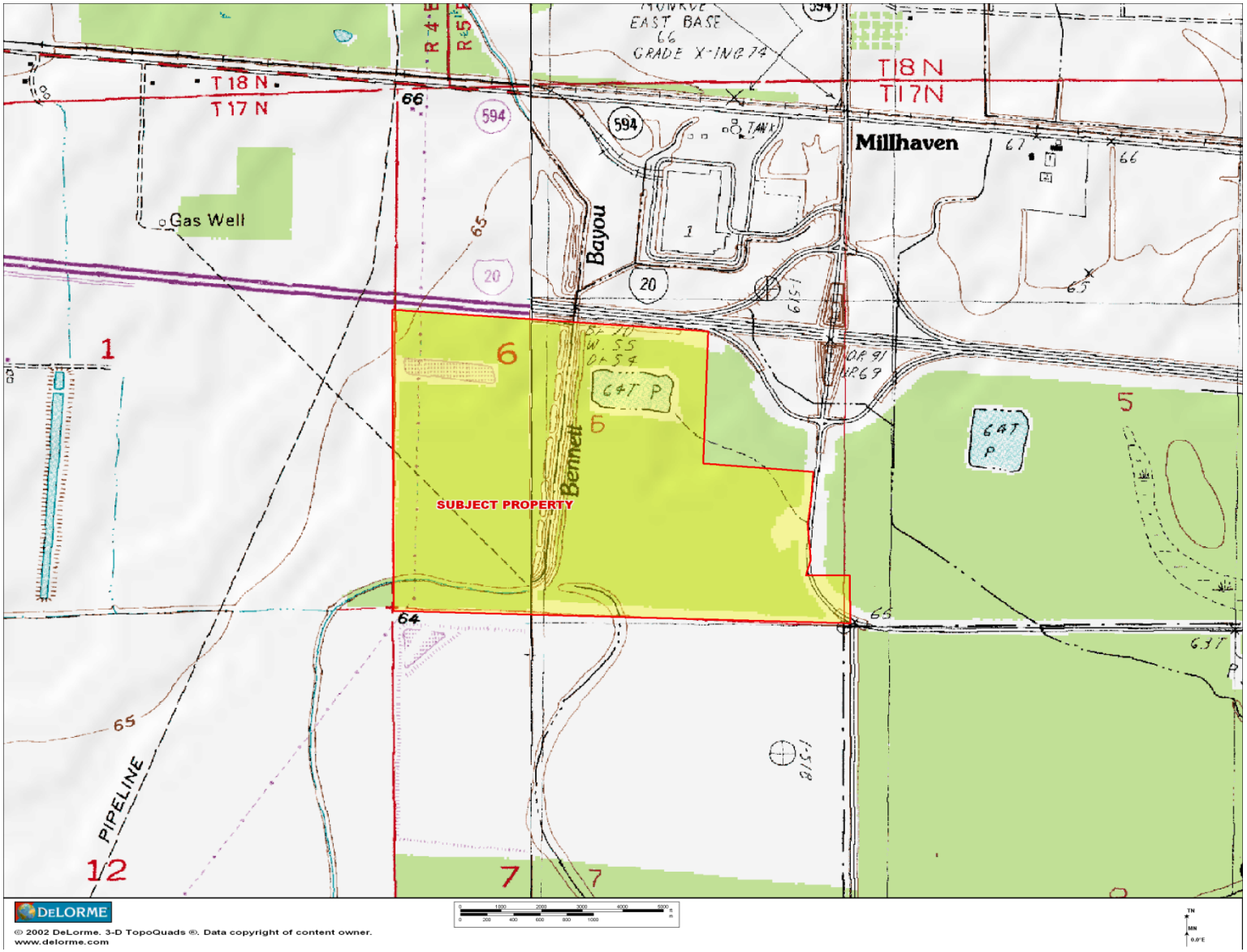

EXHIBIT 2. SITE LOCATION MAP

EXHIBIT 3. SUBJECT PROPERTY ON GOOGLE EARTH (2009 IMAGERY)

EXHIBIT 4. BENNETT BAYOU SOUTHWEST CORNER

EXHIBIT 5. BENNETT BAYOU NORTH NEAR I-20

EXHIBIT 6. EASTERN POND

EXHIBIT 7. WESTERN POND.

EXHIBIT 8. OLD GAS/OIL WELL SITE

EXHIBIT 9. POWERLINE TRANSMISSION ROW.

