JOINT PUBLIC NOTICE

July 1, 2019

United States Army Corps of Engineers New Orleans District Regulatory Branch 7400 Leake Ave. New Orleans, La. 70118

(504) 862-1280/ FAX (504) 862-2289 Brandon.D.Gaspard@usace.army.mil Project Manager Brandon Gaspard Permit Application Number MVN-2017-00369-MG State of Louisiana Department of Environmental Quality Post Office Box 4313 Baton Rouge, La. 70821-4313 Attn: Water Quality Certifications

(225) 219-3225 FAX (225) 325-8250 Elizabeth.Hill@la.gov Project Manager Elizabeth Hill WQC Application Number WQC # 190627-02

Interested parties are hereby notified that a prospectus and permit application have been received by the New Orleans District of the U.S. Army Corps of Engineers pursuant to: [] Section 10 of the Rivers and Harbors Act of March 3, 1899 (30 Stat. 1151; 33 USC 403); and/or [X] Section 404 of the Clean Water Act (86 Stat. 816; 33 USC 1344).

Application has also been made to the Louisiana Department of Environmental Quality, for a Water Quality Certification (WQC) in accordance with statutory authority contained in Louisiana Revised Statutes of 1950, Title 30, Chapter 11, Part IV, Section 2074 A(3) and provisions of Section 401 of the Clean Water Act (P.L.95-17).

MERMENTAU MITIGATION BANK IN ACADIA PARISH

NAME OF APPLICANT: SEG Environmental L.L.C., obo Mermentau Mitigation Group, L.L.C.; Attn: Paul Chadwick; 224 Rue De Jean, Lafayette, Louisiana 70503.

LOCATION OF WORK: The 524 acre site is located approximately 2 miles south of Mermentau, in Sections 21, 22, 23, 24. 25, 52, 61, 62, and 64, Township 10 South, Range 02 West, Acadia Parish Louisiana, as shown on attached drawings.

Center of Location: Latitude: 30.1593° N, Longitude: 92.5978° W. Hydrologic Unit Code: 08080202 – Mermentau.

<u>CHARACTER OF WORK</u>: Mermentau Mitigation Group L.L.C. is proposing the removal of agricultural levees, filling of a man-made drainage conveyances, and planting of desirable wetland vegetation for the establishment of Mermentau Mitigation Bank. Of the 524 acres proposed for Marsh Bayou Mitigation Bank, 85.7 acres are bottomland hardwood rehabilitation, 49.9 acres are bottomland hardwood enhancement, 16.8 acres are bottomland hardwood preservation, 281.9 acres are coastal prairie rehabilitation, 39.7 acres are cypress swamp enhancement, 8.4 acres are cypress swamp preservation, and 20.7 are upland buffer.

The comment period for the Department of the Army Permit and the Louisiana Department of Environmental Quality WQC will close <u>30 days</u> from the date of this joint public notice. Written comments, including suggestions for modifications or objections to the proposed work, stating reasons thereof, are being solicited from anyone having interest in this permit and/or this WQC

request and must be mailed so as to be received before or by the last day of the comment period. Letters concerning the Corps of Engineers permit application must reference the applicant's name and the Permit Application Number, and be mailed to the Corps of Engineers at the address above, <u>ATTENTION: REGULATORY BRANCH</u>. Similar letters concerning the Water Quality Certification must reference the applicant's name and the WQC Application number and be mailed to the Louisiana Department of Environmental Quality at the address above.

The application for this proposed project is on file with the Louisiana Department of Environmental Quality and may be examined during weekdays between 8:00 a.m. and 4:30 p.m. Copies may be obtained upon payment of costs of reproduction.

Corps of Engineers Permit Criteria

The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and, in general, the needs and welfare of the people.

The U.S. Army Corps of Engineers is soliciting comments from the public, federal, state, and local agencies and officials, Indian Tribes, and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the U.S. Army Corps of Engineers to determine whether to make, modify, condition, or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

The New Orleans District is unaware of properties listed on the National Register of Historic Places near the proposed work. The possibility exists that the proposed work may damage or destroy presently unknown archeological, scientific, prehistorical, historical sites, or data. Issuance of this public notice solicits input from the State Archeologist and State Historic Preservation Officer regarding potential impacts to cultural resources. After receipt of comments from this public notice the Corps will evaluate potential impacts and consult with the State Historic Preservation Officer and Native American Tribes in accordance with Section 106 of the national Historic Preservation Act, as appropriate.

Our initial finding is that the proposed work would neither affect any species listed as endangered, nor affect any habitat designated as critical to the survival and recovery of any endangered species listed by the U.S. Department of Commerce. Based on the South Louisiana Standard Local Operating Procedure for Endangered Species in Louisiana (SLOPES), dated October 22, 2014, between the U.S. Army Corps of Engineers, New Orleans District and U.S. Fish and Wildlife Service, Ecological Services Office, the Corps has determined that the proposed activity would have no effect on any species listed as endangered by the U.S. Department of the Interior.

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. The applicant's proposal would result in the destruction or alteration of <u>N/A</u> acre(s) of EFH utilized by various life stages of red drum and penaeid shrimp. Our initial determination is that the proposed action would not have a substantial adverse impact on EFH or federally managed fisheries in the Gulf of Mexico. Our final determination relative to project impacts and the need for mitigation measures is subject to review by and coordination with the National Marine Fisheries Service.

If the proposed work involves deposits of dredged or fill material into navigable waters, the evaluation of the probable impacts will include the application of guidelines established by the Administrator of the Environmental Protection Agency. Also, a certification that the proposed activity will not violate applicable water quality standards will be required from the Department of Environmental Quality, before a permit is issued.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing.

You are requested to communicate the information contained in this notice to any other parties whom you deem likely to have interested in the matter.

for Martin S. Mayer Chief, Regulatory Branch

Enclosure

Prospectus for the Mermentau Mitigation Bank (MVN-2017-00369-MG)

Acadia, Louisiana

January 2018

- Sponsor: Mermentau Mitigation Bank, L.L.C. Mary Anne Champney 1433 Hideaway Ct. Baton Rouge, LA 70806
- Agent: SEG Environmental LLC.

Name: Paul Chadwick Address: 224 Rue De Jean Lafayette Louisiana, 70503

Table of Contents

1.	IN	ITROD	UCTION
	1.1	SITE L	OCATION
2.	P	ROJEC	T GOALS AND OBJECTIVES
3.	E	COLOG	SICAL SUITABILITY OF THE SITE/BASELINE CONDITIONS2
	3.1	Land	Use
	3.	1.1	Historical Land Use
	3.	1.2	Existing/Current Land Use
	3.2	Soils	
	3.3	Hydro	OLOGY
	3.	3.1	Contributing Watershed 4
	3.	3.2	Historical Hydrology and Drainage Patterns
	3.	3.3	Existing/Current Hydrology and Drainage Patterns 4
	3.	3.4	Jurisdictional Wetlands
	3.4	VEGET	ration
	3.	4.1	Historical Plant Community
	3.	4.2	Existing Plant Community
	3.5	Genei	ral Need for the Project in this Area
4.	E	STABLI	SHMENT OF A MITIGATION BANK14
	4.1	SITE R	RESTORATION PLAN
	4.	1.1	Soils/Hydrologic Work
	4.	1.2	Vegetative Work
	4.2	TECHN	NICAL FEASIBILITY
	4.3	CURR	емт Site Risks 18
	4.4	LONG	-Term Sustainability of the Site
5.	P	ROPOS	SED SERVICE AREA
6.	0	PERAT	ION OF THE MITIGATION BANK19
	6.1	Proje	CT REPRESENTATIVES
	6.2	QUAL	IFICATIONS OF THE SPONSOR
	6.3	PROP	OSED LONG-TERM OWNERSHIP AND MANAGEMENT REPRESENTATIVES
	6.4	SITE P	PROTECTION
	6.5	Long	-Term Strategy
7.	R	EFERE	NCES

TABLES

 Table 1
 Species Composition and Planting Percentage Breakdown

FIGURES

- Figure 1 Vicinity Map
- Figure 2 Land Use Map
- Figure 3 NRCS Soils
- Figure 4 Hydrologic Catalog Unit/ Contributing Watershed
- Figure 5 Historical Drainage Patterns
- Figure 6 Current Hydrology

- Figure 7 Existing Plant Community
- Figure 8 Habitat Restoration Plan

APPENDICES

- Appendix A Historical Imagery and Topographic Map
- Appendix B CEMVN Jurisdictional Determination
- Appendix C Restoration Plan View (Permit Plats)

1. Introduction

This prospectus was prepared by SEG Environmental, LLC in accordance with 33 CFR § 332.8(d)(2) to establish and operate the proposed Mermentau Mitigation Bank (MMB). The proposed bank encompasses approximately 524.0 acres and will provide compensatory mitigation credits for unavoidable permitted impacts to "Waters of the United States" per 33 CFR § 332.3 (1)(a) and 33 CFR § 332.3 (1)(b). The property is in the southwestern portion of Acadia Parish along the Mermentau River and encompasses the property on either side of Castle Cove Rd. located off of LA Hwy 92 approximately 2.3 miles south of LA Hwy 90 near Mermentau, LA. The property is located within the United State Geological Survey (USGS) 7.5-minute quadrangle "Mermentau, LA".

