NOT AN INSTRUMENT PROJECT

Mitigation Plan

Black Gum Creek Wetland Restoration Site

DMS Project Number 97063

Robeson County, North Carolina

Lumber River Basin

Cataloging Unit 03040203

Prepared for:

NC Department of Environmental Quality

Division of Mitigation Services

1652 Mail Service Center

Raleigh, NC 27699

Draft January 2016

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EXECUTIVE SUMMARY

The Black Gum Creek Project (project) is a wetland rehabilitation and preservation project being constructed for the NC Division of Mitigation Services (DMS). The Project site is a former agricultural field in the Lumber River Basin, 8-digit HUC 03040203, in northwest Robeson County. The project is located approximately 6 miles north of Maxton, off Modest Rd.

The site has been cleared and ditched to facilitate agriculture. The site offers an opportunity to rehabilitate remaining wetlands on-site and preserve existing forested wetlands.

The Lumber River Basin Restoration Priorities state that the goals for the Black Gum Creek 14-digit HUC are:

- Replacing buffer
- Repairing channelized streams
- Preservation of existing resources.

Additional goals for the project include:

- Restoring a hardwood flat vegetation community
- Expanding forested wetland complex

These project goals will be addressed through the following objectives

- Plant native tree/shrub species
- Preserve existing hardwood flat/pocosin wetlands

The project site will be monitored for five years for vegetative and hydrology success.

Black Gum Creek Site, Robeson County #97063						
Mitigation Credits						
	Stream		Riparian Wetland		Non-Riparian Wetland	
Type	R	RE	R	RE	R	RE
Acres	-	-	-	-	9.9	77.0
Ratio	-	-	-	-	1.5	10.0
Credits	-	-	-	-	6.6	7.7
Total Credits	-	-	-	-	**6.6**	7.7

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1.0 RESTORATION PROJECT GOALS AND OBJECTIVES

DMS develops River Basin Restoration Priorities to guide its restoration activities within each of the 54 cataloging units. RBRPs delineate specific watersheds that exhibit both need and opportunity for stream, wetland and riparian buffer restoration. These watersheds are called Targeted Local Watersheds (TLWs) and receive priority for DMS planning and restoration project funds.

The project site is located in Lumber River Basin in the 14-digit HUC 03040203020010, Lumber River watershed. This watershed has been designated a Targeted Local Watershed by DMS in the 2008 Lumber River Basin Restoration Priorities (RBRP). The watershed is characterized by 50% forested and 41% agricultural area.

The Lumber River Basin Restoration Priorities state the goals for the Black Gum Creek 14-digit HUC are:

- Replacing buffer
- Repairing channelized streams
- Preservation of existing resources.

Additional goals for the project include:

- Restoring a hardwood flat vegetation community
- Expanding forested wetland complex

The project goals will be addressed through the following objectives

- Plant native tree/shrub species
- Preserve existing hardwood flat forested wetland

2.0 SITE SELECTION

2.1 Directions

- From Raleigh (79° 19’ 49” W, 34° 49’ 9” N)
- Take I-95 S to exit 41, NC-59
- Turn right onto NC-59 N
- After 0.7 mile turn left onto Shipman Rd
- After 1.0 mile turn right on US 301-S
- After 2.4 miles turn right onto NC-71 S
- After 6.6 miles turn right onto NC 20/W Main St.
- After 5.8 miles turn left onto N Old Wire Rd
- After 11.0 miles continue onto Modest Rd

- After 1.6 miles turn right onto Winston Rd

2.2 Site Selection

The site is part of the 03040203 USGS Catalog Unit located in the Lumber River Basin. The Lumber River Basin straddles the border of North and South Carolina and is populated with small municipalities with the exception of Lumberton. The populations within the site are stable and land use is predominantly forests and agriculture.

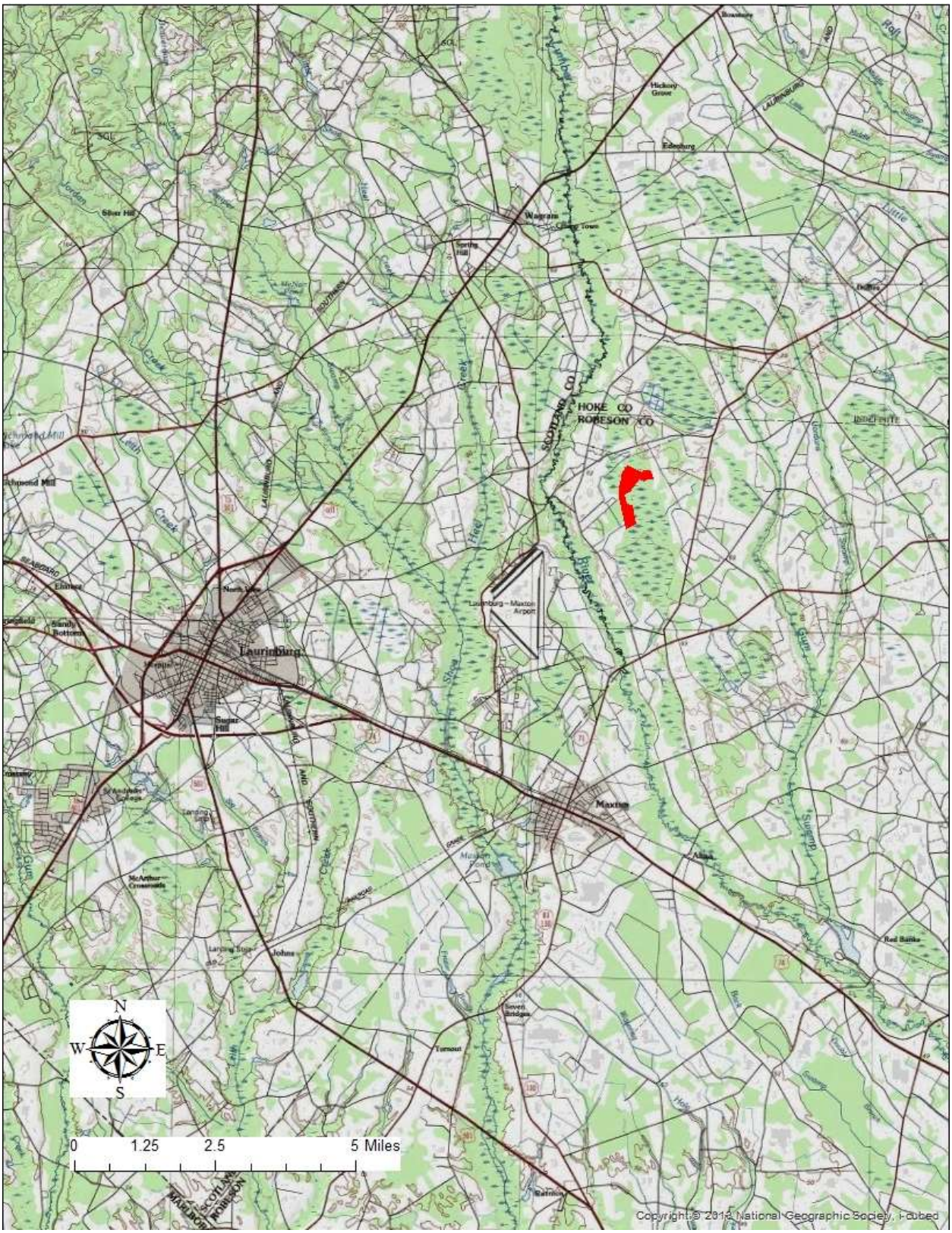
The project site is surrounded by forested areas and agricultural parcels. The nearest access is from Modest Rd near Maxton, NC. The site is located on an interstream divide between the Lumber River and Black Gum Swamp. The site has been altered since the mid-80s. Areas have been ditched and former wetlands were cleared. The existing site conditions are shown in Section 2.6. The site has some areas exhibiting wetland hydrology and soils but are lacking in hydrophytic vegetation, labeled Hydric Soils in Section 2.6. The project site is characterized as being a non-riparian wetland area, see letter from DWQ in Appendix B.

Historic aerials, found in Section 2.7, were examined for any information about changes to hydrology and vegetation. The historical aerials were obtained from USGS Earth Explorer for 1950, 1976, 1981 and 1987. The site was cleared and ditched between 1981 and 1987 and has been in agricultural production since it was cleared.

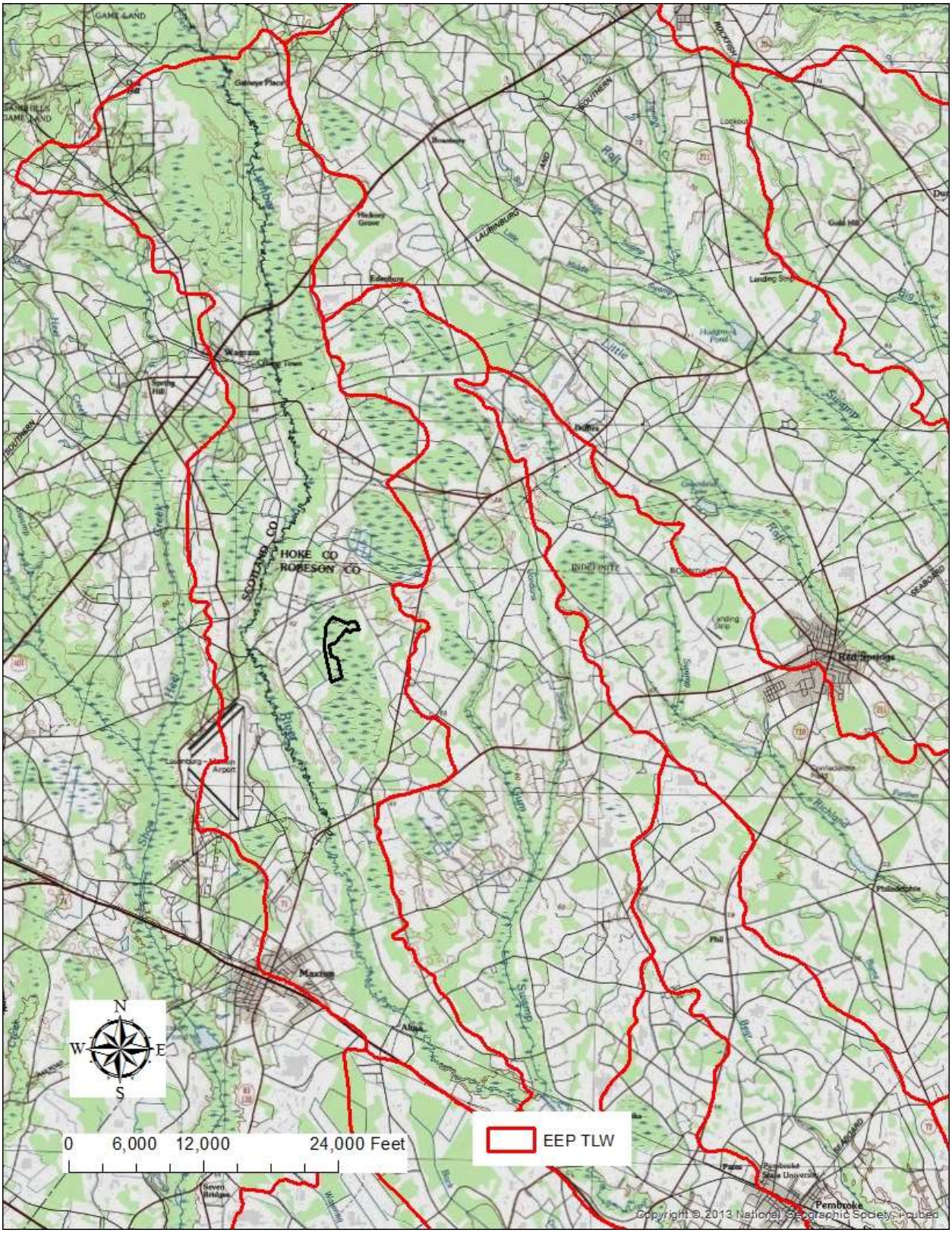
The majority of the site lies within the Atlantic Southern Loam Plains (Level IV 65l) ecoregion of the Atlantic Coastal Plain physiographic region. A very small portion on the western edge is categorized as Southeastern Floodplains and Low Terrace (Level IV 65p).

An in depth soil investigation was completed in February 2014 by a licensed soil scientist, documenting the soils and hydrology on-site. A report can be found Appendix C. The soils within the wetland reestablishment areas are mainly Plummer, Rains and Rutlege. The soils in the preservation areas are Plummer and Rutlege.