EXHIBIT 10. NATURAL GAS PIPELINE ROW

EXHIBIT 11. BOTTOMLAND HARDWOOD FOREST

EXHIBIT 12. BOTTOMLAND HARDWOOD FOREST

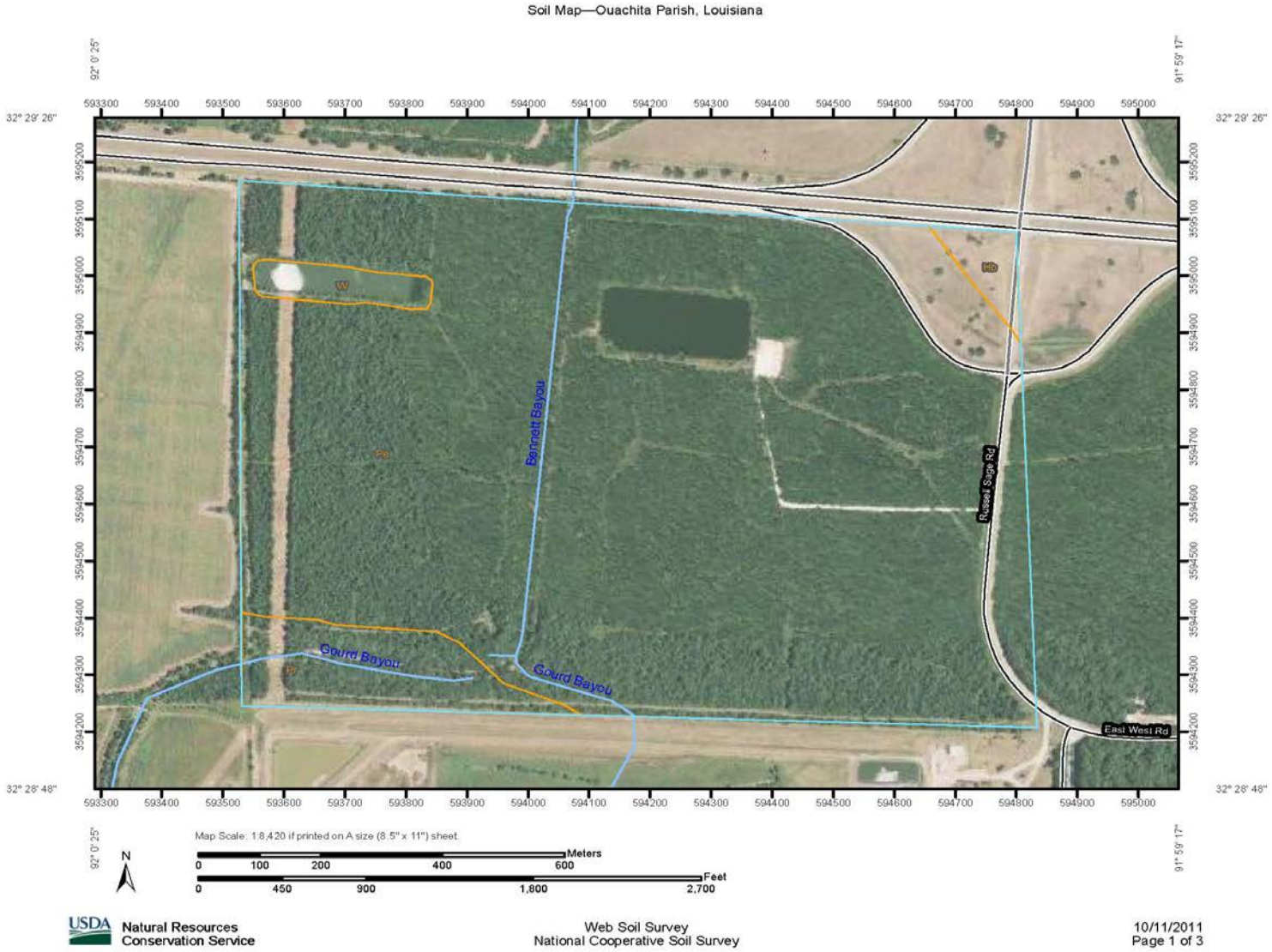

EXHIBIT 13. 1 SOIL SURVEY MAP

Map Unit Legend

Ouachita Parish, Louisiana (LA073)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Hb	Hebert silt loam	3.4	1.2%
Pe	Perry clay, occasionally flooded	261.3	91.8%
Pr	Portland clay	15.4	5.4%
W	Water	4.4	1.5%
Totals for Area of Interest		**284.6**	**100.0%**