1.1 Site Location

The property for the proposed MMB is located in Acadia Parish 2 miles south of the town of Mermentau, LA. The property abuts the eastern bank of the Mermentau River and encompasses the property on either side of Castle Cove Road 2.3 miles south of Mermentau, LA. The approximate center coordinates of the property are 30.158933 N latitude and 92.601348 W longitude. The property is located in sections 21-25, 52, 61-62, and 64 in Township 10 south, Range 2 west and in sections 25, 36 and 38 in Township 10 south, Range 3 west (Figure 1).

The surrounding property to the north and west (i.e. across the Mermentau River) consist primarily of woodlands (i.e. cypress/tupelo and bottomland hardwoods) with some pasture to the west and some rice to the north, while that to the east and south is dedicated primarily to rice cultivation and likely some crawfish production as well.

2. Project Goals and Objectives

The goal of the MMB is the restoration through re-establishment of 4.9 acres of bottomland hardwood forest and 16.0 acres of coastal prairie, rehabilitation of 85.7 acres of bottomland hardwood forest and 281.9 acres of coastal prairie, enhancement of 49.9 acres of bottomland hardwood forest and 39.7 acres of cypress swamp, and preservation of 16.8 acres of bottomland hardwood forest and 8.4 acres of cypress swamp within the Mermentau Basin, which is comprised of the Mermentau Headwaters United States Geological Service (USGS) Hydrologic Catalog Unit (HUC) 08080201 and the Mermentau USGS HUC 08080202. An additional 20.7 acres of the bank will serve as buffer. The successful re-establishment and rehabilitation of bottomland hardwood forest and coastal prairie, enhancement of bottomland hardwood and cypress swamp forest will provide additional wetland functions and values not currently realized under the current land use practices. Hence, the objectives of the MMB are to

improve water quality by eliminating the current land use practices, i.e. cattle farming on portions of the Bank property, increase flood storage capacity by eliminating old rice field levees, and increase wildlife habitat through bottomland hardwood reforestation as opposed to predominately tallow forest that currently exist. Thus, the establishment of the MMB will restore and re-establish the unique wetland functions associated with the bottomland hardwood forest, cypress swamp, and coastal prairie ecosystems that once existed on the property and increase opportunities for outdoor recreation activities (i.e. camping, hiking, hunting).

3. Ecological Suitability of the Site/Baseline Conditions

This section describes the ecological suitability of the site to achieve the objectives of the proposed mitigation bank, including the physical, chemical, and biological characteristics of the bank site and how that site will support the planned types of aquatic resources and function, as stated in 33 CFR 332.8(d)(2)(vii)(B). This section provides the baseline/current site conditions on and adjacent to the proposed site.

3.1 Land Use

3.1.1 Historical Land Use

The project is located within the Mermentau River Basin (MRB) along the east bank of the Mermentau River approximately 2 miles south of the town of Mermentau, LA. USGS historical aerial photography indicates more of the property was cleared and being farmed in February of 1952 to February of 1990 than is today and that all of the property that is cleared today of trees had already been cleared by February of 1952 (Appendix A1-A2).

Aerial photography from February of 1952 to February of 1990 also indicate that land use practices remained consistent during this time period with approximately 682 ac. in rice farming, 230 ac. in cattle production, 230 ac. in soybean production, and 670 ac. remained forested wetlands or swamps that were and still are too wet to log. Rice production on the property began to decrease from the late 1980s into early 2000 and by 2004 rice was being farmed on only 286 acres. Aerial imagery suggests that 2005 was the last year rice was farmed on the property and acreage that had previously been dedicated to rice or soy bean production was now being used to raise cattle.

Post-rice production, certain tracts near the main house were periodically maintained (possibly for cattle) while most agricultural tracts were left to go fallow until present day. Historical aerial suggest that present day areas cleared of trees on the property, i.e. actively managed pasture area, have been periodically bush hogged and imagery shows habitat ranging from emergent grassy pasture to tall grass and shrubby then back to emergent grassy habitat over the past 13 years. In all areas of prior rice production that have been left fallow.

Land use on adjacent properties have remained consistent during the same time period. Property to the north was and still is flood plain forest and swamp along the Mermentau River with some rice production along the forest edge. Much of the property to the northeast, east and south was cleared and in rice and cattle in the early 50s and still is today. And property along the western bank of the Mermentau River consisted of flood plain forest and swamp in the early 50's and remains as such today.

3.1.2 Existing/Current Land Use

ArcMap and 2015 aerial imagery and field data were used to generate Land Use maps for the MMB property, those created for the surrounding area within 1 mile of the proposed Bank boundaries were developed with ArcMap and 2015 imagery. The MMB property is approximately 1,695.0 acres and that which is being proposed for the Bank is 524.0 acres.

Current Land Use within 1 mile of the Bank boundary includes approximately 1988 acres Agriculture/Pasture (predominantly rice), 52.9 acres Commercial, 268.3 acres of Fallow Rice/Predominantly Tallow Forest, 9.2 acres of Farm Roads/Barns, 5 acres of Rice Flumes, 2653.4 acres of BLH/CT Forest, 237.3 acres of Residential, 177.8 acres of the Mermentau River, and 2.8 acres of Well Locations.

Current Land Use on the proposed MMB property consist of approximately 94.6 acres of Agriculture/Pasture, 292.3 acres of Fallow Rice/Predominantly Tallow Forest, 3.5 acres of Rice Flumes and Levees, and 131.9 acres of BLH & CT Forest. Within the Agriculture/Pasture and Fallow Rice/Predominately Tallow Forest there are approximately 20.0 acres of rice levees still in place and most seem to be in good shape with only a few cells having breaches (Figure 2).

3.2 Soils

USDA's Natural Resources Conservation Service (NRCS) Web Soil Survey site (NRCS 2017) was accessed on January 17, 2019 to obtain current soils spatial data for the MMB property. Results indicate the property is comprised of the following soil map units: 14.2% (74.4 ac.) of Acadiana silt loam, 1 to 3 percent slopes, hydric rating of 8% (AdB); 6.8% (35.7 ac.) of Barbary mucky clay, 0 to 1 percent slopes, frequently flooded, hydric rating of 100% (BAA); 3.8% (20.0 ac.) of Basile and Brule, 0 to 3 percent slopes, frequently flooded, hydric rating of 92% (BSA); 61.0% (319.7 ac.) of Crowley-Midland complex, 0 to 1 percent slopes, hydric rating of 35% (CwA); 5.1% (26.7 ac.) of Kaplan silt loam, 1 to 3 percent slopes, hydric rating of 5% (KpB); and 9.1% (47.5 ac.) of Kinder-Vidrine complex, 0 to 1 percent slopes, with a hydric rating of 70% (KvA). See Figure 3.

3.3 Hydrology

3.3.1 Contributing Watershed

The proposed MMB is in the Mermentau Watershed which is comprised of the USGS Mermentau Headwaters HUC8 08080201 and the Mermentau HUC8 08080202, two (2) hydrologic units encompassing approximately 2,544,669 acres. The drainage begins in the NW approximately 5 miles north of Oakdale, LA in Allen Parish and in the NE near Turkey Creek, LA in Evangeline Parish and runs southward to the Gulf of Mexico. While the lower portion of the Mermentau HUC is within the Louisiana Coastal Zone, the Bank property is approximately 7.8 miles north of the boundary (Figure 4).

3.3.2 Historical Hydrology and Drainage Patterns

Historically, precipitation, high water tables, periodic overbank and back flooding from the Mermentau River, and perched water with slow permeation on flat terrain (atop poorly drained soils) were the source of hydrology for the site. The Bank site consisted of a mixture of prairie and forest and surface water drained from the prairies through bottomland hardwood and cypress-tupelo forest naturally via gravity into the Mermentau River itself and eventually the Gulf of Mexico (Figure 5).

Historical drainage patterns have been highly altered over time on the site from various farming practices that occurred prior to the early 1950s. The clearing of trees for farming on the site was the first alteration, resulting in greatly reduced retention times for precipitation and overbank and back flooding from the Mermentau River and increased sediment runoff. Aerial photography from February of 1952 suggest rice, soybean and cattle farming had been established prior to this date and most of the major impacts to surface flow and drainage which currently exist today had already taken place. The development of artificial water sources such as flumes and levees within and outside of the natural River drainages that meander through the property along with levees for rice cultivation continue to hinder lateral surface flow to adjacent areas and natural drainages. Data collected for the wetlands determination in these areas revealed numerous obligate herb species present and ten (10) of the twenty-one (21) plots taken within the old levee systems were 90 - 100% inundated. Additionally, many of these areas appeared ponded and very few levee breaks were encountered.

3.3.3 Existing/Current Hydrology and Drainage Patterns

Currently, precipitation, high water tables, periodic overbank and back flooding from the Mermentau River, and perched water with slow permeation on flat terrain (atop poorly drained soils) are the sources of hydrology for the site and adjacent properties (Appendix A-3). Since the site is positioned some 64 miles upstream of the Gulf of Mexico, we do not believe the site is tidally influenced. The average annual total precipitation is approximately 60 inches per year and NRCS describes the soils on the proposed site as: Acadiana silt loam (AdB) is a very poorly drained soil with a water table at the soil surface to greater than 6 feet from January to December; Barbary mucky clay (BAA) is a very poorly drained and frequently ponded soil with water 3 feet above the surface to the surface from January to December; Basile and Brule (BSA), Basile being a frequently flooded and poorly drained soil with a water table at the surface to a depth of 1.5 feet below from December to April, and Brule, a moderately well drained soil that is frequently flooded and has a water table below the surface from 2.5 to 4 feet mostly from December to April; Crowley-Midland complex (CwA) is a soil that is somewhat poorly drained with a water table at a depth of 0.5 to 1.5 feet below the surface from December to April; Kaplan silt loam (KpB) is a somewhat poorly drained soil with an apparent water table from 1.5 to 2.5 feet below the surface mostly from December to April; Kinder-Vidrine complex (KvA), Kinder being a poorly drained soil with water perched at the surface to a depth of 2 feet mostly from December to April, and Vidrine, a somewhat poorly drained or moderately well drained soil with a perched water table from 1 to 2 feet below the surface mostly from December to April; and the remaining 0.1 acres is classified as water (NRCS 2006).