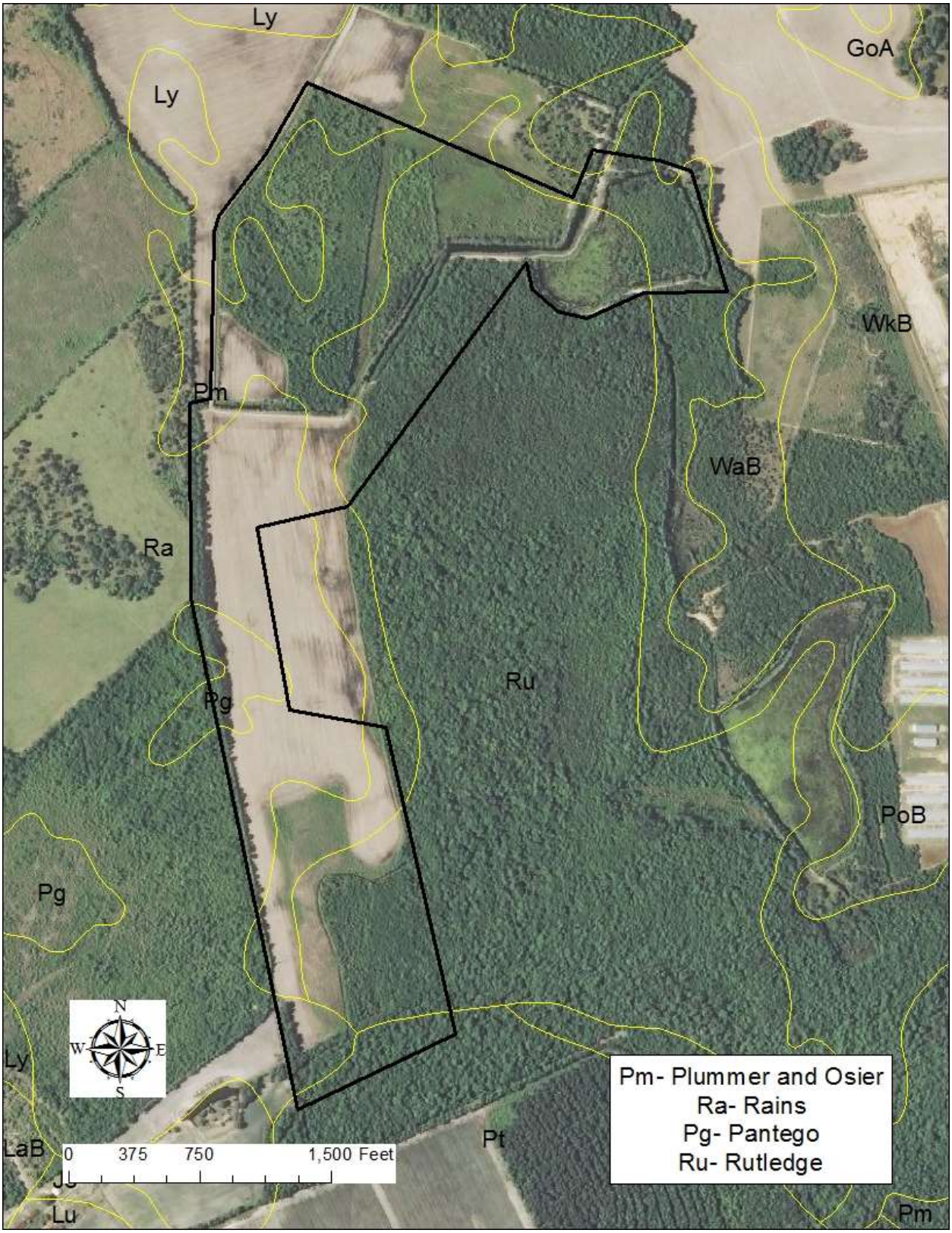
2.3 Vicinity Map



2.4 Watershed Map



2.5 Soils Map


Ly
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GoA
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Pm
WaB
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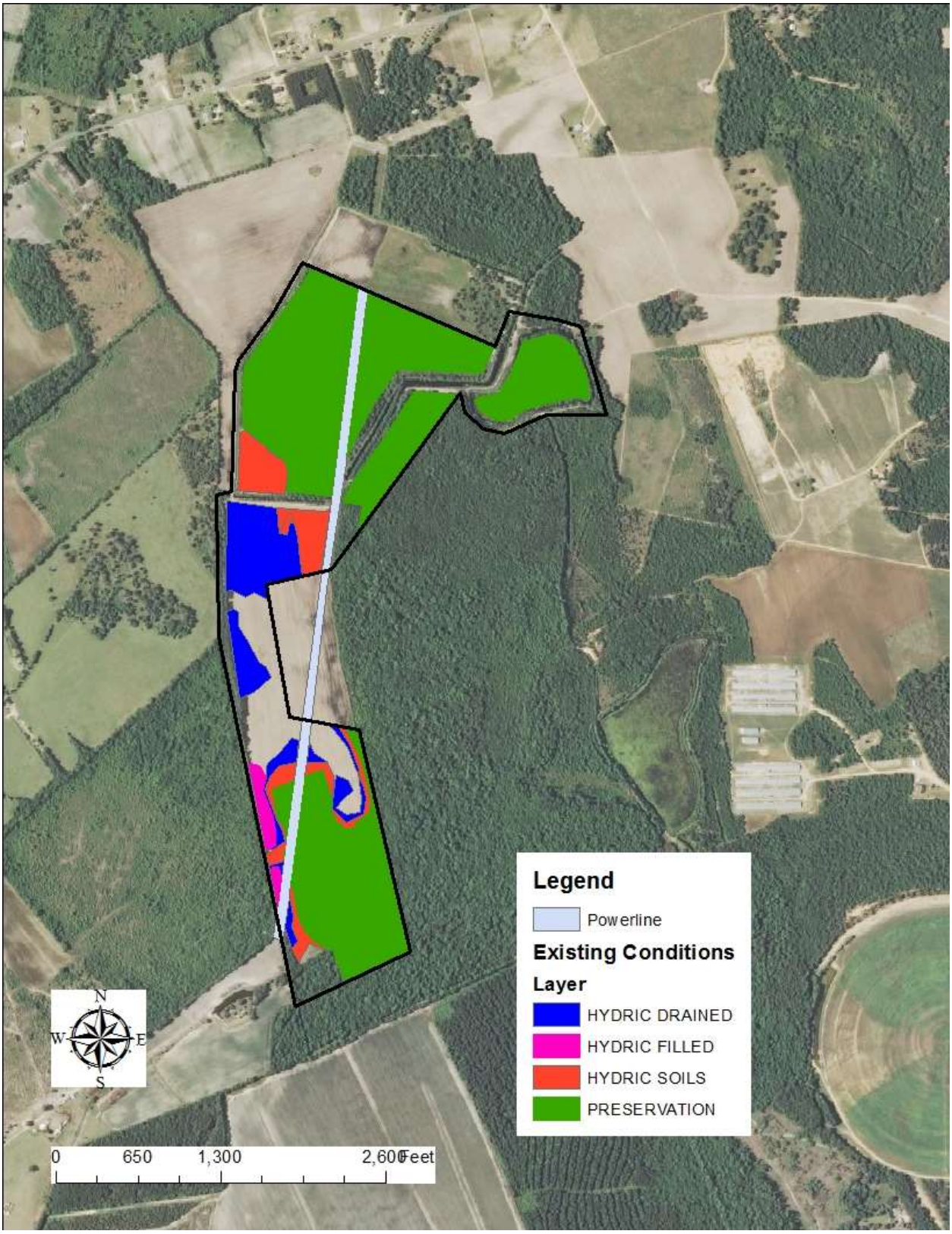
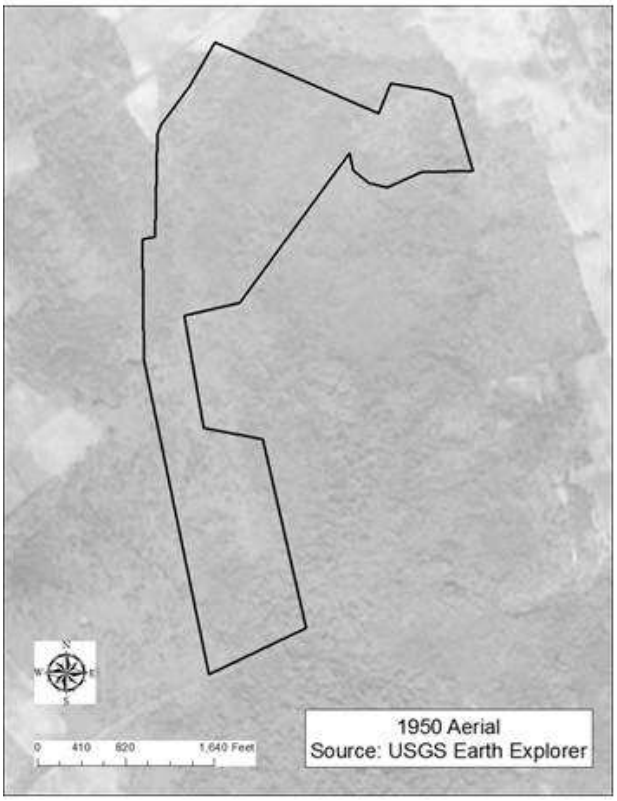
Ru
Pg
PoB
Pg
Ly
LaB
Lu
Pt
Pm
N
W
E
S
0 375 750 1,500 Feet
Pm- Plummer and Osier
Ra- Rains
Pg- Pantego
Ru- Rutledge

2.6 Existing Conditions

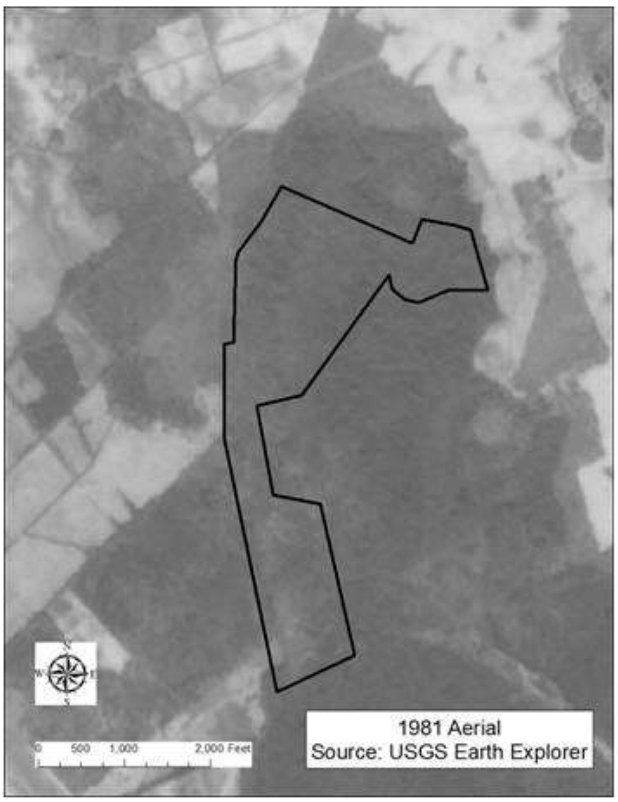


2.7 Historical Aerials

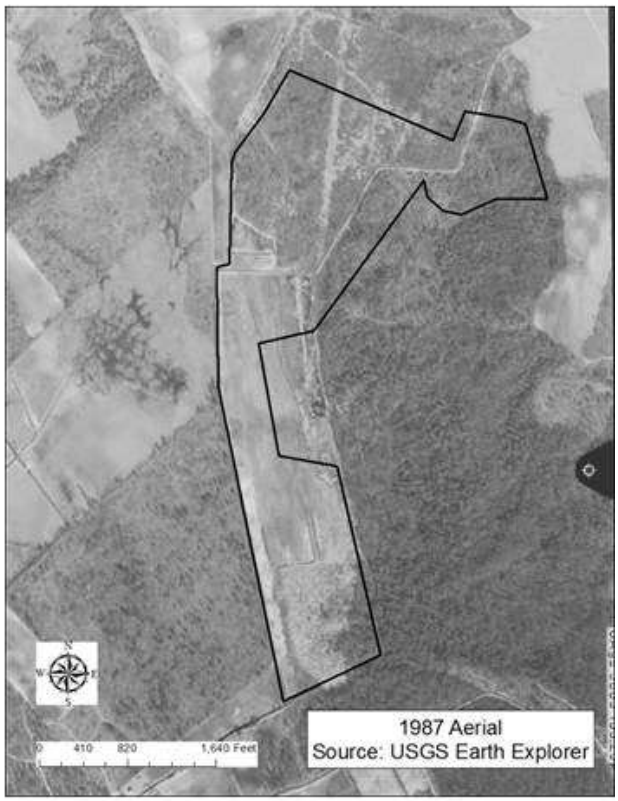


1950 Aerial
Source: USGS Earth Explorer

1976 Aerial
Source: USGS Earth Explorer



1981 Aerial
Source: USGS Earth Explorer



1987 Aerial
Source: USGS Earth Explorer

2.8 Site Photographs

Date 3/5/2014 Looking South

Date 3/5/2014 Looking East near successional area

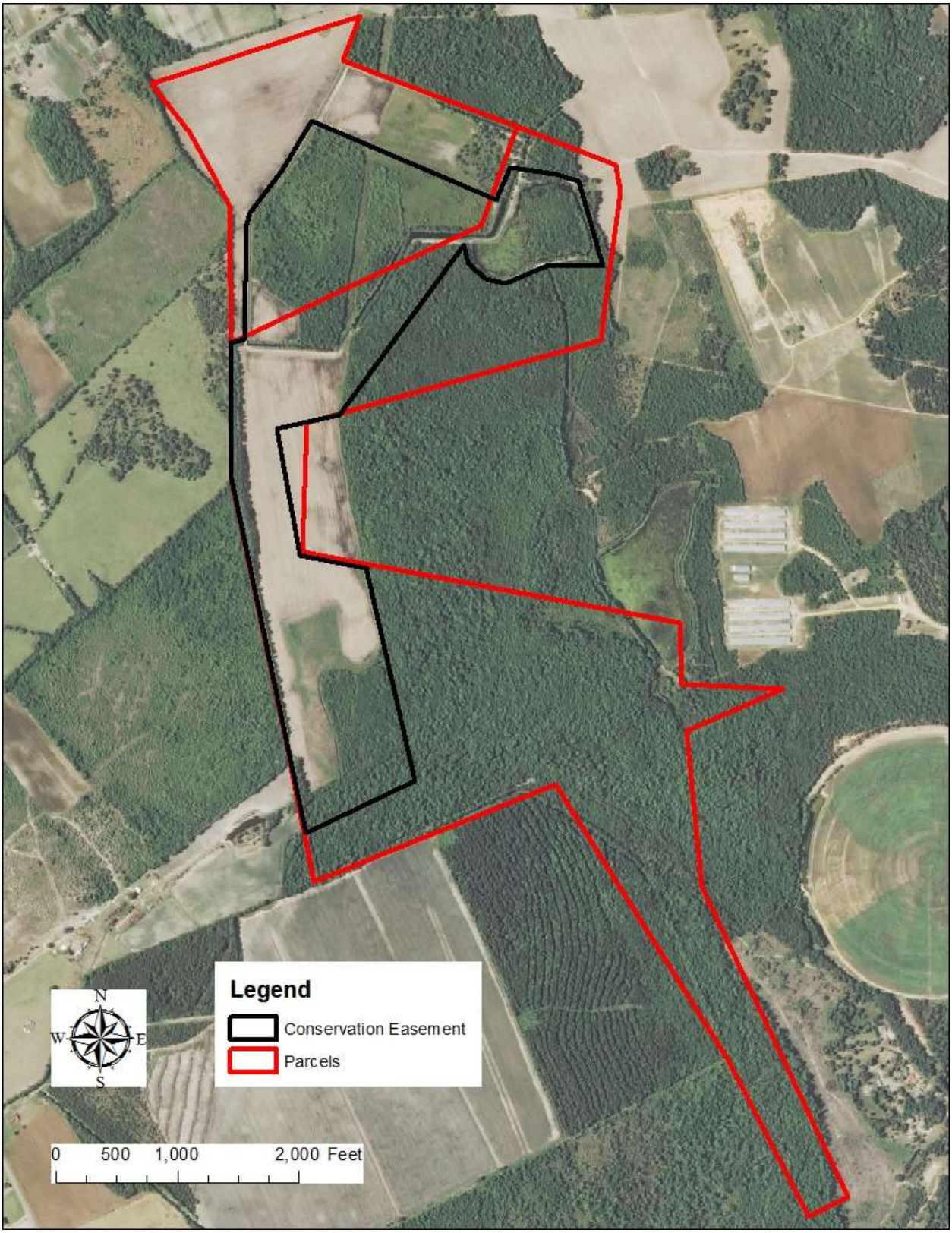
3.0 SITE PROTECTION INSTRUMENT

3.1 Site Protection Instrument Summary Information

The land required for construction, management and stewardship of the mitigation project includes the following parcels. The conservation easement document was finalized in February 2006.

	Landowners	County	Site Protection Instrument	Deed Book and Page Number	Acreage Protected
Parcel A	C.R. & Shirley Creech	Robeson	Conservation Easement	DB 1518 PG 1-9	147.47

3.2 Site Protection Instrument



4.0 BASELINE INFORMATION

Project Information			
Project Name	Black Gum Creek		
County	Robeson		
Project Area (acres)	147.47		
Project Coordinates (lat. & long.)	79°19'44" W 34°49'12" N		
Project Watershed Summary Information			
Physiographic Province	Coastal Plain		
River Basin	Lumber		
USGS Hydrologic Unit 8-Digit	3040203	**USGS Hydrologic Unit 14-Digit**	03040203020010
DWR Sub-basin	03-07-51		
Project Drainage Area (ac)	N/A		
Project Drainage Area % Impervious	<1%		
CGIA Land Use Classification	50% Forested, 41% Agriculture		
Existing Wetland Summary Information			
Parameters	**1**	**2**	**3**
Size of Wetland (acres)	9.9	10	67
Wetland Type	Non-riparian	Non-riparian	Non-riparian
Mapped Soil Series	Rains & Plummer/ Osier	Plummer/Osier & Rutledge	Rutledge
Drainage Class	Poorly & Very Poorly Drained	Very Poorly Drained	Very Poorly Drained
Soil Hydric Status	Hydric	Hydric	Hydric
Source of Hydrology	Precipitation	Precipitation	Precipitation
Hydrologic Impairment	None	None	None
Existing Vegetation	Crops	Successional	Forested
Percent composition of exotic invasive vegetation	0%	0%	0%
Regulatory Considerations			
Regulation	**Applicable**	**Resolved**	**Supporting Documentation**
Waters of the U.S. Section 404	Yes	Yes	Jurisdictional Determination
Waters of the U.S. Section 401	Yes	Yes	Jurisdictional Determination
Endangered Species Act	N/A	N/A	N/A
Historic Preservation Act	N/A	N/A	N/A

Coastal Zone Management Act (CZMA)/ Coastal Area Management Act (CAMA)	N/A	N/A	N/A
FEMA Floodplain Compliance	N/A	N/A	N/A
Essential Fisheries Habitat	N/A	N/A	N/A

4.1 Watershed Summary Information

The site is part of the 03040203 USGS Cataloging Unit located with the Lumber River Basin (Lumber River Watershed). The Lumber River Basin straddles the border of North and South Carolina. The populations of the counties within the watershed are stable and land use is predominately agricultural. The surrounding areas are not likely to be developed in the near future.

The site is classified as non-riparian and is on an interstream divide between the Lumber River to the west and Gum Swamp to the east. The surrounding areas are mainly agricultural fields with very little impervious surface.

4.2 Wetland Summary Information

There are approximately 9.9 acres with wetland hydrology and hydric soils, but lack wetland vegetation. This area is being used for agricultural purposes. There are two jurisdictional wetlands, 10 acres of a successional wetland and forested hardwood flat. The vegetation composition of the successional wetland is *Liquidambar styraciflua, Acer rubrum, Rubus spp., Diospyros virginiana* and *Rhus spp*. There is another forested hardwood flat/pocosin, 67.0 acres, located along the eastern and northern portions of the conservation easement. The vegetation is comprised of *Magnolia virginana, Acer rubrum, Liriodendron tulipifera, Pinus taeda* and *Nyssa bilfora*. All of the on-site wetlands have hydrology driven by rainwater and are not subject to overland flooding.

4.3 Regulatory Considerations

A jurisdictional determination was approved by the US Army Corps of Engineers on January 6, 2016. Once the jurisdictional boundaries of the wetlands were determined and formalized through the jurisdictional determination process, the potential of restoring functions of the existing wetland areas using the definitions of “rehabilitation” and ‘reestablishment” provided in 40 CFR Part 230(Final Rule).

There a no permits required for this project because it is planting only, there are no land disturbing activities.

5.0 DETERMINATION OF CREDITS

Black Gum Creek, Robeson County
DMS Project # 97063

Mitigation Credits

	Stream		Riparian Wetland		Non-riparian Wetland		Buffer	Nitrogen Nutrient Offset	Phosphorous Nutrient Offset
Type	R	RE	R	RE	R	RE			
Linear Feet/Acres					9.9	77			
Total Credits	-	-	-	-	6.6	7.7			

Project Components

Project Component -or- Reach ID	Stationing/ Location	Existing Footage/Acreage	Approach (PI, PII etc.)	Restoration -or- Restoration Equivalent	Restoration Footage or Acreage	Mitigation Ratio
Wetland 1	-	9.9	-	R	9.9	1.5
Wetland 2	-	10.0	-	RE	10.0	10
Wetland 3	-	67.0	-	RE	67.0	10

Component Summation

Restoration Level	Stream (linear feet)	Riparian Wetland (acres)		Non-riparian Wetland (acres)	Buffer (square feet)	Upland (acres)
		Riverine	Non-Riverine			
Restoration	-	-	-	9.9	-	-
Enhancement		-	-	-	-	-
Enhancement I	-					
Enhancement II	-					
Creation		-	-	-		
Preservation	-	-	-	77.0		-
High Quality Preservation	-	-	-	-		-

R=Restoration, RE= Restoration Equivalent

6.0 MITIGATION PLAN WORK

6.1 Target Wetland Types and Plant Communities

The areas exhibiting wetland hydrology and soils will be planted with species from the Hardwood Flat Forest Community (NCWAM, v. 4.1 2010) as well as other similar species found in the adjacent forested wetland. The planting plan will consist of some of the following:

Acer rubrum

Fraxinus pennsylvanica

Platanus occidentalis

Nyssa biflora

Quercus michauxii

Quercus nigra

Quercus lyrata

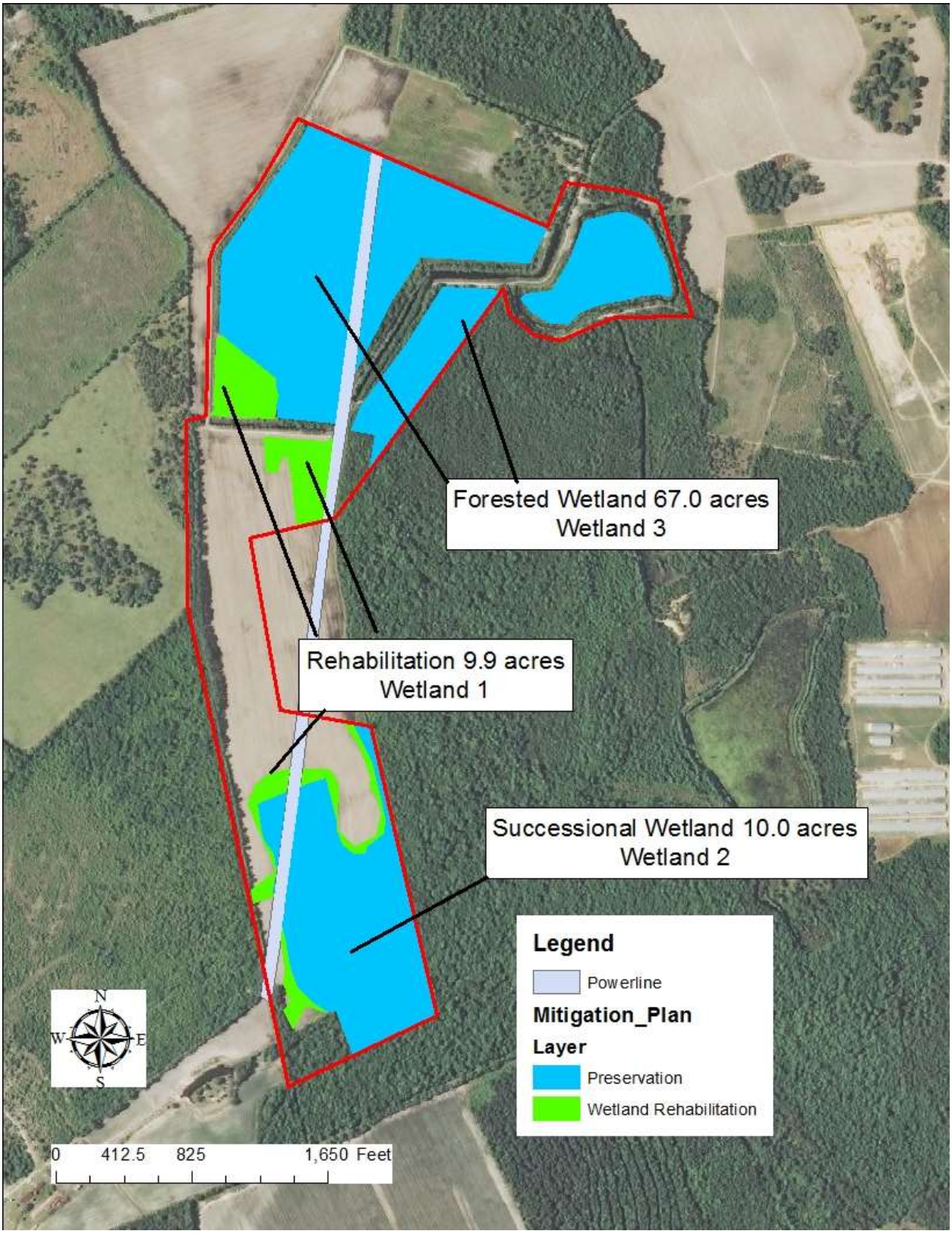
Ulmus americana

An herbaceous seed mix will not be applied due to lack of ground disturbance. The site will be planted to a density that will have a trajectory for success at the end of 5 years.