EXHIBIT 13. 2 SOIL SURVEY MAP

EXHIBIT 14. USFWS NATIONAL WETLAND INVENTORY MAP

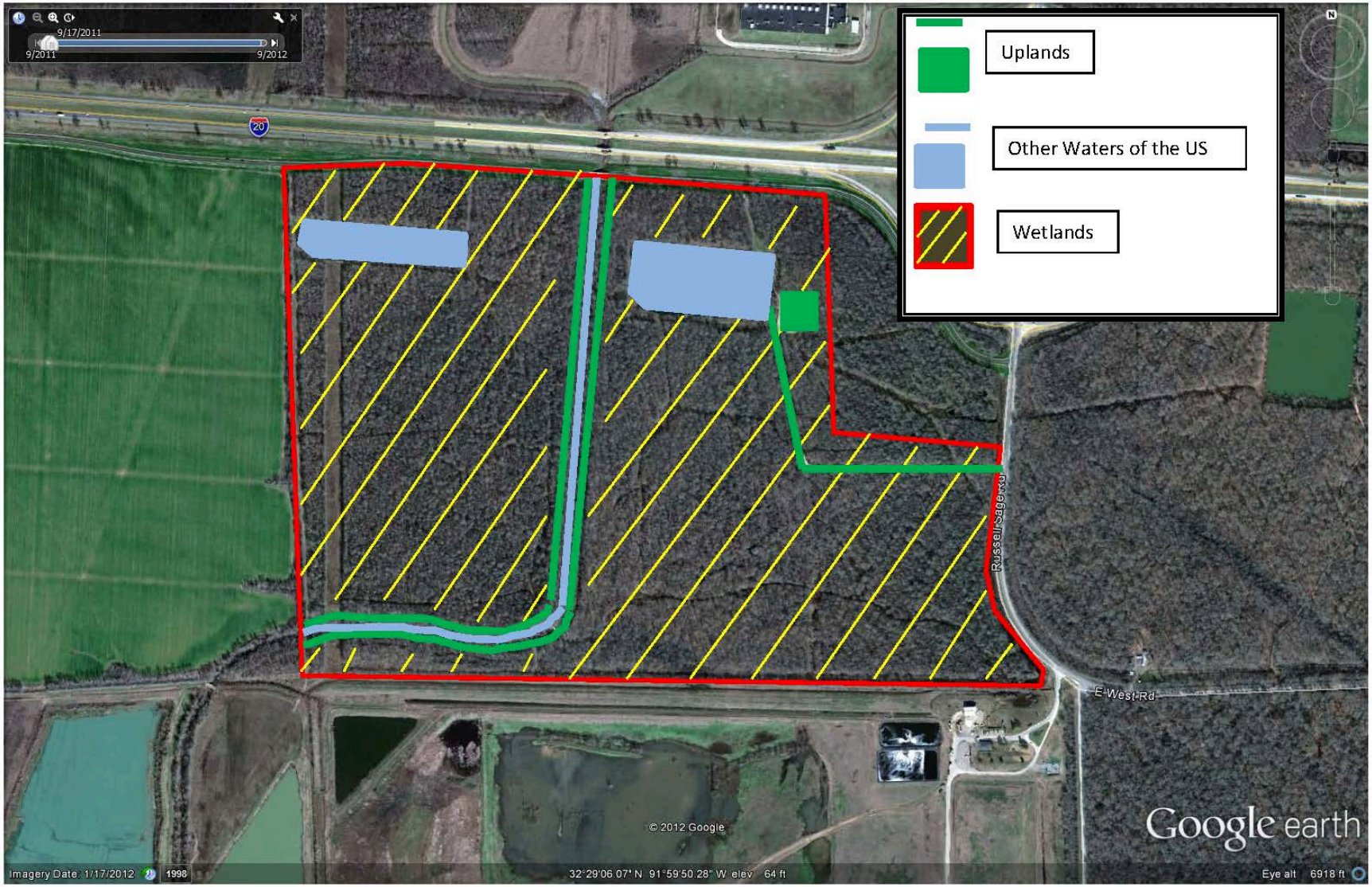

EXHIBIT 15. WETLANDS MAP

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: I-20 South City/County: Ouachita Sampling Date: 11/30/2012

Applicant/Owner: Harrod and Harrod, LLC State: LA Sampling Point: Wetland #1

Investigator(s): Mr. Bill McAbee Section, Township, Range: T17N R5E S6

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0-2

Subregion (LRR or MLRA): _____ Lat: N 32 29' 07.41" Long: W 92 00' 04.85" Datum: WGS84

Soil Map Unit Name: Perry Clay Occasionally Flooded NWI classification: PFO

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

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

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

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes ✓ No _____ Depth (inches): 8"

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

VEGETATION – Use scientific names of plants.