Hydrology is significantly impaired on the site by robust rice levees left in place from previous farming activities. After traversing many of the perimeter levees and crossing multiple interior rice levees during multiple days of site visits, only one small breech was found. Water is obviously being held inside the rice levees and in many cases creating an artificial habitat that is wetter than what would naturally occur. Herbaceous emergent marsh type habitat with a dense Chinese tallow over story is the dominant habitat in the fallow rice fields. Only once the remnant rice levees are degraded or gapped will a more natural ebb and flow of overbank flooding from the Mermentau River and sheet flow from rain events allow for a more natural prairie and bottomland hardwood ecosystem to be established (rehabilitated). Other hydrologic modifications on the site include flumes and flume levees, and an elevated well pad and access road adjacent to the Bank.

Surface flow in non-leveed areas essentially moves from the natural high ridges laterally to numerous natural drainages that meander through the property. Levees developed around flumes and within fields to support past rice production activities now hinder surface lateral flow to adjacent areas and natural drainages by restricting flow to only a few strategically placed levee breaks. And elevated roads used for headlands and property access also limit lateral flow to adjacent lower areas. All manmade, natural or natural/modified drainages on the property convey flow to the Mermentau River.

Primary impacts to drainage on the property today are the flume and rice field levees in the areas formerly in rice production, both of which are creating ponding conditions on much of the property by hindering lateral flow to adjacent areas. Since Chinese tallow trees are already a problem in the area, any hydrologic improvement plans should include minimal soil disturbance. With that in mind, the applicant is proposing to reduce ponding and improve lateral surface flow and back flooding by removing some levees altogether and installing 30foot-wide levee gaps at 250-foot intervals along other rice field and flume levees. A map depicting current surface hydrology and drainage patterns is included in Figure 6.

3.3.4 Jurisdictional Wetlands

An ACOE preliminary jurisdictional determination of the Bank property dated 25 January 2016 is included as Appendix B. The determination concluded that 482.0 acres of the Bank property are jurisdictional wetlands, 5.2 acres are non-wetland waters, and 36.8 acres are uplands. Uplands include a pasture headland, rice flume levees, a small section of farm road, and an old oil and gas location road, included as buffer in the Bank, and old rice field levees that will represent BLH and Coastal Prairie Re-establishment acres. Non-wetland waters include the rice flumes, and these are included as buffer in the Bank. Those areas that were deemed wetlands are currently in pasture or areas overgrown with Chinese tallow trees.

3.4 Vegetation

3.4.1 Historical Plant Community

The Mermentau Mitigation Bank lies within the Great Southwest Prairie region of Louisiana and lies adjacent to the east bank of the Mermentau River. The historical plant community in the lowest elevation portions of the property immediately adjacent to the River and associated sloughs, primarily those areas comprised of Barbary mucky clay, 0 to 1 percent slopes, frequently flooded (BAA), and Basil and Bruile soils (BSA), 0 to 3 percent slopes, frequently flooded, was and still is for the most part occupied by bald cypress-tupelo swamp and bottomland hardwood forest as classified by LNHP (2009). Baldcypress (Taxodium distichum) and tupelo gum (Nyssa aquatic) were and still are the co-dominant species in these forested alluvial swamps and common associates include Nyssa sylvatica var. biflora (swamp blackgum), Acer rubrum var. drummondii (swamp red maple), Salix nigra (black willow), Fraxinus profunda (pumpkin ash), Fraxinus pennsylvanica (green ash), Planera aquatica (water elm), Gleditsia aquatica (water locust), Itea virginica (Virginia willow), and Cephalanthus occidentalis (buttonbush). Bottomland hardwood forest as classified by LNHP are wetland forest comprised of various species assemblages or communities based primarily on environmental factors such as physiography, elevation, soils, and moisture regime. Expected in the lowest lying areas consisting of predominantly poorly drained soils would be Overcup Oak (Quercus lyrata) and Water Hickory (Carya aquatic) bottomland forest, with overcup oak and water hickory as codominants and green ash, Celtis laevigata (hackberry), Cornus foemina var. foemina (swamp dogwood), Forestiera acuminata (swamp privet), Planera aquatica (planertree), Cephalanthus occidentalis (buttonbush) as common associate species. Baldwin and Allain (2017) describe the Barbary soil series as occurring on low, broad, ponded backswamps on delta plains occupied by bottomland hardwood and swamp species, and Basile as occupying floodplains on coastal plains with similar vegetation types as the Barbary series.

Species on slightly higher elevations adjacent to sloughs on Acadiana silt loam (AdB), 1 to 3 percent slopes, were likely predominantly bottomland hardwood forest, possibly with some mixed pine, similar to those areas on this soil type that are currently forested and proposed for enhancement or preservation. These were likely Hackberry-American Elm-Green Ash Bottomland Forest where Celtis laevigata (hackberry), Ulmus americana (American elm), and Fraxinus pennsylvanica (green ash) are codominants. This community occurs in floodplains of major rivers on low ridges, flats and sloughs in first bottoms. Soils are seasonally inundated or saturated periodically for 1 to 2 months during the growing season. Such conditions occur with frequency ranging from 51 years to 100 years per 100 years. Associated species are commonly Carya aquatica (water hickory), Quercus nuttallii (nuttall oak), Q. phellos (willow oak), Q. nigra (water oak), Q. lyrata (overcup oak), Liquidambar styraciflua (sweet gum), Acer negundo (box elder), Ulmus alata (winged elm), Acer rubrum (red maple), Gleditsia aquatica (water locust) and Plantanus occidentalis (American sycamore). And common understory species include Cornus foemina var. foemina (swamp dogwood), Crataegus spp. (hawthorn), and Morus rubra (red mulberry). Many vines and herbaceous plants are present here as well.

While Baldwin and Allain (2017) have the Acadia soil series geomorphically associated with "side slopes of erosional stream channels on uplands on coastal plains", NRCS designated <u>all</u> of the fields proposed for planting within the Bank as prior converted wetlands (PC) in 1988. Additionally, two of our wetland determination sampling sites on the property within this soil type that were not affected by remnant rice levees, i.e. levees helping the site to retain water, passed the wetland determination test. Both sites had oxidized rhizospheres along living root channels (C3) as primary hydrology indicators, both passed the dominance test for hydrophytic vegetation, and both sites passed the F3 Depleted Matrix indicator for hydric soils. One of the two sites, Site 17, was in a field with two drainages in very close proximity that likely helped make the site drier, and the other site, Site 31, was in existing bottomland hardwoods with a fairly high concentration of Chinese tallow trees.

Historical plant communities on Kinder-Vidrine silt loams (KvA), 0 to 1 percent slopes, were likely a mixture of bottomland species with a longleaf pine component transitioning into prairie. While Baldwin and Allain (2017) list the Kinder soil series geomorphic association as flats on coastal plains, general

vegetation as transitional, with savanna, mixed hardwoods, and longleaf pine communities, the soil map unit has a 70% hydric rating and is described as poorly drained with a perched water table at the surface to 2 feet from December to April (USDA 2006), so "mixed hardwoods/upland diverse forests" is not particularly a good fit for the map unit. Two of our wetland determination sampling sites on the property within this soil map unit (within existing woods) passed the wetland hydrology test with sediment deposits (B2), Drift deposits (B3), and water-stained leaves (B9) indicators, both passed the dominance test for hydrophytic vegetation, and both passed the hydric soil test with the F3 depleted matrix indicator.