6.2 Design Parameters

The site will be planted with a selection of species from the planting list to ensure a trajectory towards success at the end of 5 years of monitoring. The site will be maintained for invasive species including Chinese privet (Ligustrum sinense) and other common invasive species to the area to allow native species to flourish.

6.3 Proposed Mitigation Plan View



7.0 MAINTENANCE PLAN

NCDMS shall monitor the site on a regular basis and shall conduct a physical inspection of the site a minimum of once per year throughout the post-construction monitoring period until performance standards are met. These site inspections may identify site components and features that require routine maintenance. Routine maintenance should be expected most often in the first two years following site construction and may include the following:

Wetland	Routine wetland maintenance and repair activities may include supplemental installations of target vegetation within the wetland. Areas where stormwater and floodplain flows intercept the wetland may also require maintenance to prevent scour.
Vegetation	Vegetation shall be maintained to ensure the health and vigor of the targeted plant community. Routine vegetation maintenance and repair activities may include supplemental planting, pruning, mulching, and fertilizing. Exotic invasive plant species shall be controlled by mechanical and/or chemical methods. Any vegetation control requiring herbicide application will be performed in accordance with NC Department of Agriculture (NCDA) rules and regulations.
Site Boundary	Site boundaries shall be identified in the field to ensure clear distinction between the mitigation site and adjacent properties. Boundaries may be identified by fence, marker, bollard, post, tree-blazing, or other means as allowed by site conditions and/or conservation easement. Boundary markers disturbed, damaged, or destroyed will be repaired and/or replaced on an as needed basis.

Additionally, a powerline easement runs across the project site but, there is no credit accounted for in the footprint.

8.0 PERFORMANCE STANDARDS

Vegetation

An average density of 260 stems/acre must be surviving after five years of monitoring. The post construction As-built will outline monitoring features. Stem counts will be conducted in the vegetation plots, which will be placed randomly after the site has been planted.

Hydrology

Wetland hydrology monitoring will be conducted to ensure the jurisdictional wetlands are meeting 8% wetland hydrology. The site will present continuous saturated or inundated hydrologic conditions for at least 8% of the growing season during normal weather conditions. A "normal" year is based on NRCS climatological data for Robeson County, using the 30th to 70th percentile thresholds as the range of normal. The growing season for Robeson County, using the 50% chance of higher than 28 F method, is from March 22th through November 5th, 228 days (WETS Table, Robeson County).

Hydrologic performance will be determined through evaluation of automatic recording gauge data supplemented by documentation of wetland hydrology indicators as defined in the 1987 USACE Delineation Manual, daily data will be collected from automatic wells over the 5-year monitoring period. These data will determine if the wetland meets the hydrology success criteria of the water table being within 12 inches of the ground surface continuously for greater than 8% of the growing season.

9.0 MONITORING REQUIREMENTS

Annual monitoring data will be reported using the DMS monitoring template. The monitoring report shall provide a project data chronology that will facilitate an understanding of project status and trends, population of DMS databases for analysis, research purposes, and assist in decision making regarding project close-out.

Required	Parameter	Quantity	Frequency	Notes
Yes	Groundwater Hydrology	Quantity and location of gauges will be determined in consultation with DMS	annual	Groundwater monitoring gauges with data recording devices will be installed on site; the data will be downloaded on a quarterly basis
Yes	Vegetation	Quantity and location of vegetation plots will be determined in consultation with DMS	Monitoring Years 1, 2,3,4,5	Vegetation will be monitored using the Carolina Vegetation Survey (CVS) protocols
	Exotic and nuisance vegetation		Semi-annual	Locations of exotic and nuisance vegetation will be mapped
	Project boundary		Semi-annual	Mapping of fence damage, vegetation damage, boundary encroachments

The first scheduled vegetation monitoring will be conducted during the first full growing season following project completion. Monitoring will occur in years 1, 2, 3, 4 and 5. The survivability of the vegetation plantings will be evaluated using a $100m^2$ vegetative sampling plots randomly placed in the planted areas.

Groundwater elevations will be monitored to evaluate jurisdictional wetland hydrology. Verification of wetland hydrology will be determined by automatic recording of well data collected within the project area.

Permanent photographic reference points will be established to assist in characterizing each site and to allow qualitative evaluation of site conditions. The location of each photo point will be marked in the monitoring plan and the bearing/orientation of the photograph will be documented.

Annual monitoring reports will be prepared and submitted after all monitoring tasks for each year are completed. The report will document the monitored components and include all collected data and photographs. Each report will provide the new monitoring data and compare the most recent results against previous findings. The monitoring report format will be similar to that set out in the most recent DMS monitoring protocol.

10.0 LONG TERM MANAGEMENT PLAN

Upon approval for close-out by the Interagency Review Team (IRT) the site will be transferred to a third party for long term management as described in DMS's In Lieu Fee Instrument. This party shall be responsible for periodic inspection of the site to ensure that restrictions required in the conservation easement or the deed restriction document (s) are upheld. Endowment funds required to uphold easement and deed restrictions shall be negotiated prior to site transfer to the responsible party.

11.0 ADAPTIVE MANAGEMENT PLAN

Upon completion of site construction DMS will implement the post-construction monitoring protocols previously defined in this document. Project maintenance will be performed as described previously in this document. If, during the course of annual monitoring it is determined the site's ability to achieve site performance standards are jeopardized, DMS will notify the USACE of the need to develop a Plan of Corrective Action. The Plan of Corrective Action may be prepared using in-house technical staff or may require engineering and consulting services. Once the Corrective Action Plan is prepared and finalized DMS will:

1. Revise performance standards, maintenance requirements, and monitoring requirements as necessary and/or required by the USACE.
2. Obtain other permits as necessary.
3. Implement the Corrective Action Plan.
4. Provide the USACE a Record Drawing of Corrective Actions. This document shall depict the extent and nature of the work performed.

12.0 FINANCIAL ASSURANCES

Pursuant to Section IV H and Appendix III of the Division of Mitigation Services' In-Lieu Fee Instrument dated July 28, 2010, the North Carolina Department of Environment and Natural Resources has provided the U.S. Army Corps of Engineers Wilmington District with a formal commitment to fund projects to satisfy mitigation requirements assumed by DMS. This commitment provides financial assurance for all mitigation projects implemented by the program.

13.0 OTHER INFORMATION

13.1 Definitions

8-digit Catalog Unit (CU) - The USGS developed a hydrologic coding system to delineate the country into uniquely identified watersheds that can be commonly referenced and mapped. North Carolina has 54 of these watersheds.

14-digit Hydrologic Unit (UC) - In order to address watershed management issues at a smaller scale, the U.S. Natural Resources Conservation Service (NRCS) developed a methodology to delineate and uniquely identify watersheds at a scale smaller than the 8-digit catalog unit. A hydrologic unit is a drainage area delineated to nest in a multilevel, hierarchical drainage system. Its boundaries are defined by hydrographic and topographic criteria that delineate an area of land upstream from specific point of a river, stream or similar surface waters. North Carolina has 1,601 14-digit HUs.

RBRP - The River Basin Restoration Priorities are documents that delineate specific watersheds (TLWs) within a river basin that exhibit both the need and opportunity for wetland, stream and riparian buffer restoration.

TLW - Target Local Watersheds, are 14-digit hydrologic units which receive priority for DMS planning and restoration project funds

13.2 References

40 CFR Part 230. 2008. Compensatory Mitigation for Losses of Aquatic Resources; Final Rule. Office of the Federal Registry, Washington, DC. Pp.19594-19705.

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

NCDENR, Division of Mitigation Services. 2008. Lumber River Basin Restoration Priority 2008. Raleigh, NC. Last accessed 9/2014 at: http://portal.ncdenr.org/c/document_library/get_file?uuid=717199f1-8604-4487-bd2b-e076bd5a9612&groupId=60329

NC Wetland Functional Assessment Team. 2010. NC Wetland Assessment Method (NC WAM) User Manual, version 4.1. Last accessed 9/2014 at:

http://portal.ncdenr.org/c/document_library/get_file?uuid=76f3c58b-dab8-4960-ba43-45b7faf06f4c&groupId=38364

USDA, Natural Resources Conservation Service, Water and Climate Center. 2007. WETS Table for Robeson County, North Carolina. Last accessed 9/2014 at: http://agacis.rcc-acis.org/37155/wets

Appendix A

Site Protection Instrument

2006001805

ROBESON CO, NC FEE $38.00
STATE OF NC REAL ESTATE EXTX
$885.00
PRESENTED & RECORDED:
02-14-2006 01:15:31 PM
VICKI L LOCKLEAR
REGISTER OF DEEDS
BY: FRANKIE BRITT
ASSISTANT
BK:D 1518
PG:1-9

EXCISE TAX $885.00

STATE OF NORTH CAROLINA

HOLD: RAMSAUR & McLEAN, PROFESSIONAL ASSOCIATION

ROBESON COUNTY **CONSERVATION EASEMENT**

SPO File Number: 78-AAC

Prepared by: Office of the Attorney General
Property Control Section
Return to: Blane Rice, State Property Office
1321 Mail Service Center
Raleigh, NC 27699-1321

THIS CONSERVATION EASEMENT DEED, made this 7th day of February, 2006, by C. R. Creech and wife, Shirley Creech, ("**Grantors**"), to the State of North Carolina, ("**Grantee**"), whose mailing address is State of North Carolina, Department of Administration, State Property Office, 1321 Mail Service Center, Raleigh, NC 27699-1321. The designations Grantors and Grantee as used herein shall include said parties, their heirs, successors, and assigns, and shall include singular, plural, masculine, feminine, or neuter as required by context.

WITNESSETH:

WHEREAS, pursuant to the provisions of N.C. Gen. Stat. § 143-214.8 et seq., the State of North Carolina has established the Ecosystem Enhancement Program (formerly known as the Wetlands Restoration Program) within the Department of Environment and Natural Resources for the purposes of acquiring, maintaining, restoring, enhancing, creating and preserving wetland and riparian resources that contribute to the protection and improvement of water quality, flood prevention, fisheries, aquatic habitat, wildlife habitat, and recreational opportunities; and

WHEREAS, The State of North Carolina is qualified to be the Grantee of a Conservation Easement pursuant to N.C. Gen. Stat. § 121-35; and

WHEREAS, the Ecosystem Enhancement Program in the Department of Environment and Natural Resources has approved acceptance of this instrument; and

WHEREAS, the Department of Environment and Natural Resources, the North Carolina Department of Transportation and the United States Army Corps of Engineers, Wilmington District entered into a Memorandum of Agreement, (MOA) duly executed by all parties in Greensboro, NC on July 22, 2003. This MOA recognizes that the Ecosystem Enhancement Program is to provide for compensatory mitigation by effective protection of the land, water and natural resources of the State by restoring, enhancing and preserving ecosystem functions; and

WHEREAS, the acceptance of this instrument for and on behalf of the State of North Carolina was granted to the Department of Administration by resolution as approved by the Governor and Council of State adopted at a meeting held in the City of Raleigh, North Carolina, on the 8th day of February 2000; and

WHEREAS, Grantors own in fee simple certain real property situated, lying, and being in Smiths Township, Robeson County, North Carolina (the "**Property**"), and being more particularly described as that certain parcel of land containing approximately 300 acres and being conveyed to the Grantors by deed as recorded in **Deed Book 948 at Page 0130** of the Robeson County Registry, North Carolina; and

WHEREAS, Grantors are willing to grant a Conservation Easement over the herein described areas of the Property, thereby restricting and limiting the use of the included areas of the Property to the terms and conditions and purposes hereinafter set forth, and Grantee is willing to accept such Conservation Easement. This Conservation Easement shall be for the protection and benefit of the waters of the Lumber River watershed.

NOW, THEREFORE, in consideration of the mutual covenants, terms, conditions, and restrictions hereinafter set forth, Grantors unconditionally and irrevocably hereby grant and convey unto Grantee, its successors and assigns, forever and in perpetuity, a Conservation Easement of the nature and character and to the extent hereinafter set forth, over a described area of the Property, referred to hereafter as the "**Easement Area**", for the benefit of the people of North Carolina, and being all of the tract of land as identified as 147.47 ac. +/- as shown on a plat survey entitled "Conservation Easement Survey for the State of North Carolina Ecosystem Enhancement Program – Black Gum Project" revised November 4, 2005, certified by Phillip B. Culbreth, P.L.S. The 147.47 acre tract is more particularly described as follows:

See attached SCHEDULE A.

The purposes of this Conservation Easement are to maintain, restore, enhance, create and preserve wetland and/or riparian resources in the Easement Area that contribute to the protection and improvement of water quality, flood prevention, fisheries, aquatic habitat, wildlife habitat, and recreational opportunities; to maintain permanently the Easement Area in its natural condition, consistent with these purposes; and to prevent any use of the Easement Area that will significantly impair or interfere with these purposes. To achieve these purposes, the following conditions and restrictions are set forth:

I. DURATION OF EASEMENT

This Conservation Easement shall be perpetual. It is an easement in gross, runs with the land, and is enforceable by Grantee against Grantors, their personal representatives, heirs, successors, and assigns, lessees, agents, and licensees.

II. GRANTORS RESERVED USES AND RESTRICTED ACTIVITES

The Easement Area shall be restricted from any development or usage that would impair or interfere with the purposes of this Conservation Easement. Unless expressly reserved as a compatible use herein, any activity in, or use of, the Easement Area by the Grantors is prohibited as inconsistent with the purposes of this Conservation Easement. Any rights not expressly reserved hereunder by the Grantors have been acquired by the Grantee. The following specific uses are prohibited, restricted, or reserved as indicated:

A. Recreational Uses. Grantors expressly reserve the right to undeveloped recreational uses, including hiking, bird watching, hunting and fishing, and access to the Easement Area for the purposes thereof. Usage of motorized vehicles in the Easement Area is prohibited, except as they are used exclusively for management, maintenance, or stewardship purposes, and on existing trails, paths or roads.

B. Educational Uses. The Grantors reserve the right to engage in and permit others to engage in educational uses in the Easement Area not inconsistent with this Conservation Easement, and the right of access to the Easement Area for such purposes including organized educational activities such as site visits and observations. Educational uses of the property shall not alter vegetation, hydrology or topography of the site.

C. Vegetative Cutting. Except as related to the removal of non-native plants, diseased or damaged trees, and vegetation that obstructs, destabilizes or renders unsafe the Easement Area to persons or natural habitat, all cutting, removal, mowing, harming, or destruction of any trees and vegetation in the Easement Area is prohibited.

D. Industrial, Residential and Commercial Uses. All are prohibited in the Easement Area.

E. Agricultural Use. All agricultural uses within the Easement Area including any use for cropland, waste lagoons, or pastureland are prohibited.

F. New Construction. There shall be no building, facility, mobile home, antenna, utility pole, tower, or other structure constructed or placed in the Easement Area.

G. Roads and Trails. There shall be no construction of roads, trails, walkways, or paving in the Easement Area. Existing roads or trails located in the Easement Area may be maintained by Grantors in order to minimize runoff, sedimentation and for access to the interior of the Property for management, maintenance, stewardship purposes, or undeveloped recreational and educational uses of the Easement Area. Existing roads, trails or paths may be maintained with loose gravel or permanent vegetation to stabilize or cover the surfaces.

H. Signs. No signs shall be permitted in the Easement Area except interpretive signs describing restoration activities and the conservation values of the Easement Area, signs identifying the owner of the Property and the holder of the Conservation Easement, signs giving directions, or signs prescribing rules and regulations for the use of the Easement Area may be allowed.

I. Dumping or Storing. Dumping or storage of soil, trash, ashes, garbage, waste, abandoned vehicles, appliances or machinery, or other material in the Easement Area is prohibited.

J. Grading, Mineral Use, Excavation, Dredging. There shall be no grading, filling, excavation, dredging, mining, or drilling; no removal of topsoil, sand, gravel, rock, peat, minerals, or other materials.

K. Water Quality and Drainage Patterns. There shall be no diking, draining, dredging, channeling, filling, leveling, pumping, impounding or diverting, causing, allowing or permitting the diversion of surface or underground water. No altering or tampering with water control structures or devices, or disruption or alteration of the restored, enhanced, or created drainage patterns. All removal of wetlands, polluting or discharging into waters, springs, seeps, or wetlands, or use of pesticide or biocides is prohibited. In the event of an emergency interruption or shortage of all other water sources, water from within the Easement Area may temporarily be used for good cause shown as needed for the survival of livestock and agricultural production.

L. Subdivision and Conveyance. No further subdivision, partitioning, or dividing of the Easement Area is allowed. Unless agreed to by the Grantee in writing, any future conveyance of the Easement Area and the rights as conveyed herein shall be as a single block of property. Any future conveyance of the remaining fee simple rights shall be subject to this Conservation Easement. Grantors agree for itself, its successors and assigns, that in the event it transfers the Property, or any portion thereof, such transfer is subject to the Grantee's right of ingress, egress, and regress over and across the Property to the Easement Area for the purposes set forth herein.

M. Development Rights. All development rights are removed from the Easement Area and shall not be transferred.

N. Disturbance of Natural Features. Any change, disturbance, alteration or impairment of the natural features of the Easement Area or any intentional introduction of nonnative plants, trees and/or animal species by Grantors is prohibited.

The Grantors may request permission to vary from the above restrictions for good cause shown, provided that any such request is consistent with the purposes of this Conservation Easement. The Grantors shall not vary from the above restrictions without first obtaining written approval from the N.C. Ecosystem Enhancement Program, whose mailing address is 1652 Mail Services Center, Raleigh, NC 27699-1652.

III. GRANTEE RESERVED USES

A. Ingress, Egress, Regress and Inspection. The Grantee, its employees and agents, successors and assigns, receive the perpetual right of general ingress, egress, and regress to the Easement Area over the Property at reasonable times to undertake any activities to restore, manage, maintain, enhance, and monitor the wetland and riparian resources of the Easement Area, in accordance with restoration activities or a long-term management plan. Unless otherwise specifically set forth in this Conservation Easement, the rights granted herein do not include or establish for the public any access rights.