Sampling Point: Wetland #1

Tree Stratum (Plot sizes: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Quercus phellos	25	yes	FACW
2. Quercus nigra	20	yes	FAC
3. Gleditsia triacanthos	20	yes	FAC
4. Celtis laevigata	20	yes	FAC
5. Ulmus crassifolia	15	no	FAC
6.			
7.			
	100	= Total Cover	
Sapling Stratum (30x30)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum (30x30)			
1. Sabal Minor	15	yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	15	= Total Cover	
Herb Stratum ( )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	0	= Total Cover	
Woody Vine Stratum ( )			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Definitions of Vegetation Strata:

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

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

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. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

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

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

SOIL

Sampling Point: Wetland #1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 4/2	90	10YR 4/5	10	C	M	silty clay	Some dark organic in top inch
8-16	10YR 5/2	80	7.5YR 5/6	20	C	M	clay	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12) (LRR T, U)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: I-20 South City/County: Ouachita Sampling Date: 11/30/2012

Applicant/Owner: Harrod and Harrod, LLC State: LA Sampling Point: Upland #1

Investigator(s): Mr. Bill McAbee Section, Township, Range: T17N R5E S6

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0-2

Subregion (LRR or MLRA): _____ Lat: N 32 29' 13.29" Long: W 91 59' 56.97" Datum: WGS84

Soil Map Unit Name: _____ NWI classification: upland forest

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

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

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

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

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

Remarks:

this upland feature was created from spoil resulting from dredging of Bennett Bayou. Based on review of historical photography and age of trees growing on the spoil bank, this would be considered normal circumstances.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

the high point on the bank ranges from 10-15 feet above the adjacent elevation.

VEGETATION – Use scientific names of plants.

Sampling Point: Upland #1

Tree Stratum (Plot sizes: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Celtis laevigata	50	yes	FAC
2. Gleditsia triacanthos	20	yes	FAC
3. Ulmus crassifolia	20	yes	FAC
4.			
5.			
6.			
7.			
	90	= Total Cover	
Sapling Stratum ( )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Shrub Stratum ( )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum ( )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		
Woody Vine Stratum ( )			
1.			
2.			
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4.			
5.			
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

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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. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

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

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

SOIL

Sampling Point: Upland #1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 5/3	100			C	M	loamy sil	
8-16	10YR 5/6	80	7.5YR 5/6	20	C	M	loamy cl	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12) (LRR T, U)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: I-20 South City/County: Ouachita Sampling Date: 11/30/2012

Applicant/Owner: Harrod and Harrod, LLC State: LA Sampling Point: Upland #2

Investigator(s): Mr. Bill McAbee Section, Township, Range: T17N R5E S6

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): none Slope (%): 0-2

Subregion (LRR or MLRA): _____ Lat: N 32 29' 13.06" Long: W 91 59' 42.55" Datum: WGS84

Soil Map Unit Name: _____ NWI classification: upland disturbed

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

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

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

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

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

Remarks:

This is apparently an old gas/oil well pad site that has been cleared and cleaned. Substantial gravel/sand and debris still exist in the top 18 of the soil profile. The disturbed area is elevated a few feet above the surrounding property.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No ✓ Depth (inches): _____

Water Table Present? Yes _____ No ✓ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes _____ No ✓ Depth (inches): _____

Wetland Hydrology Present? Yes _____ No ✓

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

Remarks:

There was some indicators of recent standing water in small depressed sites on the old pad site, but not substantial or indicative of wetland habitat.

VEGETATION – Use scientific names of plants.

Sampling Point: Upland #2

Tree Stratum (Plot sizes: 30x30)	Absolute % Cover	Dominant Species?	Indicator Status
1. sorghum halepense	80	yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
	80	= Total Cover	
Sapling Stratum ( )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Shrub Stratum ( )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
		= Total Cover	
Herb Stratum ( )			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
		= Total Cover	
Woody Vine Stratum ( )			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

Dominance Test worksheet:

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

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

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

Prevalence Index worksheet:

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

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

___ Dominance Test is >50%

___ Prevalence Index is ≤3.0[1]

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present.

Definitions of Vegetation Strata:

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

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

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. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

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

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

Johnson grass was the dominant plant but vegetation was recently disturbed as well as historically disturbed by oil/gas activities.

SOIL

Sampling Point: Upland #2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
							gravel	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Organic Bodies (A6) **(LRR P, T, U)**
- ___ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ___ Muck Presence (A8) **(LRR U)**
- ___ 1 cm Muck (A9) **(LRR P, T)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Coast Prairie Redox (A16) **(MLRA 150A)**
- ___ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) **(LRR P, S, T, U)**
- ___ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ___ Thin Dark Surface (S9) **(LRR S, T, U)**
- ___ Loamy Mucky Mineral (F1) **(LRR O)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Marl (F10) **(LRR U)**
- ___ Depleted Ochric (F11) **(MLRA 151)**
- ___ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ___ Umbric Surface (F13) **(LRR P, T, U)**
- ___ Delta Ochric (F17) **(MLRA 151)**
- ___ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ___ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12) (LRR T, U)
- ___ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

soils were dominated by gravel/sand/silt soils that were part of original and subsequent fill materials for the histoic oil/gas pad site.