Historical plant communities on Crowley-Midland complex (CWA), 0 to 1% slopes were likely comprised of wet prairie plant communities. Baldwin and Allain (2017) list the soil series general vegetation type as prairie and the vegetation community as prairie. NRCS Soil Survey Staff (2017) describe the map unit as somewhat poorly drained with a perched water table at about 6-18" from December to April in normal years. A typical 0-18-inch profile of the soil map unit is comprised of silt loam, a soil texture with a capillary fringe (CF) of 9.8-15.7 inches (Mausbach 1992), which would draw water upward to the surface or within 8.2 inches of the surface from December to April during normal years using the minimum CF estimate. Coastal Prairie vegetation is extremely diverse and dominated by grasses such as Paspalum plicatulum (brownseed paspalum), Paspalum spp. (paspy grasses), Schizachyrium scoparium and S. tenerum (little and slender bluestem), Andropogon gerardii (big bluestem), Andropogon spp. (broomsedges), Aristida spp. (three-awn grasses), Eragrostis spp. (love grasses), Spartina patens (wire grass, near marshes), Panicum virgatum (switch grass), Panicum spp. (panic grasses), Sorghastrum nutans (Indian grass), Sporobolus spp. (dropseeds), and Tridens spp. (purple-top). Important sedges within the prairie community include Carex spp. (caric sedges), Cyperus spp. (umbrella sedges), Rhynchospora spp. (beaked sedges), and Scleria spp. (nut-rushes). A vast array of forbs is also present, including Cacalia ovata (Indian platain), Helianthus mollis (sunflower), Liatris spp. (blazing-stars), Asclepias spp. (milkweeds), Silphium spp. (rosin-weeds), Petalostemum spp. (prairie clovers), Baptisia spp. (indigos), Amsonia tabernaemontana (blue star), Rudbeckia spp. (brown-eyed susans), Euphorbia spp. (spurges), Euthamia spp. (flat-topped goldenrods), Hedyotis nigricans (bluets), Ruellia humilis (wild petunia), Ludwigia spp. (water primroses), Coreopsis spp. (tickseeds), Solidago spp. (goldenrods), Agalinis spp. (false foxgloves), and Eupatorium spp. (thoroughworts). Many plants within Coastal Prairies are also found in the pine savannahs and flatwoods that occur immediately north of the coastal prairie region. Many of the above mentioned species are common, plus Drosera brevifolia (sundew), Polygala spp. (milkworts), Aletris spp. (colic-roots), Rhexia spp. (meadow beauties), and Sabatia spp. (rose-gentians). Historically, periodic fire played a critical role in this natural community by limiting certain woody species, including Sapium sebiferum (Chinese tallow tree) which has become especially problematic (LNHP 2009).

Historical plant communities on Kaplan silt loam (KpB), 1 to 3 percent slopes was likely prairie plant communities as well. Baldwin and Allain (2017) list the soil series geomorphic association as meander scrolls on coastal plains, general vegetation as prairie, and associated plant community as prairie. This series is likely to be drier than the others given the map unit has a hydric rating of only five percent (5%).

The historical plant communities first changed with the clearing of trees in the forested areas for farming prior to January of 1940 (Appendix A-2). Aerial photography from January of 1952 to February of 1990 indicate that land use practices remained fairly consistent during this time period with approximately 682 acres in rice farming, 230 acres in cattle production, 230 acres in soybean production, and 670 acres remained forested wetlands or swamps that were and still are too wet to log or clear. Rice production on the property began to decrease from the late 1980s into early 2000 and by 2004 rice was being farmed on only 286 acres. From this time to the present some areas reverted back to forest and while other areas formerly in rice production were cleared periodically of brush and was being used as pasture.

3.4.2 Existing Plant Community

Today, Baldcypress-Tupelo swamps still occupy that portion of the property immediately adjacent to the Mermentau River and the lower elevation areas of sloughs meandering through the property. Bald cypress and water tupelo are codominants in the swamps with maximum dbhs of cypress being about 69 inches and that of water tupelo about 50 inches. Percent overstory for the co-dominants are approximately 50-70 percent, in the mid-story 20-30%, and the understory 5-15% with common buttonbush (Cephalanthus occidentalis) mixed in as well. Lower elevation areas adjacent to swamp consist of overcup oak and water hickory (Carya acquatica) as codominants, slightly higher elevations with codominants of hackberry-American elm-green ash, and the highest elevations occupied by the codominants sweetgum and water oak (Quercus nigra). The above-mentioned areas totaling 25.2 acres are being proposed as preservation for the Bank.

Areas of the Bank property formerly in rice production and now Predominantly Tallow Forest (296.8 acres), tallowtrees are the only dominant tree species and are codominants in the sapling/shrub stratum along with southern bayberry and groundseltree. Maximum dbh of tallowtrees in these areas is approximately 4-6 inches and percent coverage in the tree stratum ranges from 10-40% and 5-10% in the sapling/shrub stratum. Dominant herb species include common spike-rush (Eleocharis palustris), alligator-weed (alternanthera philoxeroides), nodding beak sedge (Rhynchospora inexpansa), giant plume grass (Saccharum giganteum), broom-sedge (Andropogon virginicus), and lamp rush (Juncus effuses). Muscadine (Vitis rotudifoloia) was the one dominant woody vine species present. In all current proposed Rehabilitation areas Chinese Tallow represents well over 50% of the total cover.

For Bank areas cleared of trees prior to the early 1950's and currently in Agriculture/Pasture (91.7 acres), dominant herb species include bahia grass (Paspalum notatum), common spike-rush (Eleocharis palustris), soft-stem clubrush (Schoenoplectus tabernaemontani), swamp smartweed (Persicaria hydropiperoides), Vasey's Grass (Paspalum urvillei), virginia buttonweed (Diodia virginiana), and alligator-weed.

Areas in Cypress, tallow, and button bush (39.7 acres) along the slough in the southern portion of the Bank include Bald cypress with maximum dbhs of about 28 inches and that of tallow about 7 inches. Chinese tallow are dominants in the overstory with 20-60 percent of the overstory and in the midstory with 15-30% cover. In the understory, tallow and cypress are co-dominants and make up 5-25% in the understory. Common buttonbush (Cephalanthus occidentalis) is mixed in the understory as well and can range mixed in as well.

Areas in bottomland hardwood and tallow (49.9 acres) in the south adjacent to the slough have sugarberry (hackberry) and tallow as codominants with maximum dbhs of approximately 12 inches and that of sugarberry approximately 25.28 inches. The over-story is comprised of 20% Sugarberry and 50% tallow, the mid-story 20% tallow and 5% Chinese privet (Ligustrum sinense), and the understory dominants at the time consisted of 20% Indian-strawberry (Potentilla indica), and 5% of Chinese privet, cress-leaf groundsel (Packera glabella), dwarf palmetto (Sabal minor), and Japanese climbing fern (Lygodium japonica)

Areas included as Buffer (20.7 acres) include the Bank include 5.2 ac. of rice flumes, 4.3 acres of gravel road, 3.6 acres of field headland roads, and 7.6 acres of flume levees with mature BLH trees (Figure 7 – Areas A-G).

3.5 General Need for the Project in this Area

Louisiana's Nonpoint Source Management Plan (LDEQ 2012) found that in 2010 nearly all of Mermentau River Basin (USGS Hydrologic Catalog Units 08080201 & 08080202) did not fully meet the fish and wildlife propagation (FWP) goals of the Clean Water Act. LDEQ reported that sixteen water bodies fully met contact recreation uses but were not fully meeting the fish and wildlife propagation (FWP) goals of the Clean Water Act, including the Mermentau River Origin to Lake Arthur. Like many watersheds in southwestern Louisiana, the release of sediment and nutrient laden water from ponds used for rice production during the spring prevents many waterways from meeting water quality standards for dissolved oxygen in summer and early fall. Additionally, cattle farming operations can also impact water quality when excess fertilizers and manure runoff into nearby waters. Hence, the cessation of rice and cattle farming practices on the Bank property will help LDEQ meet the FWP goals of the Clean Water Act by reducing these sources of pollution within the Mermentau Basin. Additionally, Louisiana Department of Wildlife and Fisheries (LDWF) has also identified water quality issues in the Mermentau Basin as problematic and recommends support for current initiatives or development of new programs to reduce siltation and sedimentation throughout the Mermentau Basin (LA CWCS 2005).

Also, the MMB is located approximately 39 miles due north of the coastline and forest within 62 miles of the Gulf coast have been identified by researchers and conservation organizations as critical habitat worth preserving and restoring for numerous species of migrating and nesting landbirds (Barrow et. al 2005; Barrow and Fontenot 2006; Twedt and Best 2004; Lester 2005). Barrow et. al. (2005) identified chenier forest and the Mermentau River Basin to be an area with a 'consistent abundance' of migrating Nearctic-Neotropical landbirds each spring and autumn as they migrate across and around the Gulf of Mexico. And Gauthreaux (1975) has identified wooded habitats inland up to 62 miles as suitable habitat for spring migrants to replenish energy for the coming reproductive season. Barrow et al. (2000) reported seventy-three (73) known Nearctic-Neotropical species using Chenier forests in the spring and 66 known Nearctic-Neotropical species using these forest in autumn. Using weather radar, Gauthreaux, in Barrow and Fontentot (2006), estimated that 88,000 migrants per mile of Louisiana coastline arrive each day during the peak of the spring migration and that 20-100% of them land in chenier woods depending on the weather in the Gulf. When weather is unfavorable for continued migration most migrants fall out in chenier forest, but when weather is favorable up to 80% will continue inland. During the autumn months, some researchers estimate that between 2 and 5 billion birds leave North America to winter in Central and South America and because most long-distance migrants nest in eastern forest of North America, tens of millions are likely to filter through Louisiana forest near or on the coast twice a year (Barrow and Fontenot 2006).

Additionally, native forest in the Chenier Plain within the Mermentau River Basin were reduced by 17% from 1952-1974 while urban areas and spoil banks increased by 42% (Gosselink et al. 1979). From 1990 to 1996 forested wetlands in the Mermentau River Basin remained consistent, but mixed upland forests were being replaced with pine plantation forest as a result of the timber industry (Ramsey et al. 2001). The quality of remaining forest habitat for migrants has also been diminished in some areas. Livestock grazing and associated activities within much of the remaining Chenier forest have greatly reduced the understory thereby reducing use by many early migrants, dead-leaf foragers, frugivores, and nectarivores (Ramsey et al. 2001). Additionally, Chinese tallowtrees (Triadica sebifera), an invasive and now naturalized species, has spread perniciously throughout much of the Gulf Coast, including at the MMB Bank site. After finding no difference in species richness between spring migrant use of tallow woodlands and riparian forest, but significantly lower insect loads in tallow forest, Barrow and Renne (2001) speculated that while tallow woodlands are able to provide shelter for migrants, they may lack the required food resources to sustain migration. Therefore, the removal of Chinese Tallow tree and reestablishment, rehabilitation and enhancement of native bottomland hardwood forest on the MMB may increase migrant land bird habitat quality and abundance in the Mermentau River Basin.