B. Restoration Activities. These activities include planting of trees, shrubs and herbaceous vegetation, installation of monitoring wells, utilization of heavy equipment to grade, fill, and prepare the soil, modification of the hydrology of the site, and installation of natural and manmade materials as needed to direct in-stream, above ground, and subterraneous water flow.

IV. ENFORCEMENT AND REMEDIES

A. Enforcement. To accomplish the purposes of this Conservation Easement, Grantee is allowed to prevent any activity within the Easement Area that is inconsistent with the purposes of this Easement and to require the restoration of such areas or features of the Easement Area that may have been damaged by such activity or use. Upon any breach of the terms of this Conservation Easement by Grantors, their successors or assigns, that comes to the attention of the Grantee, the Grantee shall, except as provided below, notify the Grantors, their successors or assigns in writing of such breach. The Grantors shall have ninety (90) days after receipt of such notice to correct the conditions constituting such breach. If the breach remains uncured after ninety (90) days, the Grantee may enforce this Conservation Easement by appropriate legal proceedings including damages, injunctive and other relief. The Grantee shall also have the power and authority, consistent with its statutory authority: (a) to prevent any impairment of the Easement Area by acts which may be unlawful or in violation of this Conservation Easement; (b) to otherwise preserve or protect its interest in the Property; or (c) to seek damages from any appropriate person or entity. Notwithstanding the foregoing, the Grantee reserves the immediate right, without notice,

to obtain a temporary restraining order, injunctive or other appropriate relief if the breach of the term of this Conservation Easement is or would irreversibly or otherwise materially impair the benefits to be derived from this Conservation Easement. The Grantors and Grantee acknowledge that under such circumstances damage to the Grantee would be irreparable and remedies at law will be inadequate. The rights and remedies of the Grantee provided hereunder shall be in addition to, and not in lieu of, all other rights and remedies available to Grantee in connection with this Conservation Easement.

B. Inspection. The Grantee, its employees and agents, successors and assigns, have the right, with reasonable notice, to enter the Easement Area over the Property at reasonable times for the purpose of inspection to determine whether the Grantors, their successors or assigns are complying with the terms, conditions and restrictions of this Conservation Easement.

C. Acts Beyond Grantors' Control. Nothing contained in this Conservation Easement shall be construed to entitle Grantee to bring any action against Grantors, their successors or assigns, for any injury or change in the Easement Area caused by third parties, resulting from causes beyond the Grantors' control, including, without limitation, fire, flood, storm, and earth movement, or from any prudent action taken in good faith by the Grantors under emergency conditions to prevent, abate, or mitigate significant injury to life, damage to property or harm to the Property resulting from such causes.

D. Costs of Enforcement. Beyond regular and typical monitoring, any costs incurred by Grantee in enforcing the terms of this Conservation Easement against Grantors, their successors or assigns, including, without limitation, any costs of restoration necessitated by Grantors' acts or omissions in violation of the terms of this Conservation Easement, shall be borne by Grantors.

E. No Waiver. Enforcement of this Easement shall be at the discretion of the Grantee and any forbearance, delay or omission by Grantee to exercise its rights hereunder in the event of any breach of any term set forth herein shall not be construed to be a waiver by Grantee.

V. MISCELLANEOUS

A. This instrument sets forth the entire agreement of the parties with respect to the Conservation Easement and supersedes all prior discussions, negotiations, understandings or agreements relating to the Conservation Easement. If any provision is found to be invalid, the remainder of the provisions of the Conservation Easement, and the application of such provision to persons or circumstances other than those as to which it is found to be invalid, shall not be affected thereby.

B. Any notices shall be sent by registered or certified mail, return receipt requested to the parties at their addresses shown above or to other address(es) as either party establishes in writing upon notification to the other.

C. Grantors shall notify Grantee in writing of the name and address and any party to whom the Property or any part thereof is to be transferred at or prior to the time said transfer is made. Grantors further agree to make any subsequent lease, deed, or other legal instrument by which any interest in the Property is conveyed subject to the Conservation Easement herein created.

D. The Grantors and Grantee agree that the terms of this Conservation Easement shall survive any merger of the fee and easement interests in the Property or any portion thereof.

E. This Conservation Easement may be amended, but only in a writing signed by all parties hereto, and provided such amendment does not affect the qualification of this Conservation Easement or the status of the Grantee under any applicable laws, and is consistent with the purposes of the Conservation Easement.

F. The parties recognize and agree that the benefits of this Conservation Easement are in gross and assignable provided, however, that the Grantee hereby covenants and agrees, that in the event it transfers or assigns this Conservation Easement, the organization receiving the interest will be a qualified holder under N.C. Gen. Stat. § 121-34 et seq. and § 170(h) of the Internal Revenue Code, and the Grantee further covenants and agrees that the terms of the transfer or assignment will be such that the transferee or assignee will be required to continue in perpetuity the conservation purposes described in this document.

VI. QUIET ENJOYMENT

Grantors reserve all remaining rights accruing from ownership of the Property, including the right to engage in or permit or invite others to engage in only those uses of the Easement Area that are expressly reserved herein, not prohibited or restricted herein, and are not inconsistent with the purposes of this Conservation Easement. Without limiting the generality of the foregoing, the Grantors expressly reserve to the Grantors, and the Grantors' invitees and licensees, the right of access to the Easement Area, and the right of quiet enjoyment of the Easement Area.

TO HAVE AND TO HOLD the said rights and easements perpetually unto the State of North Carolina for the aforesaid purposes.

AND Grantors covenant that Grantors are seized of said premises in fee and have the right to convey the permanent Conservation Easement herein granted; that the same are free from encumbrances and that Grantors will warrant and defend title to the same against the claims of all persons whomsoever.

IN TESTIMONY WHEREOF, the Grantors have hereunto set their hands and seals, the day and year first above written.

C. R. Creech (SEAL)
C. R. Creech

Shirley Creech (SEAL)
Shirley Creech

SCHEDULE A

First Tract

Lying and being in Smiths Township, Robeson County, North Carolina, on the south side of but not adjacent to Secondary Road No. 1310, on the west side of but not adjacent to Secondary Road No. 1313, Bounded on the north and south by other lands of C.R. Creech, on the east by C.R. Creech, Darryl Locklear, and Rose L. McNeil, on the west by lands now or formerly owned by William Steed, David Tolar, Kathy McKay and more particularly described as follows to wit:

Beginning at an iron stake in the western line of the original tract of which this is a part, said point of beginning being North 11 degrees 46 minutes 55 seconds West 406.92 feet from the southwest corner of the original tract of which this is a part, and running thence as a line of Thomas Stanton to and with the line of the land now or formerly owned by William Steed, thence North 11 degrees 46 minutes 55 seconds West for a distance of 2978.30 feet to a concrete monument, a corner of said Steed land, thence North 00 degrees 32 minutes 31 seconds West for a distance of 1115.03 feet to a concrete monument, an original corner, thence North 76 degrees 54 minutes 32 seconds East for a distance of 120.80 feet to a rebar set, a new corner, thence North 01 degree 16 minutes 50 seconds East for a distance of 945.47 feet to a rebar set, thence North 17 degrees 56 minutes 11 seconds East for a distance of 98.02 feet to a rebar set, thence North 36 degrees 47 minutes 26 seconds East for a distance of 446.05 feet to a rebar set, thence North 30 degrees 23 minutes 27 seconds East for a distance of 469.79 feet to a rebar set, thence South 66 degrees 37 minutes 45 seconds East for a distance of 1653.04 feet to a rebar set, thence North 22 degrees 04 minutes 00 seconds East for a distance of 294.54 feet to a rebar set, thence South 80 degrees 53 minutes 59 seconds East for a distance of 384.85 feet to a rebar set, thence South 71 degrees 58 minutes 50 seconds East for a distance of 194.20 feet to a rebar set, thence South 16 degrees 27 minutes 51 seconds East for a distance of 720.65 feet to a rebar set, thence South 89 degrees 26 minutes 29 seconds West for a distance of 475.03 feet to a rebar set, thence South 66 degrees 20 minutes 36 seconds West for a distance of 357.83 feet to a rebar set, thence North 77 degrees 18 minutes 36 seconds West for a distance of 170.38 feet to a rebar set, thence North 49 degrees 36 minutes 02 seconds West for a distance of 189.49 feet to a rebar set, thence North 13 degrees 15 minutes 21 seconds West for a distance of 161.89 feet to a rebar set, thence South 36 degrees 12 minutes 56 seconds West for a distance of 1724.20 feet to a rebar in the line of Darryl Locklear (Deed Book 797 at Page 29, Robeson County Registry), thence South 76 degrees 51 minutes 16 seconds West for a distance of 530.36 feet to an iron stake, a corner of said Locklear land, thence South 10 degrees 10 minutes 23 seconds East for a distance of 1056.00 feet to a one inch pipe, a corner of Rose L. McNeil, thence South 79 degrees 32 minutes 52 seconds East for a distance of 557.19 feet to a rebar set, thence South 12 degrees 53 minutes 08 seconds East for a distance of 1797.44 feet to a rebar set, thence South 64 degrees 32 minutes 43 seconds West for a distance of 998.79 feet to the point or place of beginning.

Together with and subject to covenants, easements, and restrictions of record.

Said property contains 147.47 acres, more or less.

Second Tract

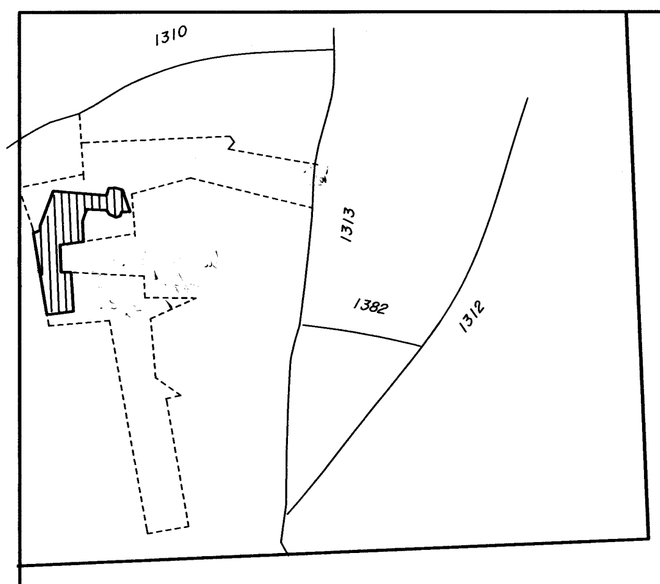
The non-exclusive right to use an easement for ingress, egress and regress from State Road 1313 to the First Tract described above which easement is more particularly described in a deed from Purvis Land & Timber, LLC to C.R. Creech and wife, Shirley Creech dated April 10, 1997 and recorded in the Robeson County Registry in Book of Deeds 948 at Page 0130, and said easement being further described in a deed of easement from Addie Mae Locklear, widow, et al to Purvis Land & Timber, LLC dated April 3, 1996 and recorded in Book 901 at Page 0574, Robeson County Registry. This easement is designated as Easement A on a map prepared by Phillip B. Culbreth, P. L. S., dated October, 2005 as revised on November 4, 2005, December 11, 2005, December 21, 2005, January 6, 2006 and January 12, 2006. Said map being recorded in the Robeson County Registry in Book of Maps 42 at Page 42. Nothing herein shall preclude the Grantors, their heirs and assigns, from using this easement for ingress, egress and regress.

Third Tract

The non-exclusive right to use an easement for ingress, egress and regress 50 feet in width which commences at the western end of the Second Tract above and runs 50 feet from and parallel to the following call: North 68 degrees 53 minutes 46 seconds West 435.26 feet to an iron rod marking a corner of the First Tract described above. This easement is shown as Easement B on a map prepared by Phillip B. Culbreth, P. L. S., dated October, 2005 as revised on November 4, 2005, December 11, 2005, December 21, 2005, January 6, 2006 and January 12, 2006. Said map being recorded in the Robeson County Registry in Book of Maps 42 at Page 42. Nothing herein shall preclude the Grantors, their heirs and assigns, from using this easement for ingress, egress and regress.

The Grantors reserve for themselves, their successors, heirs and assigns an easement for ingress, egress and regress, which easement is shown as "proposed 45' easement" on a map prepared by Phillip B. Culbreth, P. L. S., dated October, 2005 as revised on November 4, 2005, December 11, 2005, December 21, 2005, January 6, 2006 and January 12, 2006. Said map being recorded in the Robeson County Registry in Book of Maps 42 at Page 42.

C R Creech
S C



I, PHILLIP B. CULBRETH, CERTIFY THAT THIS PLAT WAS DRAWN UNDER MY SUPERVISION FROM AN AN ACTUAL SURVEY MADE UNDER MY SUPERVISION; THAT THE BOUNDARIES NOT SURVEYED ARE CLEARLY INDICATED AS DRAWN FROM INFORMATION FOUND IN DEED BOOK 948 PG. 130 DEED BOOK 1028 PG. 728, DEED BOOK 1113 PG. 597 ;THAT THE RATIO OF PRECISION AS CALCULATED IS 1:10,000+ THAT THIS PLAT WAS PREPARED IN ACCORDANCE TO G.S. 47-30 AS AMENDED. WITNESS MY ORIGINAL SIGNATURE, REGISTRATION NUMBER AND SEAL THIS 4th DAY OF NOVEMBER, A.D., 2005

PHILLIP B. CULBRETH, P.L.S.
427 PINELOG ROAD
LUMBERTON, N.C. 28360
TEL. 910-738-7015
N.C. REG. NO. L-2662
S.C. REG. NO. 9179

NORTH CAROLINA PROFESSIONAL SEAL L-2662 LAND SURVEYOR PHILLIP B. CULBRETH

I, Brenda S. Fairley REVIEW OFFICER OF ROBESON COUNTY, CERTIFY THAT THE MAP OR PLAT ON WHICH THIS CERTIFICATION IS AFFIXED MEETS ALL STATUTORY REQUIREMENTS FOR RECORDING.

Brenda S. Fairley
REVIEW OFFICER 2/2/2006

REBAR AT ALL CORNERS EXCEPT AS NOTED

A: THAT THE SURVEY CREATES A SUBDIVISION OF LAND WITHIN THE AREA OF A COUNTY OR MUNICIPALITY THAT HAS AN ORDINANCE THAT REGULATES PARCELS OF LAND:

B: THAT THE SURVEY IS LOCATED IN SUCH PORTON OF A COUNTY OR MUNICIPALITY THAT IS UNREGULATED AS TO AN ORDINANCE THAT REGULATES PARCELS OF LAND;

C: THAT THE SURVEY IS OF AN EXISTING PARCEL OR PARCELS OF LAND AND DOES NOT CREATE A NEW STREET OR CHANGE AN EXISTING STREET, THAT THE SURVEY IS OF AN EXISTING BUILDING OR STRUCTURE. OR NATURAL FEATURE SUCH AS A WATER COURSE OR THAT THE SURVEY IS A CONTROL SURVEY.

D: THAT THE SURVEY OF OF ANOTHER CATEGORY SUCH AS THE RECOMBINATION OF EXISTING PARCELS, A COURT ORDERED SURVEY, OR OTHER EXCEPTION TO THE DEFINITION OF SUBDIVISION

E: THAT THE INFORMATION AVAILIBLE TO THE SURVEYOR IS SUCH THAT THE SURVEYOR IS UNABLE TO MAKE A DETERMINATION TO THE BEST OF THE SURVEYOR'S PROFESSIONAL ABILITY AS TO PROVISIONS CONTAINED IN ITEMS A THROUGH D ABOVE.

ARTICLE V, SECTION 501, PARAGRAPH ,
ROBESON COUNTY SUBDIVISION ORDINANCE

42

SR 1310
60' PUBLIC RIGHT OF WAY

50' PRIVATE EASEMENT
DEED BOOK 1139 PG. 465
N 18°50'48"W 689.00'

1"IP. FD.

CONTROL
NAD 83
N= 391354.2354
E= 1900819.28157
N 56°22'03"E 469.54'
TO MONUMENT "LEAR"
N= 393714.0025
E= 1897271.9237

C.R. CREECH

AMY NICHOLE BRYANT
DEED BOOK 882 PG. 298

NOW OR FORMERLY
KATHY McKAY

S 66°37'45"E 1653.04'
459.79'
N 30°23'27"E
N 36°47'26"E
446.05'
N 17°56'11"E
98.02'
N 01°16'50"E 945.47'
CON. MON. FD.
120.80'
N 76°54'32"E
N 00°32'31"W 1115.03'
CON. MON. FD.

147.47 AC. +/-

CAROLINA POWER AND LIGHT CO. EASEMENT
70 FEET IN WIDTH
DEED BOOK 496, PAGES 28,27-C,26-C

NORTH NAD 83

DAVID TOLAR
DEED BOOK 1011 PG. 386

CONTROL
NW CORNER
DEED BOOK 768 PG. 130
IRON PIPE FOUND

PROPOSED 50' EASEMENT
N 22°04'00"E 294.54'
S 80°53'59"E 384.85'
S 71°58'50"E 194.20'
N 68°53'46"W 435.26'
S 16°27'51"E 720.65'
S 80°43'00"W 1990.88'
(THIRD TRACT) EASEMENT B
(SECOND TRACT) EASEMENT A
2880.80'
N 67°15'45"W
NOT TO SCALE
50' PRIVATE EASEMENT
NOT TO SCALE
DEED BOOK 948 PAGE 130
ALSO DB 901, PG. 574
IRON ROD FOUND

HUGHS MAC LOCKLEAR
DEED BOOK 768 PG. 208

DEBORAH DIAL
DEED BOOK 768 PG. 198

SR 1313
60' PUBLIC RIGHT OF WAY

L9
L10
L8
L7
L6
L5
L4
L3
L2
L1
L11
L12
L14
L15
L16
L17
proposed 45' easement
N 49°36'02"W 188.49'
N 77°18'36"W 170.38'
S 66°20'36"W 357.83'
S 89°26'29"W 475.03'
N 13°15'21"W 161.89'
S 36°12'56"W 1724.20'
S 76°51'16"W 530.36'
S 10°10'23"E 1056.00'
S 79°32'52"E 557.19'
N 11°46'55"W 2978.30'
S 12°53'08"E 1797.44'
S 64°32'43"W 998.79'
406.92'

C.R. CREECH

DARRYL LOCKLEAR
DEED BOOK 797 PG. 29

ROSE L. McNEIL
DEED BOOK 768 PG. 200

FORMERLY
WILLIAM STEED
DEED BOOK 1239 PG. 763

THOMAS STANTON
DEED BOOK 16-B PG. 127

CON. MON. FD.

CENTER LINE
TRAVERSE TABLE
PROPOSED 45' EASEMENT

L1	N 68°21'35"W 206.86'	L9	N 88°25'15"W 484.62'
L2	S 79°24'20"W 354.76'	L10	S 22°16'55"W 181.77'
L3	S 71°03'13"W 67.46'	L11	S 32°11'50"W 623.53'
L4	S 56°10'53"W 92.15'	L12	S 25°46'14"W 430.85'
L5	S 63°50'35"W 128.59'		
L6	N 78°29'04"W 156.29'	L14	S 02°06'44"W 342.28'
L7	N 50°33'46"W 176.02'	L15	S 76°49'44"W 529.05'
L8	N 06°04'37"W 185.40'	L16	S 10°10'23"E 1092.44'
		L17	S 79°32'52"E 583.68'

2006001362
ROBESON CO, NC FEE $21.00
PRESENTED & RECORDED:
02-03-2006 08:18:49 AM
VICKI L LOCKLEAR
REGISTER OF DEEDS
BY: FRANKIE BRITT
ASSISTANT
BK:M 42
PG:42-42

LEGAL DESCRIPTION

Lying and being in Smiths Township, Robeson County, North Carolina, on the south side of but not adjacent to Secondary Road No. 1310, on the west side of but not adjacent to Secondary Road No. 1313, Bounded on the north and south by other lands of C.R. Creech, on the east by C.R. Creech, Darryl Locklear, and Rose L. McNeil, on the west by lands now or formerly owned by William Steed, David Tolar, Kathy McKay and more particularly described as follows to wit;

Beginning at an iron stake in the western line of the original tract of which this is a part, said point of beginning being North 11 degrees 46 min. 55 sec. West 406.92 feet from the southwest corner of the original tract of which this is a part, and running thence as a line of Thomas Stanton to and with the line of the land now or formerly owned by William Steed

THENCE North 11 degrees 46 minutes 55 seconds West for a distance of 2978.30 feet to a concrete monument a corner of said Steed land,
THENCE North 00 degrees 32 minutes 31 seconds West for a distance of 1115.03 feet to a concrete monument an original corner,
THENCE North 76 degrees 54 minutes 32 seconds East for a distance of 120.80 feet to a rebar set, a new corner
THENCE North 01 degrees 16 minutes 50 seconds East for a distance of 945.47 feet to a rebar set
THENCE North 17 degrees 56 minutes 11 seconds East for a distance of 98.02 feet to a REBAR SET;
THENCE North 36 degrees 47 minutes 26 seconds East for a distance of 446.05 feet to a REBAR SET;
THENCE North 30 degrees 23 minutes 27 seconds East for a distance of 469.79 feet to a REBAR SET;
THENCE South 66 degrees 37 minutes 45 seconds East for a distance of 1653.04 feet to a REBAR SET;
THENCE North 22 degrees 04 minutes 00 seconds East for a distance of 294.54 feet to a REBAR SET;
THENCE South 80 degrees 53 minutes 59 seconds East for a distance of 384.85 feet to a REBAR SET;
THENCE South 71 degrees 58 minutes 50 seconds East for a distance of 194.20 feet to a REBAR SET;
THENCE South 16 degrees 27 minutes 51 seconds East for a distance of 720.65 feet to a rebar set
THENCE South 89 degrees 26 minutes 29 seconds West for a distance of 475.03 feet to a REBAR SET;
THENCE South 66 degrees 20 minutes 36 seconds West for a distance of 357.83 feet to a rebar set;
THENCE North 77 degrees 18 minutes 36 seconds West for a distance of 170.38 feet to a rebar set;
THENCE North 49 degrees 36 minutes 02 seconds West for a distance of 189.49 feet to a rebar set
THENCE North 13 degrees 15 minutes 21 seconds West for a distance of 161.89 feet to a rebar set;
THENCE South 36 degrees 12 minutes 56 seconds West for a distance of 1724.20 feet to a rebar in the line of Darryl Locklear (Deed Book 797,page 29),
THENCE South 76 degrees 51 minutes 16 seconds West for a distance of 530.36 feet to an iron stake a corner of said Locklear land,
THENCE South 10 degrees 10 minutes 23 seconds East for a distance of 1056.00 feet to a one inch pipe a corner of Rose L. McNeil,
THENCE South 79 degrees 32 minutes 52 seconds East for a distance of 557.19 feet to a rebar set;
THENCE South 12 degrees 53 minutes 08 seconds East for a distance of 1797.44 feet to a rebar set
THENCE South 64 degrees 32 minutes 43 seconds West for a distance of 998.79 feet to the point or place of beginning

Together with and subject to covenants, easements, and restrictions of record.

Said property contains 147.47 acres more or less.

Second Tract

An easement for ingress, egress and regress from State Road 1313 to the First Tract described above which easement is more particularly described in a deed from Purvis Land & Timber, LLC to C.R. Creech and wife, Shirley Creech dated April 10, 1997 and recorded in the Robeson County Registry in Book of Deeds 948 at Page 0130, and said easement being further described in a deed of easement from Addie Mae Locklear, widow, et al to Purvis Land & Timber, LLC dated April 3, 1996 and recorded in Book 901 at Page 0574, Robeson County Registry. This easement is designated as Easement A on a map prepared by Phillip B. Culbreth, P. L. S., dated October, 2005 as revised on November 4, 2005, December 11, 2005 and December 21, 2005. Said map being recorded in the Robeson County Registry in Book of Maps ____ at Page _____.

Third Tract

An easement for ingress, egress and regress 50 feet in width which commences at the western end of the Second Tract above and runs 50 feet from and parallel to the the following call of North 68 degrees 53 minutes 46 seconds West 435.26 feet to an iron rod marking a corner of the First Tract described above. This easement is shown as Easement B on a map prepared by Phillip B. Culbreth, P. L. S., dated October, 2005 as revised on November 4, 2005, December 11, 2005 and December 21, 2005. Said map being recorded in the Robeson County Registry in Book of Maps ____ at Page _____.

The Grantors reserve for themselves, their successors, heirs and assigns an easement for ingress, egress and regress, which easement is shown as proposed 45 easement on a map prepared by Phillip B. Culbreth, P. L. S., dated October, 2005 as revised on November 4, 2005, December 11, 2005 and December 21, 2005. Said map being recorded in the Robeson County Registry in Book of Maps ____ at Page _____.

C.R. CREECH PROPERTY

CONSERVATION EASEMENT SURVEY FOR THE STATE OF NORTH CAROLINA
ECOSYSTEM ENHANCEMENT PROGRAM- BLACK GUM CREEK PROJECT

SURVEY FOR
SMITHS TOWNSHIP ROBESON COUNTY NORTH CAROLINA
1" = 300'

300 0 300 600 900
GRAPHIC SCALE - FEET

ALL DISTANCES HORIZONTAL
10,000+
BROKEN LINES NOT SURVEYED.

OCT. 2005
REVISED 04 NOV. 2005
REVISED 11 DEC. 2005
REVISED 21 DEC. 2005
REVISED 06 JAN. 2006
REVISED 12 JAN. 2006

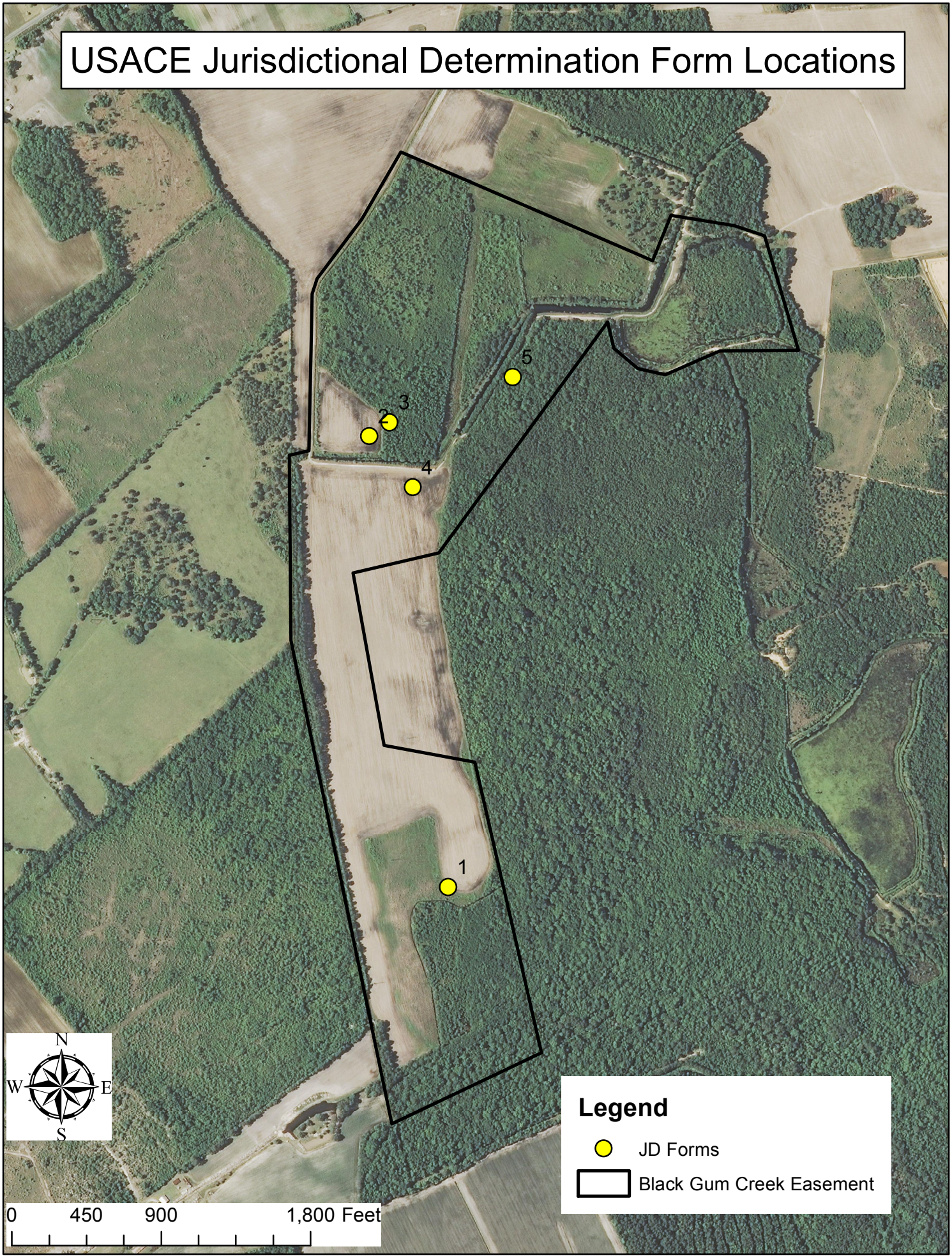
PROFESSIONAL LAND SURVEYOR PHILLIP B. CULBRETH PBC SURVEYING PHONE 910-738-7015

PHILLIP B. CULBRETH, P.L.S.
427 PINELOG ROAD
LUMBERTON, N.C. 28360
TEL. 910-738-7015
N.C. REG. NO. L-2662
S.C. REG. NO. 9179

NORTH CAROLINA PROFESSIONAL SEAL L-2662 LAND SURVEYOR PHILLIP B. CULBRETH

Appendix B

Baseline Information


USACE Jurisdictional Determination Form Locations
1
2
3
4
5
N
W
E
S
Legend
JD Forms
Black Gum Creek Easement
0
450
900
1,800 Feet

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Black Gum Creek City/County: Robeson Sampling Date: 2-28-14

Applicant/Owner: Creech/EEP State: NC Sampling Point: 1

Investigator(s): Steve Stokes/Tommy Seelinger Section, Township, Range: _____

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

Subregion (LRR or MLRA): LRR T Lat: 34 48' 45N Long: 79 19' 46W Datum: _____

Soil Map Unit Name: Rutlege NWI classification: PSSI

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

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

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

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

Hydrophytic Vegetation Present?	Yes X	No _____
Hydric Soil Present?	Yes X	No _____
Wetland Hydrology Present?	Yes X	No _____

Is the Sampled Area within a Wetland? **Yes** X **No** _____

Remarks:

Logged between 7/2006 and 10/2008

HYDROLOGY

Wetland Hydrology Indicators:

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

- [x] Surface Water (A1)
- [ ] High Water Table (A2)
- [x] Saturation (A3)
- [ ] Water Marks (B1)
- [ ] Sediment Deposits (B2)
- [ ] Drift Deposits (B3)
- [ ] Algal Mat or Crust (B4)
- [ ] Iron Deposits (B5)
- [ ] Inundation Visible on Aerial Imagery (B7)
- [ ] Water-Stained Leaves (B9)
- [ ] Aquatic Fauna (B13)
- [ ] Marl Deposits (B15) **(LRR U)**
- [ ] Hydrogen Sulfide Odor (C1)
- [ ] Oxidized Rhizospheres along 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)
- [x] Geomorphic Position (D2)
- [ ] Shallow Aquitard (D3)
- [x] FAC-Neutral Test (D5)
- [x] Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes X	No _____	Depth (inches): 7-10
Water Table Present?	Yes _____	No _____	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): Surface

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

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 1

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Sapling/Shrub Stratum (Plot size:)			
1. Acer rubrum	40	X	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size:)			
1. Scirpus cyperinus	40	X	OBL
2. Acer rubrum	10	X	FAC
3. Solidago spp			
4. Rubus spp.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		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:

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

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

Definitions of Four Vegetation Strata:

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

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

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

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No

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

SOIL

Sampling Point: 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 2/1	100					mlfs	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 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)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

Bore started caving

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Black Gum Creek City/County: Robeson Sampling Date: 9/30/2014

Applicant/Owner: Creech/EEP State: NC Sampling Point: 2

Investigator(s): Heather Smith/Kristie Corson Section, Township, Range: _____

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

Subregion (LRR or MLRA): LRR T Lat: 34 49' 12 N Long: 79 19' 51 W Datum: _____

Soil Map Unit Name: Plummer NWI classification: PSSI

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

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

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

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

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

Remarks:

Data point in old ag field

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 along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes X	No _____	Depth (inches): 8
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 6

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

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

Have gauge data from a higher elevation showing 22.8% in the growing season

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 2

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Herb Stratum (Plot size: 20)			
1. Typha spp.	90	X	OBL
2. Panicum spp.	5		
3. Polygnum spp.	5		
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	x 1 = _____
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:

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

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

Definitions of Four Vegetation Strata:

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

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

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

Woody vine – All woody vines greater than 3.28 ft in height.

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

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

Surrounding areas had goldenrod and dog fennel, were slightly higher in elevation.

SOIL

Sampling Point: 2

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	100					lfs	
8-10	10YR 4/1	100					s	
10-14	10YR 4/1	70	7.5YR 2.5/2	30	C	PL, M	s	
14-20	7.5YR 2.5/2	30					s	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 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)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Black Gum Creek City/County: Robeson Sampling Date: 9-30-2014

Applicant/Owner: Creech/EEP State: NC Sampling Point: 3

Investigator(s): Heather Smith/Kristie Corson Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): None Slope (%): 0-1

Subregion (LRR or MLRA): LRR T Lat: 34°49'13.354"N Long: 79°19'50.44"W Datum: _____

Soil Map Unit Name: Plummer NWI classification: PSSI

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

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

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

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

Hydrophytic Vegetation Present?	Yes X	No _____
Hydric Soil Present?	Yes X	No _____
Wetland Hydrology Present?	Yes X	No _____

Is the Sampled Area within a Wetland? **Yes** X **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ 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 along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes X	No _____	Depth (inches): 8
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 6

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

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 3

Tree Stratum (Plot size: 50')	Absolute % Cover	Dominant Species?	Indicator Status
1. Liquidambar styraciflua	50	X	FAC
2. Liriodendron tulipifera	5		FACU
3. Acer rubrum	25	X	FAC
4. Pinus serotina	2		FACW
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Sapling/Shrub Stratum (Plot size:)			
1. Acer rubrum	10	X	FAC
2. Vaccinium spp.	5		
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size:)			
1. Osmunda cinnamomea	2		FACW
2. Woodwardia areolata	1		OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species		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:

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

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

Definitions of Four Vegetation Strata:

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

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

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

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes ____ No ____

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

Site was cut over between 1987 and 1993

SOIL

Sampling Point: 3

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR 2/1	100					lfs	
8-10	10YR 4/1	100					s	
10-14	10YR 4/1	70	7.5YR 2.5/2	30	C	PL, M	s	
14-20	7.5YR 2.5/2	100					s	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 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)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Black Gum Creek City/County: Robeson Sampling Date: 9-30-2014

Applicant/Owner: Creech/EEP State: NC Sampling Point: 4

Investigator(s): Heather Smith/Kristie Corson Section, Township, Range: _____

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

Subregion (LRR or MLRA): LRR T Lat: 34°49'9.442"N Long: 79°19'48.713"W Datum: _____

Soil Map Unit Name: Plummer NWI classification: PSSI

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

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

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

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

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

Remarks:

Is an old ag field, stopped production this year

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 along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes X	No _____	Depth (inches): 18
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 15

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

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

Have gauge data showing wetland hydrology for 10% of growing season

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 4

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
	50% of total cover: _____	20% of total cover: _____	

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
	50% of total cover: _____	20% of total cover: _____	

Herb Stratum (Plot size: _____)			
1. Panicum spp.			
2. Polygnum spp.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	_____ = Total Cover		
	50% of total cover: _____	20% of total cover: _____	

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
	50% of total cover: _____	20% of total cover: _____	

Dominance Test worksheet:

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

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

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

Definitions of Four Vegetation Strata:

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

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

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

Woody vine – All woody vines greater than 3.28 ft in height.

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

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

SOIL

Sampling Point: 4

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6.5	10YR 2/1	100					ml	
6.5-15	10YR 2/1	100					l	
15-20	10YR 4/1	100					sl	
20-44	10YR 4/1	100					scl	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 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)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Black Gum Creek City/County: Robeson Sampling Date: 9/30/2014

Applicant/Owner: Creech/EEP State: NC Sampling Point: 5

Investigator(s): Heather Smith/Kristie Corson Section, Township, Range: _____

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

Subregion (LRR or MLRA): LRR T Lat: 34°49'16.045"N Long: 79°19'41.541"W Datum: _____

Soil Map Unit Name: Rutlege NWI classification: PSSI

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

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

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

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

Hydrophytic Vegetation Present?	Yes X	No _____
Hydric Soil Present?	Yes X	No _____
Wetland Hydrology Present?	Yes X	No _____

Is the Sampled Area within a Wetland? **Yes** X **No** _____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ 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 along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes X	No _____	Depth (inches): 6
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 4

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

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 5

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Magnolia virginiana	10	X	FACW
2. Acer rubrum	50	X	FAC
3. Liriodendron tulipifera	5		FACU
4. Pinus taeda			FAC
5. Nyssa biflora	5		OBL
6.			
7.			
8.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Herb Stratum (Plot size: _____)			
1. Osmunda cinnamomea			OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Woody Vine Stratum (Plot size: _____)			
1. Smilax laurifolia	30	X	OBL
2.			
3.			
4.			
5.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	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:

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

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

Definitions of Four Vegetation Strata:

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

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

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

Woody vine – All woody vines greater than 3.28 ft in height.

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

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

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: 5

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Magnolia virginiana	10	X	FACW
2. Acer rubrum	50	X	FAC
3. Liriodendron tulipifera	5		FACU
4. Pinus taeda			FAC
5. Nyssa biflora	5		OBL
6.			
7.			
8.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Herb Stratum (Plot size: _____)			
1. Osmunda cinnamomea			OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Woody Vine Stratum (Plot size: _____)			
1. Smilax laurifolia	30	X	OBL
2.			
3.			
4.			
5.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:
OBL species	_____	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:

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

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

Definitions of Four Vegetation Strata:

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

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

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

Woody vine – All woody vines greater than 3.28 ft in height.