The development, management, and preservation of the MMB also supports the findings and recommendations of the Coastal Wetland Forest Science Working Group (2005) by 1) conserving, restoring, and managing coastal wetland forests, including collaborative efforts among public and private entities, to ensure that their functions and ecosystem services will be available to present and future citizens of Louisiana and the United States, and 2) insures mitigation credits of similar resource type are available for impacts to coastal wetland forests within the watershed.

Additionally, wetland forest of Louisiana provides important habitat for both fish and wildlife. Many nesting birds of prey will nest in or hunt near wetland forest, such as the Bald Eagle, a threatened species, Osprey, Black and Turkey Vultures, Swallow-tailed Kite, a species of conservation concern, Mississippi Kite, American Kestrel, and Cooper's, Red-shouldered, and Red-tailed Hawks (Dittmann et al. 2010). These forests also serve as nesting habitat for numerous resident land and wading bird species as well. Additionally, wetland forest of Louisiana also provide habitat for millions of Nearctic-Neotropical migrant birds during spring and fall migrations. More specifically, wetland forests have been shown to support various migrant species such as yellow crowned night-herons, eastern phoebes, acadian flycatchers, northern parulas, and hooded, yellow rumped, prothonotary, and yellow-throated warblers. Wetland forest in the area also support resident bird species such as great blue herons, wood ducks, redshouldered hawks, great horned and barred owls, pileated woodpeckers, yellowbellied sapsuckers, northern cardinals, blue jays and carolina chickadees, as well as migrant songbirds such as yellow-billed cuckoos, summer tanagers, red-eyed vireos, and great crested flycatchers (Demay et al. 2007). Numerous species of waterfowl frequent flooded wetland forest as well, including mallard, gadwall, blue and green-winged teal, american wigeon, hooded merganser, and wood duck.

During 18 breeding bird censuses, Twedt et al (1999) found that species richness, diversity, and territory density were greater in bottomland hardwood stands than managed cottonwood stands and that mature bottomland hardwood forests are twice as valuable for bird conservation as cottonwood plantations. The development, management and conservation of the MMB is also in accord with Partners in Flight plan for bird conservation in the Mississippi Alluvial Valley to reestablish bottomland hardwood forest to increase the area of forests (Twedt et al 2006). Wetland forest also serve as critical wintering habitat for Central Region populations of American woodcock. U.S. Fish and Wildlife Service (1990) reported an annual decrease of 0.8% since 1968 and Kelly and Rau (2006) noted an 8% decline of displaying adults from 2005 to 2006. U.S. Fish

and Wildlife Service (1990) attributed declining woodcock populations to a decrease in quantity and quality of habitat and management objectives include reversing this trend.

Additionally, the MMB will restore 297.9 acres of coastal prairie in the Texas-Louisiana Coastal Prairie Ecosystem, an ecosystem that now occupies less than 1% of its former range. Once stretching along the Gulf Coast from Corpus Christi, TX to Lafayette, LA and encompassing more than 9 million acres, this habitat was home to thousands of bison, pronghorn antelope, bears, red wolves, and a vast array of prairie birds, small mammals, and insect populations. Listed as "imperiled" in Louisiana by the Louisiana Natural Heritage Program (LNHP 2009), and "imperiled globally" by the Texas Natural Heritage Program and The Nature Conservancy (Grace 2000), this unique Louisiana ecosystem has been reduced from nearly 2.5 million acres to less than 100 acres (Allain et. The coastal prairie plant community is extremely diverse and al. 2000). dominated by mid-tallgrass species and home to 11 federally-listed plant species and serves as critical habitat for the federally-listed whooping crane (Grus americana). Louisiana coastal prairies were found to have 594 plant species belonging to 94 different families (Allain et al. 2004), with generally more mesic species in north, or on higher ground, and wetter species in the south, or on lower ground.

There are 24 species of conservation concern listed for coastal prairies, the southern crawfish frog, mottle duck, northern harrier, northern bobwhite, yellow and black rail, sandhill and whooping crane, American woodcock, shorteared owl, scissor-tailed flycatcher, spragues pipit, loggerhead shrike, dickcissle, field, grasshopper, Henslow's and Le Conte's sparrows, 3 butterfly species, the eastern spotted skunk, ornate box turtle, and western slender glass lizard (LA CWCS 2005). LDWF (2015) has identified 58 Species of Greatest Conservation Need (SGCN) associated with coastal prairies, including 1 crustacean, 3 noncrustacean arthropods, 1 amphibian, 4 reptiles, 27 birds, 4 mammals, and 20 species of plants. The Partners in Flight Bird Conservation Plan for the Gulf Coastal Prairie Region (Vermillion et al. 2008) has identified the decline of numerous grassland dependent bird species with the decline of coastal prairie habitat, and while the addition of grassland habitat areas greater than 500 acres is the ideal management goal, the addition of smaller patches within a mixture of agricultural fields and pasture within low-density residential areas can be beneficial, especially to wintering birds like Le Conte's sparrows.

Louisiana's Comprehensive Master Plan for a Sustainable Coast focuses greatly on reducing the threat of flooding to commercial and residential properties in the coastal zone (CPRA Master Plan 2017). And while the MMB lies 7 miles north of the Louisiana coastal zone, the property is 5 miles SE of Jennings and lies immediately east and adjacent to the Mermentau River and therefore is in position to attenuate waters from extreme weather events such as occurred in August of 2016. The number of oil and gas facilities, infrastructure, and midstream services (pipelines) continue to increase across this service area (supported by credit sales available from existing Banks listed on RIBITS (USACE), making the need for wetland restoration and additional mitigation banks a fundamental necessity for balancing offsets to impacts.

4. Establishment of a Mitigation Bank

Site restoration for the MMB will consist of hydrologic restoration (via removal and degradation of rice levees) and then reforestation, via replanting, of native bottomland hardwood forest species as well as exotic species control measures for the Bottomland Hardwood component of the Bank.

Cessation of cattle production and grazing, rice levee removal, invasive species removal (Chinese Tallow), replanting of coastal prairie species, and reintroduction of a fire regime on a 1 to 3-year schedule are the proposed methods of re-establishing and rehabilitating the Prairie component.

The Bank will re-establish 4.9 acres of bottomland hardwood forest and 16.0 acres of coastal prairie, rehabilitate 85.7 acres of bottomland hardwood forest and 281.9 acres of coastal prairie, enhance 49.9 acres of bottomland hardwood forest and 39.7 acres of cypress swamp, and preserve 16.8 acres of bottomland hardwood forest and 8.4 acres of cypress swamp within the Mermentau Basin, which is comprised of the Mermentau Headwaters United States Geological Service (USGS) Hydrologic Catalog Unit (HUC) 08080201 and the Mermentau USGS HUC 08080202. An additional 20.7 acres of the bank will serve as buffer (Figure 8).

Restoration of surface hydrology, cessation of agriculture and cattle production on both forested and prairie components, continued development of planted trees and recruitment of natural herbaceous communities in the understory will continue to improve water and nutrient retention time, thereby improving aquatic functions and values on the Bank.

4.1 Site Restoration Plan

4.1.1 Soils/Hydrologic Work

Leveling and gapping all rice and flume levees and back filling adjacent borrow areas will allow for a more natural passive flow of surface waters to adjacent areas. It will also once again allow flood waters from the Mermentau River to freely enter the Bank area during high water events thereby creating a wetter substrate and increasing the regional storage capacity of floodwaters. Overall the above said work will create a wetter forested regime conducive to forested and prairie wetland propagation and hydric soil conditions. The Plan View detailing the work required to rehabilitate hydrology on the bank is included in Appendix C. Appendix C also includes the location of rice field and flume levees to gap and rice field levees and headlands to degrade.

In late fall/early winter all agricultural/cattle production activities will cease on the proposed Bank area. At the beginning of the following year a small excavator will be used to access and gap rice field levees and flumes to reduce artificial ponding within the confines of the levees. Subsequently, as field conditions allow, a bulldozer will be used to degrade levees and fill adjacent borrow areas, further develop gaps in levees, and degrade headlands degrade (outer perimeter levees along flumes will not be fully degraded due to the amount and size of native trees that have established there). Field preparation for bottomland hardwood and prairie restoration in areas currently overgrown with brush and tallow trees will begin in late winter/early spring after levees have been degraded and as field conditions allow. A bulldozer will be used to shear and pile vegetation such that it can be burned effectively in August or September or when the ground is dry enough to do so. In early spring after stumps, seeds, and any residual saplings sprout a foliar herbicide application via helicopter will be applied to areas cleared of tallow and brush and to areas in pasture to kill all vegetation. In late summer/early fall as re-established vegetation begins to die back, slash piles and grass in these fields will be burned as conditions allow. All areas of the Bank to be planted will then be deep tilled and 9 x 9-foot planting rows will be ripped to a depth of approximately 16 inches in BLH areas.