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

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

SOIL

Sampling Point: 5

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-20	10YR 2/1	100					mlfs	

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

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

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 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)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. SAW-2015-01605 County: Robeson U.S.G.S. Quad: NC – Gaddysville

NOTIFICATION OF JURISDICTIONAL DETERMINATION

Owner: C.R. Creech and Shirley Creech
1594 Lakewood Falls
Goldston, North Carolina 27252

Agent: Kristin Miguez
NCDENR Division of Mitigation Services
1652 Mail Service Center
Raleigh, North Carolina 27699

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Size (acres)	Approximately 147.47 acres	Nearest Town	Maxton
Nearest Waterway	Tributary to Lumber River	River Basin	Lumber
USGS HUC	03040203	Coordinates	Latitude: 34.81917 N Longitude: -79.33028 W

Location description: The 147.47 acres review area is located within two parcels (930827101800 & 930900996500), near 1563 Modest Road, near the town of Maxton, Robeson County, North Carolina.

Indicate Which of the Following Apply:

A. Preliminary Determination

_ Based on preliminary information, there may be waters of the U.S. including wetlands on the above described project area . We strongly suggest you have this property inspected to determine the extent of Department of the Army (DA) jurisdiction. To be considered final, a jurisdictional determination must be verified by the Corps. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also, you may provide new information for further consideration by the Corps to reevaluate the JD.

B. Approved Determination

_ There are Navigable Waters of the United States within the above described project area subject to the permit requirements of Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

X There are waters of the U.S. including wetlands on the above described project area subject to the permit requirements of Section 404 of the Clean Water Act (CWA)(33 USC § 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ We strongly suggest you have the waters of the U.S. including wetlands on your project area delineated. Due to the size of your property and/or our present workload, the Corps may not be able to accomplish this wetland delineation in a timely manner. For a more timely delineation, you may wish to obtain a consultant. To be considered final, any delineation must be verified by the Corps.

X The waters of the U.S. including wetlands on your project area have been delineated and the delineation has been verified by the Corps. We strongly suggest you have this delineation surveyed. Upon completion, this survey should be reviewed and verified by the Corps. Once verified, this survey will provide an accurate depiction of all areas subject to CWA jurisdiction on your property which, provided there is no change in the law or our published regulations, may be relied upon for a period not to exceed five years.

_ The waters of the U.S. including wetlands have been delineated and surveyed and are accurately depicted on the plat identified below. Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ There are no waters of the U.S., to include wetlands, present on the above described property which are subject to the permit requirements of Section 404 of the Clean Water Act (33 USC 1344). Unless there is a change in the law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ The property is located in one of the 20 Coastal Counties subject to regulation under the Coastal Area Management Act (CAMA). You should contact the Division of Coastal Management in Wilmington, NC, at (910) 796-7215 to determine their requirements.

Placement of dredged or fill material within waters of the US and/or wetlands without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC § 1311). If you have any questions regarding this determination and/or the Corps regulatory program, please contact **Kyle Dahl at 910-251-4469 or Kyle.J.Dahl@usace.army.mil**.

C. Basis For Determination: **This site exhibit wetland criteria as described in the 1987 Corps Wetland Delineation Manual and the appropriate regional supplement. The site also contains features with an Ordinary High Water Mark that are also jurisdictional. The site contains waters and wetlands abutting a tributary of the Lumber River, a TNW in the downstream reaches. The enclosed map titled "Black Gum Creek Wetlands" dated November 2015, accurately depicts the geographic extent of jurisdictional waters on wetlands on-site.**

D. Remarks:

E. Attention USDA Program Participants

This delineation/determination has been conducted to identify the limits of Corps' Clean Water Act jurisdiction for the particular site identified in this request. The delineation/determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA Program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service, prior to starting work.

F. Appeals Information **(This information applies only to approved jurisdictional determinations as indicated in B. above)**

This correspondence constitutes an approved jurisdictional determination for the above described site. If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and request for appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the following address:

US Army Corps of Engineers
South Atlantic Division
Attn: Jason Steele, Review Officer
60 Forsyth Street SW, Room 10M15
Atlanta, Georgia 30303-8801

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by **3/6/2016.**

It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this correspondence.

Corps Regulatory Official: _____

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Date: **January 6, 2016**

Expiration Date: **January 6, 2021**

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: **C.R. Creech & Shirley Creech**	File Number: **SAW-2015-01605**	Date: **January 6, 2016**
Attached is:		See Section below
☐ INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)		A
☐ PROFFERED PERMIT (Standard Permit or Letter of permission)		B
☐ PERMIT DENIAL		C
☒ **APPROVED JURISDICTIONAL DETERMINATION**		**D**
☐ PRELIMINARY JURISDICTIONAL DETERMINATION		E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the district engineer. This form must be received by the division engineer within 60 days of the date of this notice.

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E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact: **District Engineer, Wilmington Regulatory Division,** **Attn: Kyle Dahl** **(910) 251-4469** **Kyle.J.Dahl@usace.army.mil**	If you only have questions regarding the appeal process you may also contact: Mr. Jason Steele, Administrative Appeal Review Officer CESAD-PDO U.S. Army Corps of Engineers, South Atlantic Division 60 Forsyth Street, Room 10M15 Atlanta, Georgia 30303-8801 Phone: (404) 562-5137

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:	Telephone number:

For appeals on Initial Proffered Permits send this form to:

District Engineer, Wilmington Regulatory Division, Kyle Dahl, 69 Darlington Ave., Wilmington, NC 28403

For Permit denials, Proffered Permits and approved Jurisdictional Determinations send this form to:

Division Engineer, Commander, U.S. Army Engineer Division, South Atlantic, Attn: Mr. Jason Steele, Administrative Appeal Officer, CESAD-PDO, 60 Forsyth Street, Room 10M15, Atlanta, Georgia 30303-8801
Phone: (404) 562-5137

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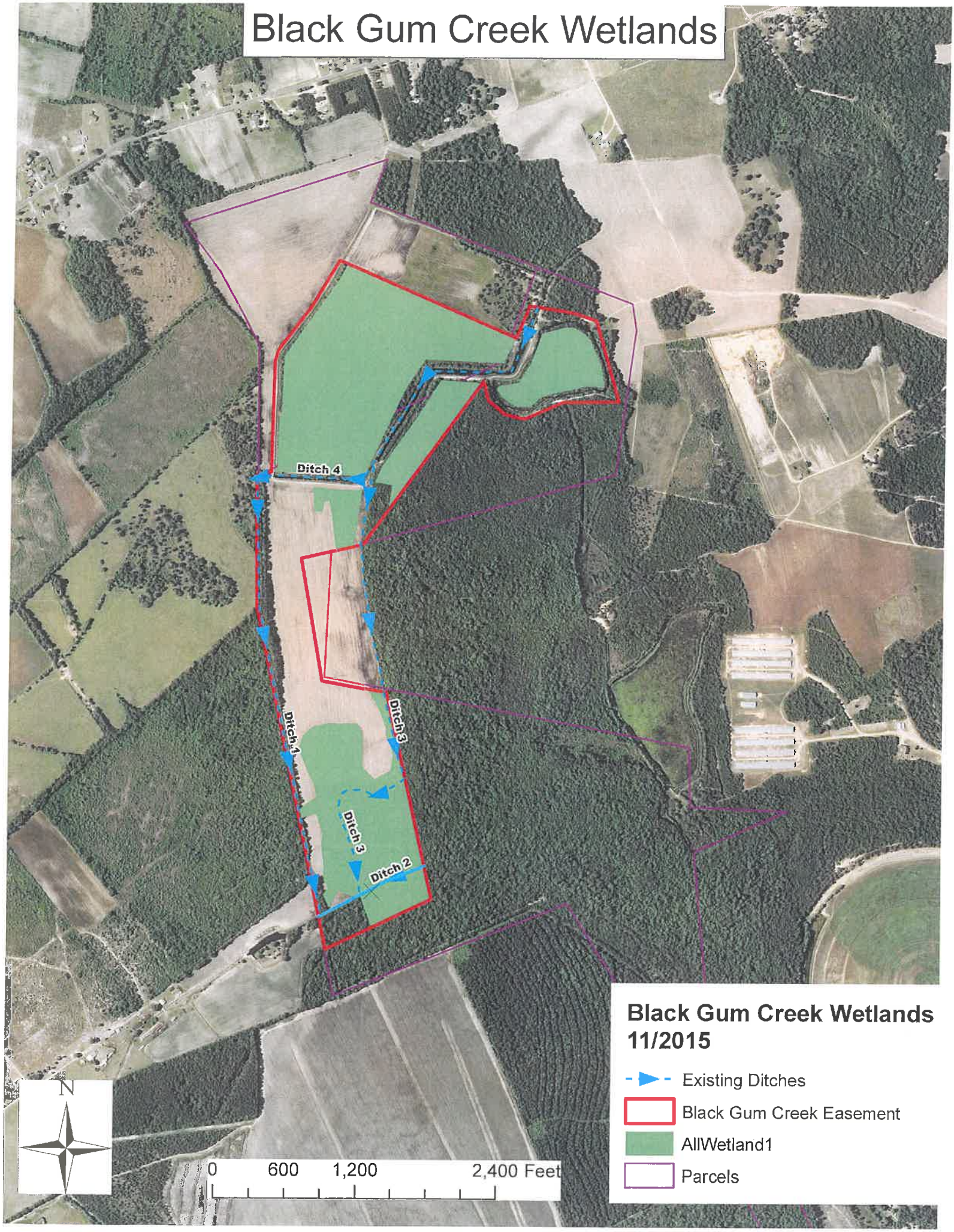
Black Gum Creek Wetlands
Ditch 4
Ditch 1
Ditch 3
Ditch 3
Ditch 2
Black Gum Creek Wetlands
11/2015
Existing Ditches
Black Gum Creek Easement
AllWetland1
Parcels
N
0
600
1,200
2,400 Feet

Appendix A

Categorical Exclusion Form for Ecosystem Enhancement Program Projects
Version 1.4

Note: Only Appendix A should to be submitted (along with any supporting documentation) as the environmental document.

Part 1: General Project Information	
Project Name:	Black Gum Creek
County Name:	Robeson
EEP Number:	92221
Project Sponsor:	EEP
Project Contact Name:	Heather Smith
Project Contact Address:	1652 Mail Service Center Raleigh, NC 27699
Project Contact E-mail:	heather.c.smith@ncdenr.gov
EEP Project Manager:	Heather Smith

Project Description

This is a wetland rehabilitation project. It involves planting activities only. 9.9 acres will be planted on the site.

For Official Use Only

Reviewed By:

Date | **EEP Project Manager**

Conditional Approved By:

Date | **For Division Administrator FHWA**

☐ **Check this box if there are outstanding issues**

Final Approval By:

9-17-14

Date | **For Division Administrator FHWA**

Part 2: All Projects Regulation/Question	Response
Coastal Zone Management Act (CZMA)	
1. Is the project located in a CAMA county?	☐ Yes ☒ No
2. Does the project involve ground-disturbing activities within a CAMA Area of Environmental Concern (AEC)?	☐ Yes ☐ No ☒ N/A
3. Has a CAMA permit been secured?	☐ Yes ☐ No ☒ N/A
4. Has NCDCM agreed that the project is consistent with the NC Coastal Management Program?	☐ Yes ☐ No ☒ N/A
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA)	
1. Is this a "full-delivery" project?	☐ Yes ☒ No
2. Has the zoning/land use of the subject property and adjacent properties ever been designated as commercial or industrial?	☐ Yes ☐ No ☒ N/A
3. As a result of a limited Phase I Site Assessment, are there known or potential hazardous waste sites within or adjacent to the project area?	☐ Yes ☐ No ☒ N/A
4. As a result of a Phase I Site Assessment, are there known or potential hazardous waste sites within or adjacent to the project area?	☐ Yes ☐ No ☒ N/A
5. As a result of a Phase II Site Assessment, are there known or potential hazardous waste sites within the project area?	☐ Yes ☐ No ☒ N/A
6. Is there an approved hazardous mitigation plan?	☐ Yes ☐ No ☒ N/A
National Historic Preservation Act (Section 106)	
1. Are there properties listed on, or eligible for listing on, the National Register of Historic Places in the project area?	☐ Yes ☒ No
2. Does the project affect such properties and does the SHPO/THPO concur?	☐ Yes ☐ No ☒ N/A
3. If the effects are adverse, have they been resolved?	☐ Yes ☐ No ☒ N/A
Uniform Relocation Assistance and Real Property Acquisition Policies Act (Uniform Act)	
1. Is this a "full-delivery" project?	☐ Yes ☒ No
2. Does the project require the acquisition of real estate?	☐ Yes ☐ No ☒ N/A
3. Was the property acquisition completed prior to the intent to use federal funds?	☐ Yes ☐ No ☒ N/A
4. Has the owner of the property been informed: * prior to making an offer that the agency does not have condemnation authority; and * what the fair market value is believed to be?	☐ Yes ☐ No ☒ N/A

North Carolina Department of Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Pat McCrory
Secretary Susan Kluttz

Office of Archives and History
Deputy Secretary Kevin Cherry

August 19, 2014

MEMORANDUM

TO: Heather Smith
Ecosystem Enhancement Program
NC Department of Environment and Natural Resources

FROM: Ramona M. Bartos RSL for Ramona M. Bartos

SUBJECT: Black Gum Creek Wetland Mitigation, Robeson County, ER 14-1737

Thank you for your letter of July 28, 2014, concerning the above project.

We have conducted a review of the project and are aware of no historic resources which would be affected by the project. Therefore, we have no comment on the project as proposed.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, please contact Renee Gledhill-Earley, environmental review coordinator, at 919-807-6579. In all future communication concerning this project, please cite the above-referenced tracking number.

Michael F. Easley, Governor

William G. Ross Jr., Secretary
North Carolina Department of Environment and Natural Resources

Alan W. Klimek, P.E. Director
Division of Water Quality

November 29, 2006

Mr. Edward Samanns
Louis Berger Group
30 Vreeland Road
Florham Park, New Jersey 07932-1904

RECEIVED
DEC 01 2006
NC ECOSYSTEM ENHANCEMENT PROGRAM

Dear Mr. Samanns:

RE: Division of Water Quality comments on Black Gum Stream Restoration Project
Robeson County
DWQ # 2006-1819

As you know, staff of the NC Division of Water Quality and the US Army Corps of Engineers visited the site on October 20, 2006 at your and the Ecosystem Enhancement Program's request to make a decision regarding the amount of stream and riparian wetland credits that may be available on this site if EEP continues to pursue its development as a compensatory mitigation site. In addition to our observations that day, we have reviewed LIDAR maps, local topographic maps and aerial photos as well as the information contained in your November 8, 2006 letter. I have met with Scott McLendon with the US Army Corps of Engineers to discuss these findings and the Corps concurs with the conclusions in this letter.

We believe that there is no stream credit and no riparian wetland credit available on this site. The site is characterized by non-riparian soil series (especially Rains, Pantego and Rutledge series) and is located in an interstream divide (between the Lumber River and Gum Swamp). The LIDAR data show an ill-defined low area at the southernmost part of the site – however, this feature lacks the clear crenulation shape indicative of small stream valleys elsewhere in the area. The Plummer-Osier soil series occurs primarily on second terraces of larger streams such as the Lumber River and Gum Swamp and is also found surrounding interstream flats and Carolina Bays (which is the location of this series on this site). In short, the site is an interstream divide and therefore would only provide non-riparian wetland mitigation.

We also believe that this is an excellent non-riparian wetland mitigation site since it will serve to tie together two large, previously segmented wetlands. If you or EEP has the need for non-riparian mitigation in this cataloging unit, we believe that this site is an excellent candidate to meet that need.

I can be reached at 919-733-9646 if you have any questions.

Sincerely yours,

John Dorney

Cc: Scott McLendon, Wilmington District US Army Corps of Engineers
Mike O'Rourke, Louis Berger Group, 1513 Walnut St., Suite 250, Cary, NC 27511
Jeff Jurek, NC Ecosystem Enhancement Program
Central files
Ken Averitte, Fayetteville Regional Office
File copy

401 Oversight/Express Review Permits Unit
1650 Mail Service Center, Raleigh, North Carolina 27699-1650
2321 Crabtree Boulevard, Suite 250, Raleigh, North Carolina 27604
Phone: 919-733-1786 / FAX 919-733-6893 / Internet: http://h2o.enr.state.nc.us/ncwetlands

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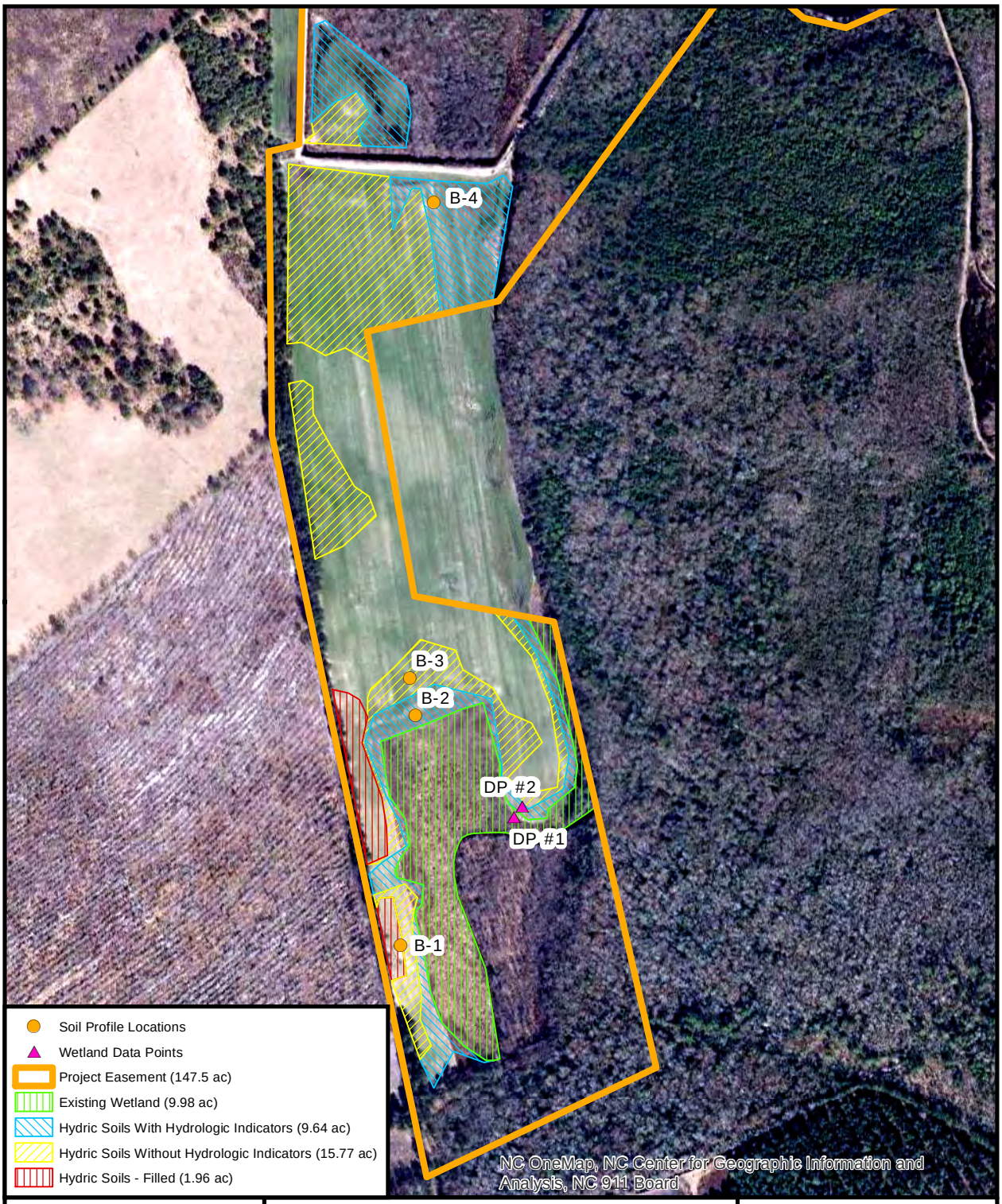
Appendix C

Mitigation Work Plan Data and Analyses



0 300 600 Feet

SOIL PROFILE DESCRIPTIONS AND WETLAND DATA POINTS BLACK GUM SWAMP ROBESON COUNTY, NC

N

Source: NC Orthoimagery, 2013.

KCI ASSOCIATES OF NORTH CAROLINA, PA

SOIL PROFILE DESCRIPTION

Client: KCI Associates of North Carolina, P.A. **Date:** February 28, 2014
Project: Black Gum Creek **Project #:** 16133502B SD.ED
County: Robeson **State:** NC
Location: Winston Road, Maxton, NC **Site/Lot:** Boring #1
Soil Series:
Soil Classification:
AWT: 25" **SHWT:** **Slope:** 0-2% **Aspect:**
Elevation: **Drainage:** Poorly **Permeability:** Moderate slow
Vegetation: Soybeans
Borings terminated at 55 **Inches**

HORIZON	DEPTH (IN)	MATRIX	MOTTLES	TEXTURE	STRUCTURE	CONSISTENCE	BOUNDARY	NOTES
Fill	0-2	10YR 4/2		fsl	x			fill
	2-6	10YR 4/1		fsl				
	6-12	10YR 4/1 c2f	10YR 5/6 c2d	sl				
			10YR 2/1					
	12-16	10YR 2/1		loam	1 Cg			high Om 15%
	16-20	10YR 4/1		sl	1 m Sble			
	20-25	10YR 4/	7.5YR 6/6 c2d	sl	1 m Sble			
	25-36	10YR 5/1		scl				
		10YR 5/1	10YR 5/8 c2d	scl	2 m Sble			
	36-50	10YR 7/1	10 YR 5/8 f1d	scl	2 m Sble			
	50-55	10YR 7/1		s	sg			

COMMENTS:

DESCRIBED BY: SFS DATE: 2/28/2014

KCI ASSOCIATES OF NORTH CAROLINA, PA

SOIL PROFILE DESCRIPTION

Client: KCI Associates of North Carolina, P.A. **Date:** February 28, 2014
Project: Black Gum Creek **Project #:** 16133502B SD.ED
County: Robeson **State:** NC
Location: Winston Road, Maxton, NC **Site/Lot:** Boring #2
Soil Series:
Soil Classification:
AWT: 10" **SHWT:** **Slope:** **Aspect:**
Elevation: **Drainage:** Poorly **Permeability:** Moderate and moderate slow
Vegetation: Soybeans
Borings terminated at 48 **Inches**

HORIZON	DEPTH (IN)	MATRIX	MOTTLES	TEXTURE	STRUCTURE	CONSISTENCE	BOUNDARY	NOTES
	0-6.5	10YR 3/1	10YR 5/6 f1d	l				
	6.5-13	10YR 4/1	10YR 5/6 c2d	scl	2 m sble	mfr	5%	heavy scl - angals pin corpali
	13-20	10YR 4/1	10YR 5/6 c2d	scl		mfi	10-20%	
	20-36	10YR 5/2	10YR 5/6 c2d	scl		mfi	5%	
	36-48	10YR 7/1		scl	massive	mfi		
				sand	sg	mfi		

COMMENTS: seepage of H2O at 10", no oxidized roots

DESCRIBED BY: SFS DATE: 2/28/2014

KCI ASSOCIATES OF NORTH CAROLINA, PA

SOIL PROFILE DESCRIPTION

Client: KCI Associates of North Carolina, P.A. **Date:** February 28, 2014
Project: Black Gum Creek **Project #:** 16133502B SD.ED
County: Robeson **State:** NC
Location: Winston Road, Maxton, NC **Site/Lot:** Boring #3
Soil Series:
Soil Classification:
AWT: 15" **SHWT:** **Slope:** 0-2% **Aspect:**
Elevation: **Drainage:** Poorly **Permeability:**
Vegetation: Soybeans
Borings terminated at 42 **Inches**

HORIZON	DEPTH (IN)	MATRIX	MOTTLES	TEXTURE	STRUCTURE	CONSISTENCE	BOUNDARY	NOTES
	0-5	10YR 3/1		sl				
	5-12	10YR 5/1	10YR 5/6 c2d	sl	1 f sble			
	12-15	10YR 6/1	10YR 5/6 c2d	sl	1 f sble			
	15-30	10YR 6/1		sl				
	30-42	10YR 7/1	10 YR 6/4 c2d	sl	mass			
	42-	10YR 7/1		s	sg			

COMMENTS: sat'd 15", 24"

DESCRIBED BY: SFS DATE: 2/28/2014

KCI ASSOCIATES OF NORTH CAROLINA, PA

SOIL PROFILE DESCRIPTION

Client: KCI Associates of North Carolina, P.A. **Date:** February 28, 2014
Project: Black Gum Creek **Project #:** 16133502B SD.ED
County: Robeson **State:** NC
Location: Winston Road, Maxton, NC **Site/Lot:** Boring #4
Soil Series:
Soil Classification:
AWT: 18" **SHWT:** **Slope:** **Aspect:**
Elevation: **Drainage:** **Permeability:** moderately slow
Vegetation: Soybeans
Borings terminated at 42 **Inches**

HORIZON	DEPTH (IN)	MATRIX	MOTTLES	TEXTURE	STRUCTURE	CONSISTENCE	BOUNDARY	NOTES
	0-6.5	10YR 2/1		ml		mfr		
	6.5-15	10YR 2/1		l				coarse sand
	15-20	1-YR 4/1		sl	1m sble	mfr		
	20-44	10YR 4/1		scl	1 m sble			
	44-50	10YR 7/2		c	mass	m		

COMMENTS: water ___ in hole at 18"

DESCRIBED BY: SFS DATE: 2/28/2014

North Carolina Department of Environment and Natural Resources

Pat McCrory
Governor

Michael Ellison, Director
Ecosystem Enhancement Program

John E. Skvarla, III
Secretary

To: Todd Tugwell, IRT Chair

From: Heather Smith, EEP Eastern Project Manger

Subject: **IRT ACTION AGENDA ITEM**
Rehabilitation of Non-Riparian Wetlands (Black Gum Creek)
Lumber 03040203 Robeson County

Date: July 2, 2014

Black Gum Creek is an EEP site that is currently in agriculture. There are two large ditches along either side of the field which have a draining effect on the site. There are approximately 10 acres within the 147 acre parcel, exhibiting hydric soils and wetland hydrology indicators. The hydrology indicators noted on-site are ponded water, saturated soil above 12", and gauge data from 2014 growing season.

To place the property acquisition by EEP in perspective, this project began as a full delivery in 2005 for 10,000 linear feet of stream. No wetland credit was proposed by the Provider. Easement acquisition occurred prior to the completion of the Restoration Plan. When the Plan was provided from the Provider to EEP, much debate between the Provider, agencies, and EEP ensued. The concerns related to the application of the stream design. After much debate, the Provider requested cancellation of the full delivery contract. Since the easement was already acquired, the easement remained with EEP. Agency comments at that time indicated that wetland mitigation seemed more plausible than stream.

EEP Staff met on-site with Todd Tugwell, Tyler Crumbley, Mickey Sugg and David Bailey on 4/15/2013 to discuss Black Gum Creek. At the conclusion of the site visit, it was decided that the areas exhibiting both hydric soils and wetland hydrology were suitable for non-riparian wetland rehabilitation. In addition, the areas where wetland hydrology was restored and planted were acceptable for wetland restoration. EEP has determined that restoring wetland hydrology to some of the drained hydric soils is not feasible. This is due to the potential for hydrologic trespass. EEP would like to proceed by utilizing wetland rehabilitation option for 9.9 acres of the 147 acre site. Below is an explanation of the information gathered in the last year for the boundaries of non-riparian wetland rehabilitation.

KCI conducted a detailed examination of soils on-site looking for hydric soils and hydric soils with wetland hydrology indicators. Additionally, five gauges were installed by EEP on-site in March 2014. The gauge data was downloaded from 5 gauges and some of the areas deemed not to have wetland hydrology by KCI are exhibiting greater than 5% wetland hydrology. The growing season for Robeson County is 228 days, 5% of the growing season is 11.25 days. The rainfall according to the Red Springs rain gauge measured above average rainfall for the months of January, March and April. February and May were between the 30th and 70th percentile. The following are the consecutive days at or above a 12" groundwater table:

Gauge 1- 46 days (20.2%)

Gauge 2- 10 days (4.4%)

Gauge 3- 12 days (5.3%)

Gauge 4- 52 days (22.8%)

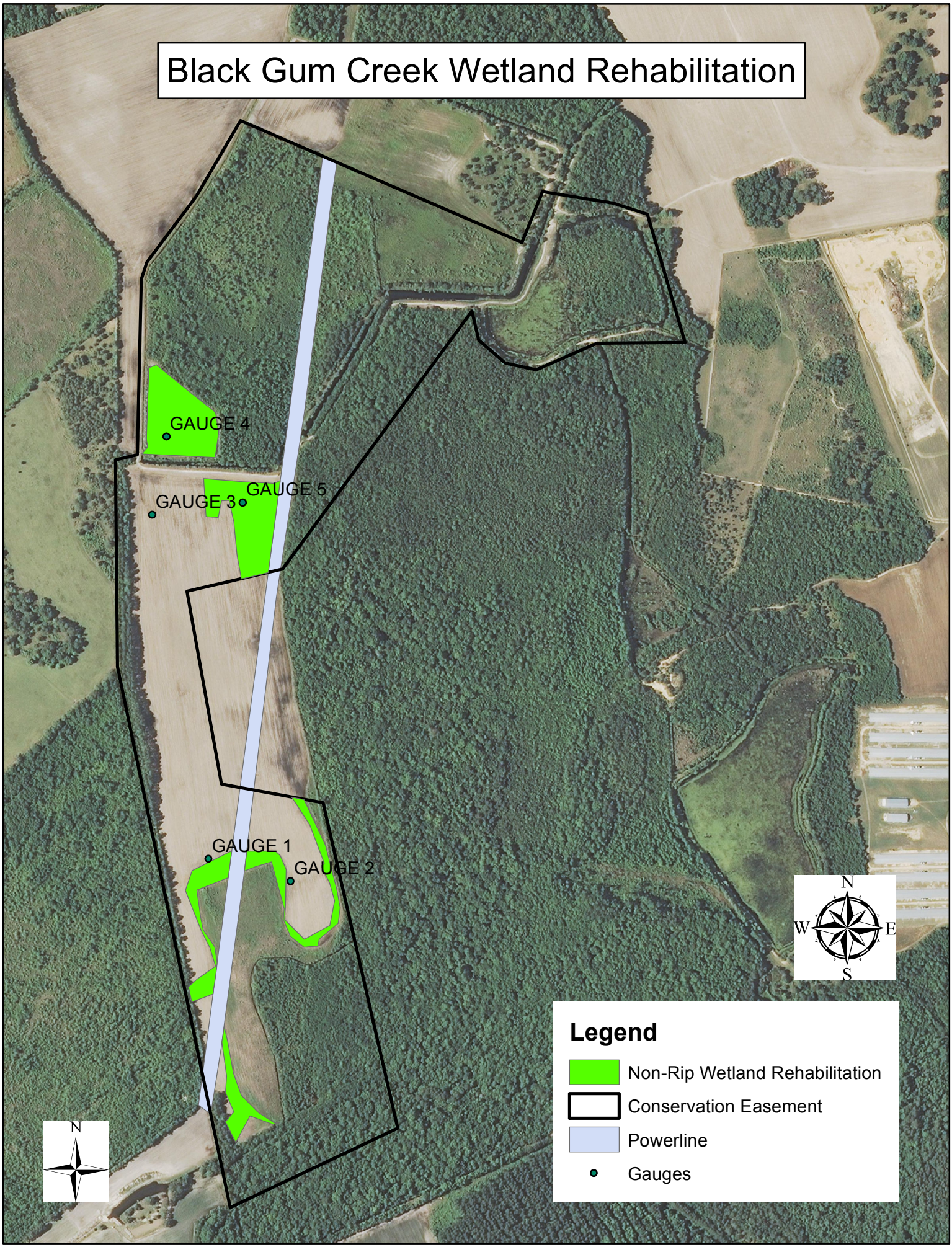
Gauge 5- 23 days (10.1%)

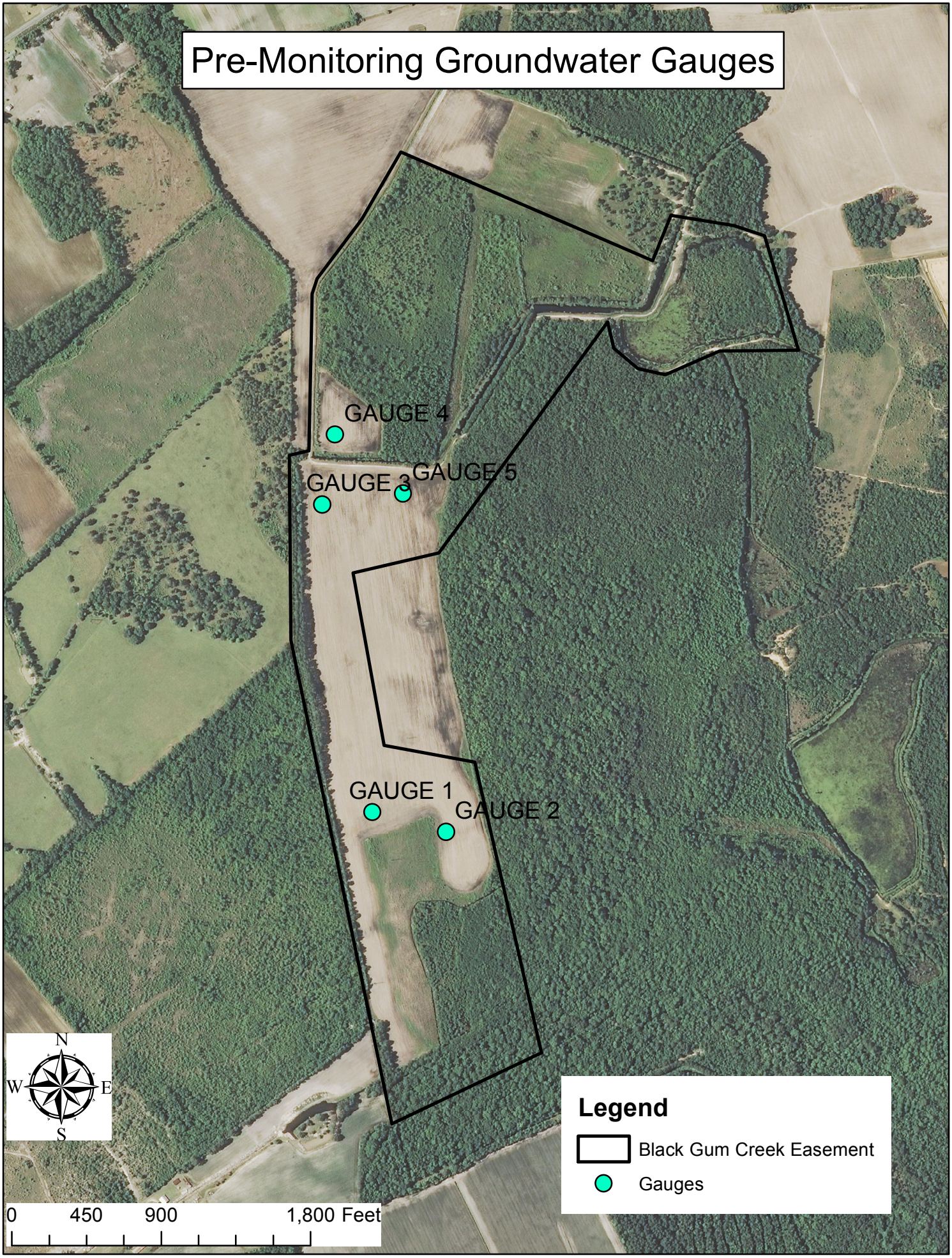
Gauges 1-4 were placed in areas considered (by KCI) to be drained hydric soils and Gauge 5 was placed in an area considered to have hydric soils and wetland hydrology. EEP is presenting a conservative area of wetland rehabilitation due to the above average rainfall at the beginning of the growing season.