4.1.2 Vegetative Work

Bottomland Hardwoods

On the 90.6 acres of BLH to be re-established or rehabilitated, 1 year old bare-root seedlings obtained from a registered licensed regional nursery will be planted in the prepared tracts between December 15th and March 15th the winter after final field preparations have been performed. An experienced forestry firm will be used to purchase, handle, and plant mixed BLH species on 9-foot centers within prepared tracts and then coordinate a pre-emergent herbicide aerial application for pre- and post-emergent control of annual and perennial broadleaf weeds. Tree species and percentages were chosen by comparing immediate adjacent forested stands and matching those species as best as possible and practical. Representative species and percentages (60% hard mast/40% soft mast) suitable for the MMB are as follows (Table 1):

Species	AGCP Wetland Status	BLH Hardmast	BLH Softmast	BLH %
Cherrybark Oak (Quercus pagoda)	FACW	X		8%
Overcup Oak (Q. lyrata)	OBL	Х		8%
Texas Red Oak (Q. texana)	FACW	X		15%
Water Hickory (Carya aquatica)	OBL.	X		15%
Water Oak (Q. nigra)	FAC	X		5%
Willow Oak (Q.phellos)	FACW	X		9%
American Elm (Ulmus americana)	FAC		X	5%
Bald cypress (Taxodium distichum)	OBL		Х	5%
Common Persimmon (Diospyros virginiana)	FAC		Х	5%
Red maple (Acer rubrum)	FAC		X	10%
Red Mulberry (Morus rubra)	FACU	÷ · · · · ·	X	5%
Sugar-Berry (Celtis laevigata)	FACW		X	5%
Sweetgum (Liquidambar styraciflua)	FAC		Х	5%
TOTALS		60%	40%	100%

Table 1. Species plant list, mast type, percentage of each, and overall hard/soft mast ratio.

All the listed species are available commercially. Species chosen were appropriate to tolerate the same hydrological conditions as those on the adjacent lands and according to elevations on the proposed sites. While red mulberry is a FACU species, it is a natural and valuable component within Hackberry-American Elm-Green Ash Bottomland Forest and will therefore be planted on slightly higher elevations. In Arkansas, Jackson and Kannan (2018) documented more than 31 resident, breeding, and migrant birds eating the mulberry fruit and only one of these species, pine siskin, are listed as rare for the Bank area (Cornell University 2015). Additionally, many animals such as raccoons, opossums, and fox and gray squirrels feed on the fruit. Natural regeneration and recruitment of native species is anticipated to occur at this site and will be cataloged and submitted via the required annual monitoring reports on the appropriate schedule set forth by the IRT. The Sponsor intends to use all prudent efforts, physical, chemical, or mechanical, to eliminate existing undesirable/exotic vegetation present on the site. Ground cover herbicide treatments and invasive control treatments will be implemented initially and as needed during the establishment of the Bank.

Coastal Prairie

Once woody species are removed and disking and settling has occurred, 297.9 acres of coastal prairie will be restored by allowing emergent vegetation including grasses and forbs to re-establish. Many prairie indicator species have been noted on the site during previous site visits. Some coastal native prairie seed mix from an approved source may be introduced to boost diversity and speed the restoration process, but in large it is our opinion that appropriate species will flourish with re-introduction of fire. A 1-3-year prescribed fire rotation

will then be introduced to control growth of woody vegetation. A list of potential species that may be added with supplemental seeding in the Bank are included in Table 2. The list includes FAC or wetter species chosen from the LNHP (2009) coastal prairie species list and the "Cajun Prairie" species list compiled by Allen et al. (2001).

Acalypha gracilens, Agalinis fasciculata, Agalinis purpurea, Aletris aurea, Ambrosia psilostachya, Ambrosia trifida, Amsonia tabernaemontana, gerardii, glomeratus, Andropogon Andropogon Andropogon virainicus. Arnoglossum ovatum, Asclepias lanceolate, Asclepias longifolia, Carex spp. Coleataenia anceps, Conoclinium coelestinum, Coreopsis gladiate, Coreopsis pubescens, Coreopsis tinctoria, Coreopsis tripteris, Ctenium aromaticum, Cyperus spp., Dichanthelium scoparium, Eleocharis microcarpa, Eleocharis obtuse, Eragrostis elliottii, Eragrostis refracta, Erigeron philadelphicus Erigeron strigosus, Eupatorium compositifolium, Eupatorium perfoliatum, Eupatorium rotundifolium, Eupatorium semiserratum, Eupatorium serotinum, Euthamia caroliniana, Euthamia leptocephala, Helenium drummondii, Helenium flexuosum, Helianthus angustifolius, Helianthus annuus, Liatris acidota, Liatris garberi, Liatris spicate, Panicum virgatum, Paspalum floridanum, Paspalum plicatulum, Paspalum setaceum, Rhynchospora caduca, Rhynchospora colorata, Rudbeckia nitida, Scleria ciliate, Scleria oligantha, Scleria pauciflora, Solidago rugosa, sempervirens, Symphyotrichum dumosum, Solidago Symphyotrichum lateriflorum, Symphyotrichum praealtum, Tridens strictus, and others.

The major anticipated invasive species of concern for the MMB is Chinese tallow, especially in BLH areas during the first seven years of the bank. With that in mind, two (2) applications of Clearcast© have been budgeted, the first for Year 1 and second for Year 5 if needed. If required, aerial applications will take place late in the growing year before tallow leaves change colors in Years 1 and 5. All invasive species will be cataloged annually and reported during the appropriate annual reporting year and measures will be taken to keep any invasive species to less than five percent of the bank as a whole. Herbicides such as Clearcast© and Garlon in BLH areas may be utilized to keep Chinese Tallow within allowable tolerances. Fire will be the primary tool control tallow. Costs for long term monitoring and invasive species control are figured into the Long-Term Management Plan and financial assurances.

4.2 Technical Feasibility

The construction work required to establish the bank is certainly feasible and well within the sponsors capabilities to support. The property as it exists today is surrounded by modern farms utilizing modernized mechanized equipment to efficiently prepare land for rice and crawfish production. For the most part, this same equipment will be sufficient to develop the bank as discussed above. Equipment required will be a large bulldozer to clear tallow trees where applicable, fill small surface drains and remove levees, and an excavator to gap flume levees where needed, both of which are available and used regularly by nearby farmers or construction and equipment companies.

4.3 Current Site Risks

There are no known potential threats to the bank site or resource type the bank intends to provide and/or protect. Old rice and flume levees that currently impact hydrology will be removed or gapped sufficiently such that surface flow is restored. Enterprise and Shell Pipeline right-of-ways are located along the edges of bank but will not interfere with hydrology restoration efforts or long-term maintenance plans for the bank. Agricultural land to the north, south and east is zoned Agricultural, while the woodlands to the west along the river is zoned Timberland.

4.4 Long-Term Sustainability of the Site

Standard management techniques will be employed to control invasive species, conduct required monitoring and reporting and perform long-term maintenance on the site. Rice and flume levees necessary to restore hydrology will be degrade or gapped sufficiently to alleviate long term maintenance requirements regarding hydrology. Additionally, the sponsors have budgeted aerial applications of Clearcast© to treat Chinese tallow trees throughout the planted areas if necessary and in the bottomland hardwood forest areas in preservation. Note that none of the main drainages in this area are tidally influenced, salt-water intrusion is a non-issue. Adaptive management is a last option if standard practices do not yield expected results. Any adaptive management is subject to approval from the IRT prior to implementation.

5. Proposed Service Area

Commensurate with the Louisiana Wetland Rapid Assessment Method (LRAM), the Primary Service Area for the MMB BLH credits will be the Mermentau Basin comprised of USGS Hydrologic Units 08080201 and 08080202, Mermentau Headwaters and Mermentau respectively. This vast area includes portions of Acadia, Allen, Calcasieu, Cameron, Evangeline, Jefferson Davis, Lafavette, St. Landry and Vermilion Parishes. A RIBITS search for bottomland hardwood (NO) credits on November 11, 2017 indicates that Caney Creek Mitigation Bank is the only Bank in the Primary Service area with bottomland hardwood credits (183.90) and one of two banks with cypress/tupelo (CT) credits; Caney Creek with 35.30 cypress/tupelo credits and Grand Canard with 56.10 credits. The Primary Service Area of coastal prairie (NO) credits will be the Calcasieu Basin, the Mermentau Basin, and the Vermilion-Teche Basins. The Calcasieu basin consists of USGS Hydrologic Units 08080203 (Upper Calcasieu), 08080204 (Whiskey Chitto), 08080205 (West Fork Calcasieu), and 08080206 (Lower Calcasieu), the Mermentau Basin Hydrologic Units 08080201 and 08080202, Mermentau Headwaters and Mermentau respectively, and the

Vermilion-Teche Hydrologic Units 08080102 and 08080103, Bayou Teche and Vermilion respectively. The entire Service Area encompasses approximately 8,074,396 acres and a search for prairie credits (NO) conducted on 5/1/19 found 1,088.70 available credits. Use of bank credits beyond the Primary Service Area will be determined on case-by-case basis by the CEMVN.

6. Operation of the Mitigation Bank

6.1 Project Representati

Sponsor:	Mermentau Mitigation Bank, L.L.C.
	Mary Anne Champney
	1433 Hideaway Ct.
	Baton Rouge, LA 70806

Agent:

SEG Environmental, LLC 224 Rue De Jean Lafayette, LA 70508 <u>pchadwick@segenviro.com</u> 337-257-8906 (c) 337-347-6777 (o)

Landowner:

Le Petit Chateau De Luxe Mary Anne Champney 1433 Hideaway Ct. Baton Rouge, LA 70806

6.2 Qualifications of the Sponsor

Mermentau Mitigation Bank, LLC (MMB) will be responsible for administrative duties and management of the Bank land. The owners of MMB have the financial assurances required for such an endeavor and have hired SEG Environmental, LLC (SEG) of Lafayette, LA as their Agent, a company with over 20 years of combined personal experience in the environmental and mitigation banking industry. SEG Environmental LLC mitigation bank establishment and management experience includes but is not limited to: wetland determinations, Section 404 permitting, prospectus development, MBI development, site preparation, site planting, monitoring, reporting and management related duties.

6.3 Proposed Long-Term Ownership and Management Representatives

Mermentau Mitigation Bank, LLC will ultimately be responsibility for the Long-Term Ownership and Management of the MMB.

6.4 Site Protection

The Sponsor/Owner shall be responsible for protecting all lands within the entire Bank. The site will be protected by a perpetual Louisiana conservation servitude in accordance with the Louisiana Conservation Servitude Act (La. R.S. 9:1271, *et seq.*) on the entire 524.0-acre bank site. The conservation servitude shall be recorded in the Mortgage and Conveyance Records of Acadia Parish.

6.5 Long-Term Strategy

The Sponsor will ensure the long-term success and sustainability of the MMB. Long-term viability and sustainability of the Bank will be ensured through active standard and if need be adaptive management including, but not limited to, prescribed fire, invasive species control, appropriate monitoring, and long-term maintenance. No long-term structural management will be required as natural hydrological influences will be restored. A long-term management plan will be included with the mitigation banking instrument (MBI), which will detail long-term management needs and costs, and identify a funding mechanism in accordance with 33 CFR § 332.7 (d). A long-term management plan will be included in the Mitigation Banking Instrument that will address long-term management requirements, costs and the identification of a funding mechanism in accordance with 33 CFR §332.7(d).

7. REFERENCES

- Allain, Larry, L. Smith, C. Allen, M. Vidrine, F. Malcolm, J. B. Grace. 2004. "A Floristic Quality Assessment System for the Coastal Prairie of Louisiana". Proceedings of the North American Prairie Conferences. 62. https://digitalcommons.unl.edu/napcproceedings/62.
- Allain, L., M. Vidrine, V. Grafe, C. Allen, and S. Johnson. 2000. Paradise Lost? The coastal prairie of Louisiana and Texas (2nd edition). U.S. Fish and Wildlife Service and U.S. Geological Survey (with Coastal Conservation Initiative, Texas). 40 pp.
- Allain, L., M. Vidrine, V.Grafe, C. Allen and S. Johnson. 1999. Paradise lost? The coastal prairie of Louisiana and Texas. U.S. Fish and Wildlife Service and U.S. Geological Survey. 39 pp.
- Allen, C.M., M. Vidrine, B. Borsari and L Allain. 2001. Vascular Flora of the Cajun Prairie of Southwestern Louisiana. In N. P. Bernstein and L.]. Ostrander

(eds.), Proceedings of the 17th North American Prairie Conference, Mason City, Iowa: North Iowa Area Community College.

- Baldwin, H.Q., and Allain, L.K., 2017, Soil, geomorphology and pre-European settlement vegetation associations of Southwest Louisiana: U.S. Geological Survey data release, https://doi.org/10.5066/F7BC3X18.
- Barrow, W.C. Jr., C. Chen, R.B. Hamilton, K. Ouchley, and T.J. Spengler. 2000 Disruption and restoration of en route habitat, a case study: The Chenier Plain. In: F.R. Moore, editor. Stopover Ecology of Nearctic-neotropical Land Bird Migrants: Habitat relations and conversion implications. Studies in Avian Biology 20: 71-87.
- Barrow, W.C., Jr. and I. Renne. 2001. Interactions between migrant land birds and an invasive exotic plant: The Chinese Tallowtree Tree. Flyway 8:11.
- Barrow, W.C. Jr., L.A. Johnson Randall, M.S. Woodrey, J. Cox, E. Ruelas, I.C.M. Riley, R.B. Hamilton, and C. Eberly. 2005. Coastal Forests of the Gulf of Mexico: A Description and Some Thoughts on Their Conservation. USDA Forest Service General Technical Report PSW-GTR-191.
- Barrow, Jr., W.C. and B. Fontenot. 2006. Vanishing before our eyes: Louisiana Cheniere Woods and the birds that depend on them. The Barataria-Terrebonne National Estuary Program. Thibodeaux, Louisiana.
- Boyles, J. G., Cryan, P. M., McCracken, G. F. and Thomas H. Kunz. 2011. Economic Importance of Bats in Agriculture. Science: Vol. 332, pgs. 41-42.
- Coastal Protection and Restoration Authority of Louisiana. 2017. Louisiana's Comprehensive Master Plan for a Sustainable Coast. Coastal Protection and Restoration Authority of Louisiana. Baton Rouge, LA.
- Coastal Wetland Forest Science Working Group. 2005. Conservation, Protection and Utilization of Louisiana's Coastal Wetland Forests. A final report to the Governor of Louisiana from the Coastal Wetland Forest Science Working Group. April 30, 2005. 102 pp.
- Cornell University. 2015. All about birds. Accessed April 30, 2019. Web URL: https://www.allaboutbirds.org/.
- DeMay, R., R. Condrey, J. McBride, C. Brantley, and C. Riley. 2007. The Habitats of Barataria-Terrebonne Their Importance to Migratory and Resident Birds. BTNEP Educational Series. Barataria-Terrebonne National Estuary Program, Thibodaux, Louisiana. 72pp.

- Dittmann, D.L., S.W. Cardiff, and R. DeMay. 2010. Louisiana Raptors Birds of Prey. BTNEP Educational Series. Barataria-Terrebonne National Estuary Program, Thibodaux, Louisiana. 56pp.
- Gauthreaux, S. A. 1975. Coastal hiatus of spring trans-gulf bird migration. In:
 W. G. McIntire, M. J. Hershman, R. D. Adams, K. D. Midboe, and B. B. Barrett, editors. A rationale for determining Louisiana's coastal zone.
 Report No. 1, Coastal Zone Management Series. Baton Rouge, LA:
 Center for Wetland Resources, Louisiana State University; pgs. 85-91.
- Grace, J. B. 2000. Coastal prairie. USGS FS-019-00. Web URL: http://www. nwrc.gov (accessed March 2018).
- Gosselink, J.G., C.L. Cordes, and J.W. Parsons. 1979. An Ecological Characterization Study of the Chenier Plain Ecosystem of Texas and Louisiana. FWS/OBS-78/9 through 78/11. Washington, D.C. Office of Biological Services, Fish and Wildlife Service, U.S. Department of Interior.
- Jackson, J. L. and R. Kannan. 2018. Avian frugivory in a fruiting mulberry tree (Morus rubra) in Arkansas. J. Arkansas Acad. Sci. 72:38-46.
- Kelley, James R. Jr. and Rau, Rebecca D. 2006. "American Woodcock Population Status, 2006". US Fish & Wildlife Publications. Paper 424. Web URL: http://digitalcommons.unl.edu/usfwspubs/424.
- Lester G., S. Sorenson, P. Faulkner, C. Reid, and I. Maxit. 2005. Louisiana Comprehensive Wildlife Strategy (Wildlife Action Plan). Louisiana Department of Wildlife and Fisheries.
- Loeb, S. 2013. Conservation and Management of Declining Bat Populations in Eastern Forests. USDA, US Forest Service, Southern Research Station, North Carolina.
- Louisiana Department of Environmental Quality. 2012. Louisiana's Nonpoint Source Management Plan. Web URL: http://deq.louisiana.gov/ assets/ docs/Water/NPS_Management_Plan_1.pdf.
- Louisiana Department of Wildlife and Fisheries. 2015. Louisiana Wildlife Action Plan. Web URL: http://www.wlf.louisiana.gov/sites/default/ files/pdf/page_wildlife/33691-Wildlife%20Action%20Plan%20Details/la_ wap_pdf.pdf.
- Louisiana Department of Wildlife and Fisheries. 2005. Louisiana Comprehensive Wildlife Conservation Strategy. Web URL: http://www. wlf.louisiana.gov/sites/default/files/pdf/page_wildlife/32937- Wildlife% 20Action%20Plan/15-17_chapter_5_2017.pdf.

- Louisiana Natural Heritage Program. 2009. The Natural Communities of Louisiana. Web URL: http://www.wlf.louisiana.gov/sites/default /files/pdf/page_wildlife/6776-Rare%20Natural%20Communities /LA_NAT_COM.pdf. Accessed December 2015.
- Mausbach, M. J. 1992. Soil Survey Interpretations for Wet Soils. P. 172-178. In Eighth International Soil Correlations Meeting.
- Mississippi Museum of Natural Science. 2005. Mississippi's Comprehensive Wildlife Conservation Strategy. Mississippi Department of Wildlife, Fisheries and Parks, Mississippi Museum of Natural Science, Jackson, Mississippi.
- Natural Resources Conservation Service. 2017. Web Soil Survey. U.S. Department of Agriculture, Natural Resources Conservation Service, Soil Survey Staff. Accessed January 17, 2019. Web URL: http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm.
- Natural Resources Conservation Service. 2006. Soil Survey of Acadia Parish. United States Department of Agriculture. Available online at https://www.nrcs.usda.gov/wps/portal/nrcs/surveylist/soils/survey/state/?st ateId=LA.
- Pickens, B., S. L. King, B. Vermillion, L. Smith, and L. Allain. 2009. Conservation Planning for the Coastal Prairie Region of Louisiana. A final report from Louisiana State University to the Louisiana Department of Wildlife and Fisheries and the U.S. Fish and Wildlife Service in fulfillment of Agreement Nos. #644821/513-700205 (LDWF) and #201816N759 (USFWS).
- Ramsey III, E. W., G. A. Nelson, and S. K. Sapkota. 2001. Coastal change analysis program implemented in Louisiana. Journal of Coastal Research 17(1): 53-71.
- Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. 2017. Web Soil Survey. Available online at the following link: https://websoilsurvey.sc. egov. usda.gov/. Accessed 04/09/2019.
- Twedt, D. J., W. B. Uihlein III and A. B. Elliott. 2006. A Spatially Explicit Decision Support Model for Restoration of Forest Bird Habitat. Conservation Biology Volume 20, No. 1, 100–110.

- Twedt, D. J. and Best, C. 2004. Restoration of Floodplain Forests for the Conservation of Migratory Birds. Ecological Restoration Vol. 22, No. 3 pgs. 194-203.
- Twedt, D. J., R. R. Wilson, J. L. Henn-Kerr and R. B. Hamilton. 1999. Impact on forest type and management strategy on avian densities in the Mississippi Alluvial Valley, USA. Forest Ecology and Management 123, 261-274.
- U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (ver 2.0). ERDC/EL TR-10-20. U.S. Army Corps of Engineers, Environmental Laboratory, Vicksburg, MS, November 2010.
- U.S. Army Corps of Engineers. 1987. Corps of Engineers Wetland Delineation Manual. USACE Waterways Experiment Station Technical Report Y-87-1.
- U.S. Department of Agriculture, Soil Conservation Service. 2006. Soil Survey of Acadia Parish, Louisiana.
- U.S. Fish and Wildlife Service. 1990. American Woodcock Management Plan. U.S. Department of Interior, U.S. Fish and Wildlife Service.
- Vermillion, W. G., B. Eley, B. C. Wilson, S. A. Heath, and M. W. Parr. 2008. Gulf Coast Joint Venture Landbird Conservation Plan, Bird Conservation Region 37: Gulf Coast Prairie. 81 pp.

FIGURES

















Appendix A

Historical Aerial



SEP 1 1 1946



Appendix A-3



High Water mark resulting from August 2016 flood event throughout SW LA. Image was taken Feb. 1, 2017 near the southern boundary of the north tract (See Location map).



Appendix B

CEMVN Jurisdictional Determination



DEPARTMENT OF THE ARMY CORPS OF ENGINEERS, NEW ORLEANS DISTRICT 7400 LEAKE AVENUE NEW ORLEANS, LOUISIANA 70118-03651

September 25, 2017

Operations Division Surveillance and Enforcement Section

Mr. Paul M. Conn SEG Environmental, LLC 224 Rue De Jean Lafayette, Louisiana 70503

Dear Mr. Conn:

Reference is made to your request, on behalf of Desarmeaux & Le Petite Chateau De Luxe Properties, MAPHOL, for a U.S. Army Corps of Engineers' (Corps) jurisdictional determination on property located in multiple Sections, Townships, and Ranges, Acadia Parish, Louisiana (enclosed map). Specifically, this property is identified as 1,695 acres south of Mermentau Louisiana.

A field inspection of the property was conducted on August 16, 2017. Based on the results of this investigation and the information provided with your request, we have determined that part of the property is wetland and may be subject to Corps' jurisdiction. The approximate limits of the wetland are designated in red on the map. A Department of the Army (DA) permit under Section 404 of the Clean Water Act will be required prior to the deposition or redistribution of dredged or fill material into wetlands that are waters of the United States. Additionally, a DA permit will be required if you propose to deposit dredged or fill material into non-wetland waters subject to Corps' jurisdiction. Non-wetland waters that may be subject to Corps' jurisdiction are indicated in blue on the map. Furthermore, a portion of the wetland and non-wetland waters may be subject to Section 10 of the Rivers and Harbors Act (RHA). A DA permit will be required prior to any work in waters subject to Corps' jurisdiction under Section 10 of the RHA.

You and your client are advised that this preliminary jurisdictional determination is valid for a period of 5 years from the date of this letter unless new information warrants revision prior to the expiration date. Additionally, this determination is valid for the identified proposed project and is not to be used in decision-making for any other project.

This determination has been conducted to identify the limits of the Corps' Clean Water Act jurisdiction for the particular site identified in your request. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985, as amended. If the property owner or tenant is a USDA farm participant, or anticipates participation in USDA programs, a Natural Resources Conservation Service (NRCS) certified wetland determination should be requested from the local NRCS office prior to starting work.

Should there be any questions concerning these matters, please contact Ms. Christine Thibodeaux at (504) 862-2278 and reference our Account No. MVN-2017-00369-ST. If you have specific questions regarding the permit process or permit applications, please contact our Western Evaluation Section at (504) 862-2261.

Sincerely,



for Martin S. Mayer Chief, Regulatory Branch

Enclosures





















Appendix C

Appendix C Restoration Plan View (Permit Plats)





















ACADIA PARISH, LOUISIANA SECTIONS 21, 22, 23, 24, 25, 52, 61 & 62, TIOS-R2W										
			NOTES:							
	1. NORTH ARROW AND GRID COORDINATES REFER TO THE LOUISIANA STATE PLANE COORDINATE SYSTEM, SOUTH ZONE (NORTH AMERICAN DATUM OF 1983 (NAD 83)) BASED ON RTK GPS OBSERVATIONS									
	 ELEVATIONS ARE REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM (N.A.V.D. 88). BASED ON RTK GPS OBSERVATIONS. 									
 DISTANCES IN FEET BY HORIZONTIAL MEASURMENT. PARISH, SECTION, TOWNSHIP, AND RANGE SCALED FROM REFERENCED U.S.C & G.S. QUADRANGLES, JENNINGS & MERMENTAU, LA. 1994 										
	5. PROPOSED LEVEE DEGRADING LOCATIONS AND DIMENSIONS ARE APPROXIMATE BASED ON DATA PROVIDED BY SEG ENVIRONMENTAL									
			6. SURVEY PART	Y CHIEF: KEVIN	N PICHOFF,	JR.				
			7. DATE OF SURV	EY: NOVEMBE	R 20, 2017					
	8. PERMIT DRAWINGS AND/OR PLATS SHALL HAVE WRITTEN ON THEM THE DATE OF SAID ACTIVITIES AND SHALL BE SUBMITTED TO THE LOUISIANA DEPARTMENT OF NATURAL RESOURCES, OFFICE OF COASTAL MANAGEMENT, P.O. BOX 44487, BATON ROUGE, LA. 70804-4487.									
	9. IN ORDER TO ENSURE THE SAFETY OF ALL PARTIES, THE PERMITTEE SHALL CONTACT THE LOUISIANA ONE CALL SYSTEM (1-800-272-3020) A MINIMUM OF 48 HOURS PRIOR TO THE COMMENCEMENT OF ANY EXCAVATION (DIGGING, DREDGING, JETTING, ETC.) OR DEMOLITION ACTIVITY.									
	SUMMARY OF CONSTRUCTION FOUNDMENT									
				DESC	CRIPTION				QUANTITY	
			BULL DOZIER						1	
	TOTAL CU. YDS. NATIVE MATERIAL (DEGRADING LEVEES) REQ'D. = 15,749 TOTAL CU. YDS. NATIVE MATERIAL (30' WIDE GAPS) REQ'D. = 738 TOTAL PROJECT CU. YDS. OF NATIVE MATERIAL REQ'D. = 16,487 TOTAL ACRES (DEGRADING LEVEES) (NON-WET) REQ'D. = 20.92									
NOTE: THESE ACQUIS NOT R PLANS DATA NOT R *	NOTE: THESE DRAWINGS WERE PREPARED SOLELY FOR ACQUISITION OF REGULATORY PERMITS AND DO NOT REPRESENT ENGINEERING OR CONSTRUCTION PLANS. PROPERTY LINES SHOWN ARE FROM COMPILED DATA ACQUIRED FROM ASSESSOR RECORDS AND DO NOT REPRESENT A BOUNDARY SURVEY. * SEE SHEET 11 OF 11 FOR GENERAL NOTES AND REFERENCES.									
			AGENT: SEG			IG ONLY	Y	M	ERMENTAU M BANK,	ITIGATION LLC
) [™]	ENVIRONMENTAL FOR CONSTR		RUCTION, BIDDING, RECORDATION, CONVEYANCE OR SALES JOEL J. MILLER A LICENSE NO. 29638		F	PERMIT APPLICATION FOR PROPOSED MITIGATION AREA		
	DATF	sociates, inc.	DESCRIPTION	L		CHKD	APPD	l G		NOTES
1	4/10/19	то ѕном	REVISED MITIGATION	AREAS	REK	JJM	JJM			
0	1/9/18		ISSUED DRAWINGS		REK	JJM	JJM	M.E. &	A. DWG. NO. 142	14, SHEET 11 OF 11