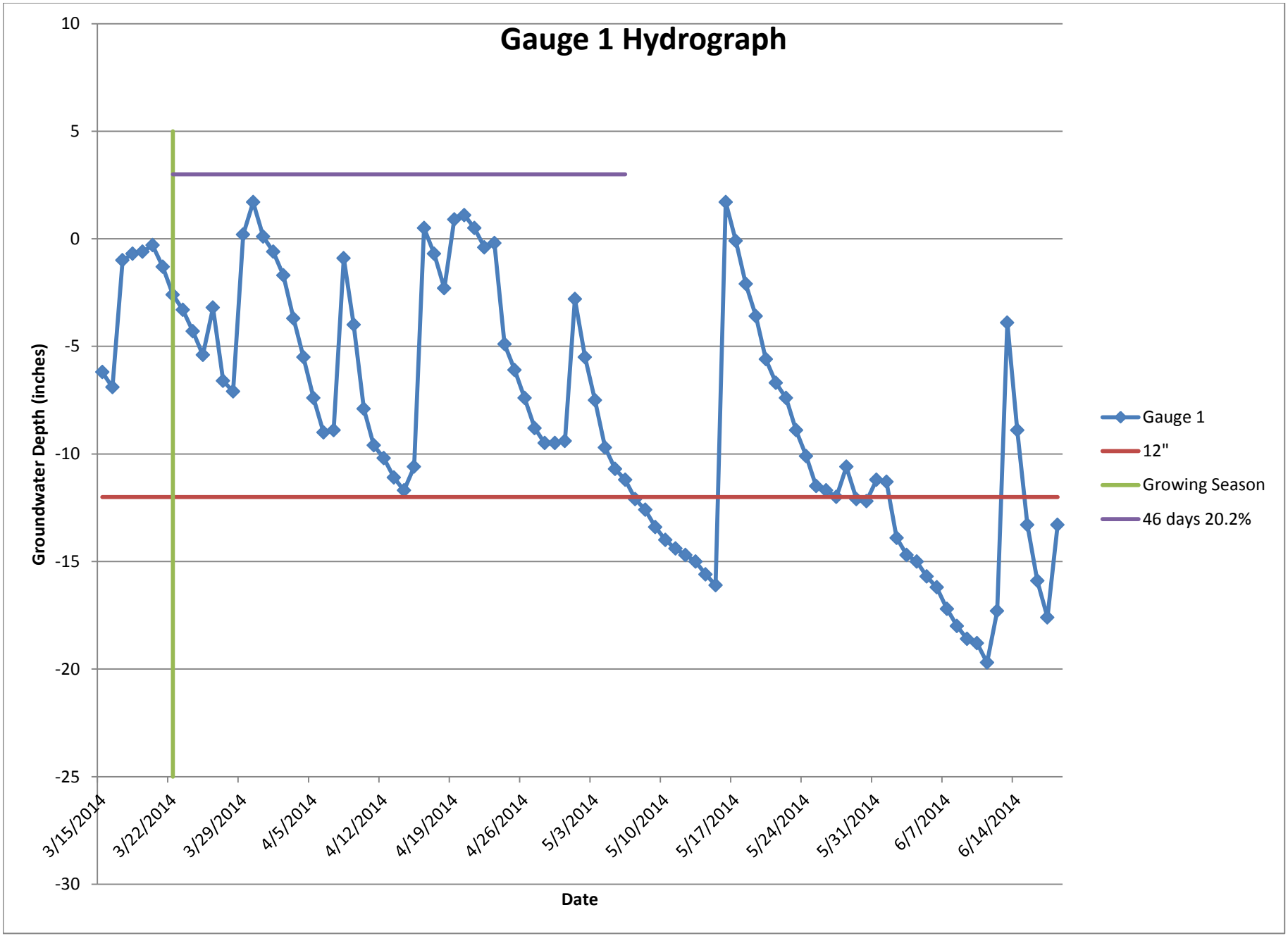
Based on this information and removing the estimated alignment of the powerline easement the site could generate 6.6 Non-Riparian WMUs at 1.5:1 ratio for wetland rehabilitation. (Please see attached map) If this preliminary plan is acceptable to the IRT the EEP will develop an abbreviated, revised mitigation plan which will included a formal USACE Jurisdictional Determination, planting of the site, and monitoring of hydrologic and vegetation parameters for 5 years.

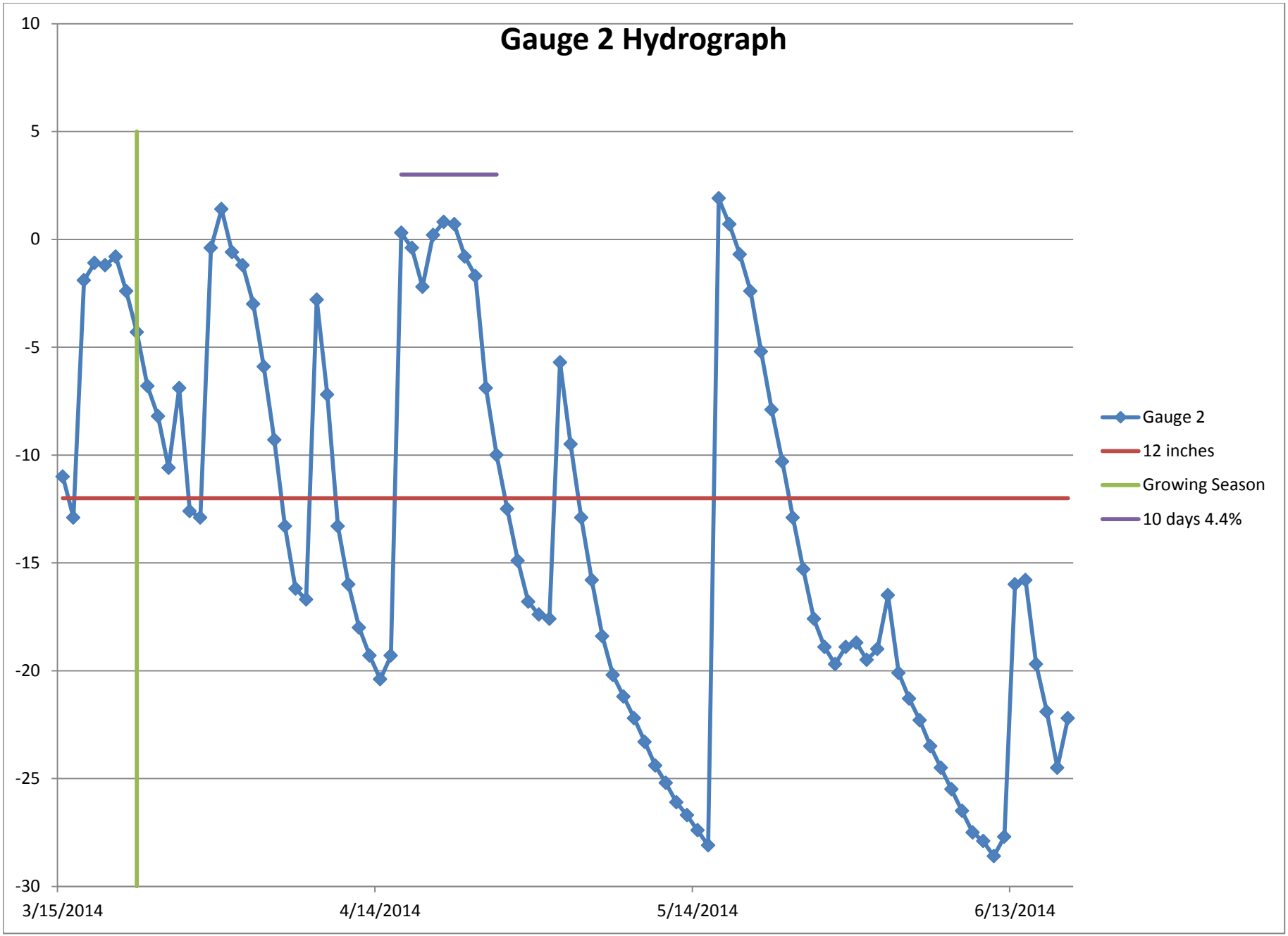
REQUESTED IRT ACTION:

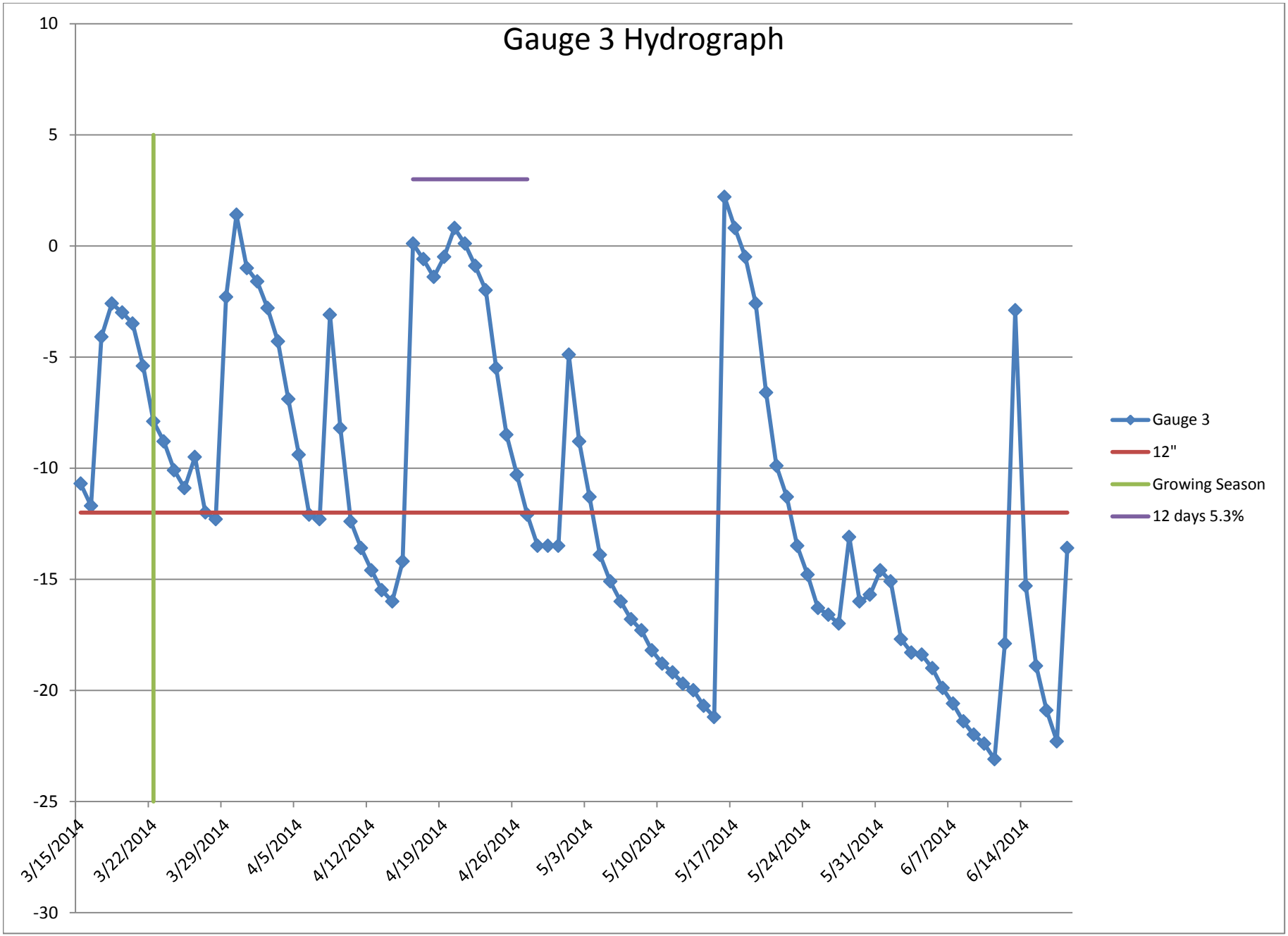
Prior to formal submittal of a revised mitigation plan, the EEP is seeking the IRT's agreement for the above strategy.

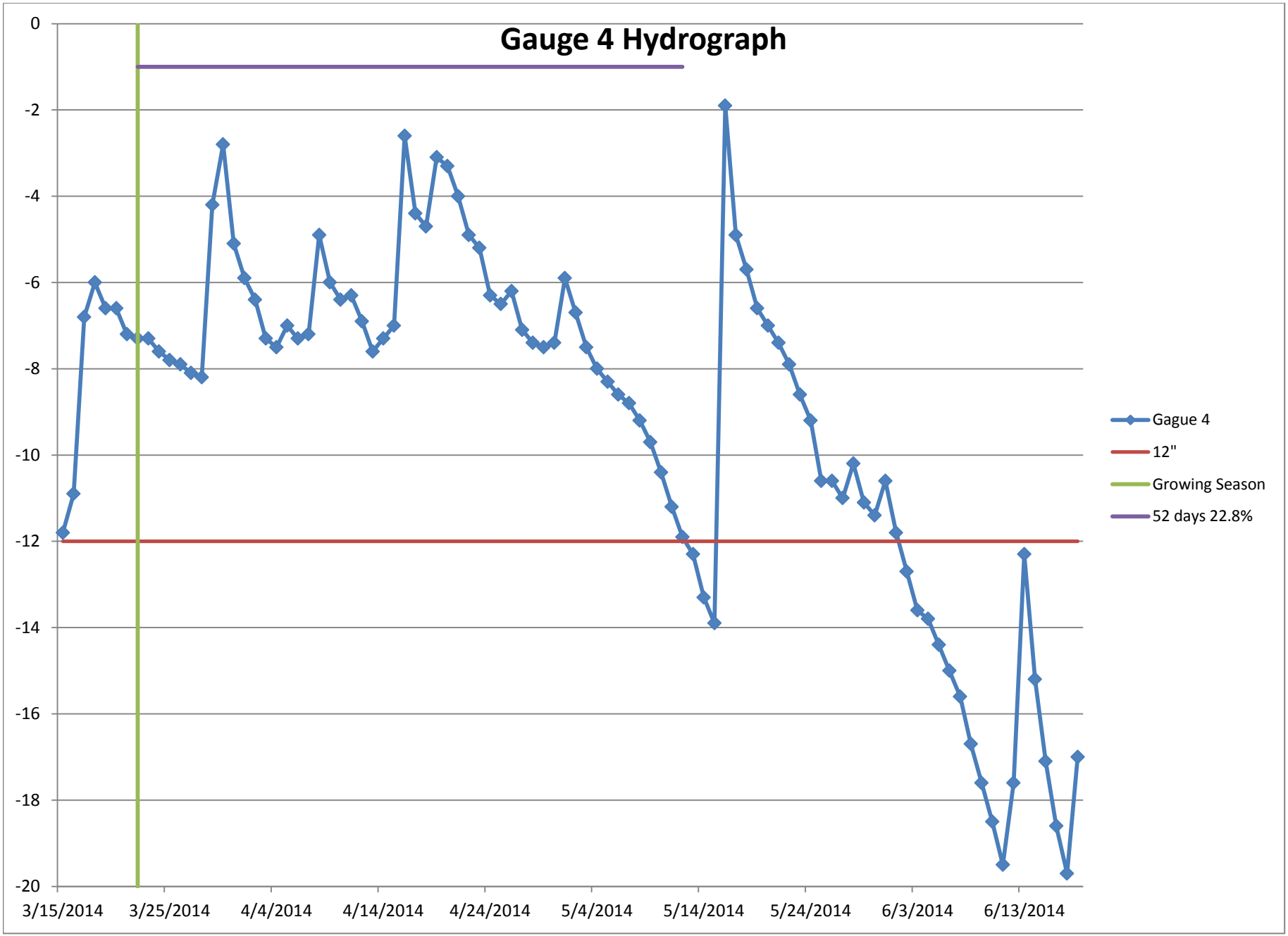

Black Gum Creek Wetland Rehabilitation
GAUGE 4
GAUGE 5
GAUGE 3
GAUGE 1
GAUGE 2
N
W
E
S
N
Legend
Non-Rip Wetland Rehabilitation
Conservation Easement
Powerline
Gauges

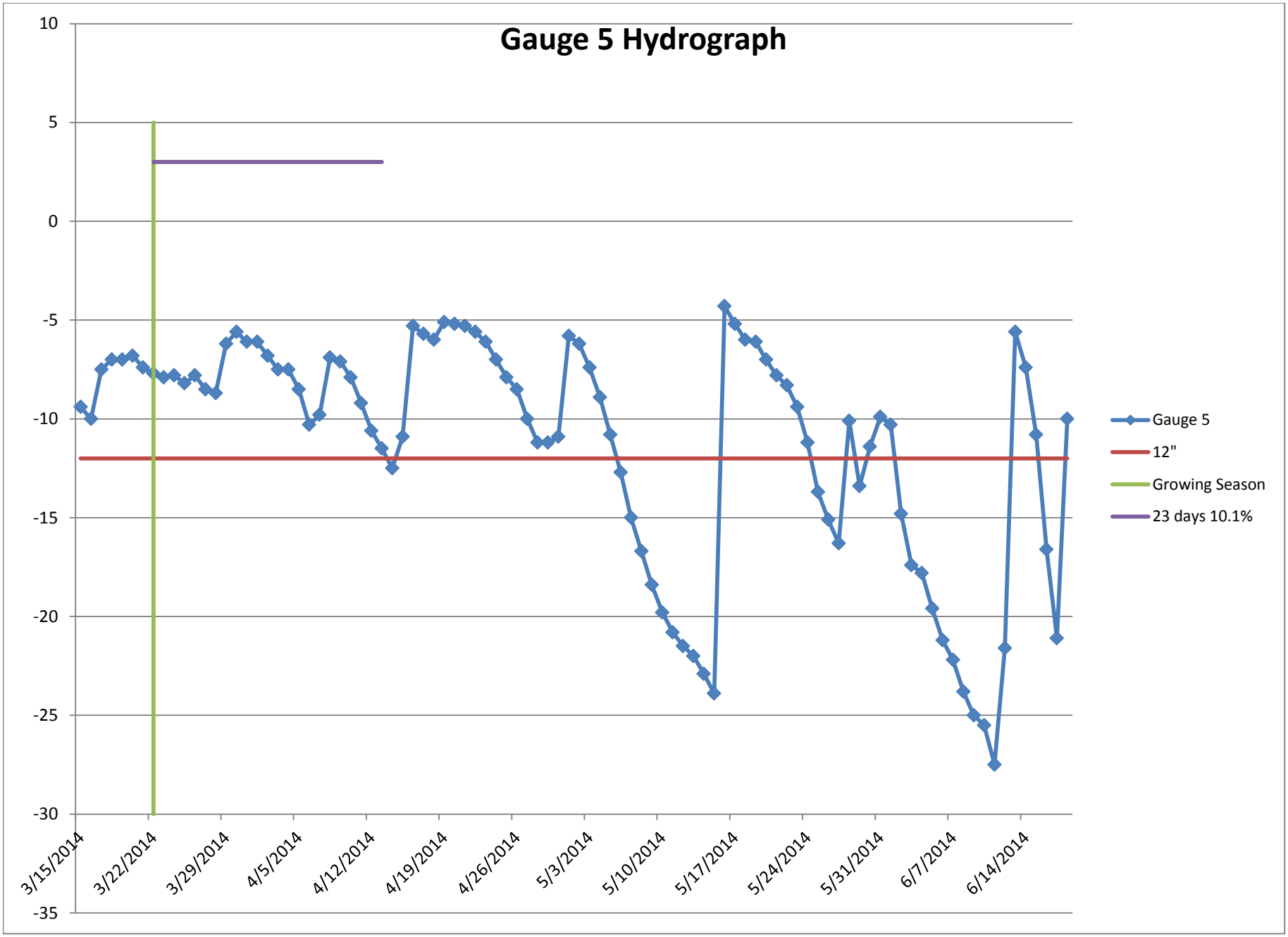

Pre-Monitoring Groundwater Gauges
GAUGE 4
GAUGE 5
GAUGE 3
GAUGE 1
GAUGE 2
N
W
E
S
Legend
Black Gum Creek Easement
Gauges
0
450
900
1,800 Feet


Gauge 1 Hydrograph
10
5
0
-5
-10
-15
-20
-25
-30
Groundwater Depth (inches)
3/15/2014
3/22/2014
3/29/2014
4/5/2014
4/12/2014
4/19/2014
4/26/2014
5/3/2014
5/10/2014
5/17/2014
5/24/2014
5/31/2014
6/7/2014
6/14/2014
Date
Gauge 1
12"
Growing Season
46 days 20.2%


Gauge 2 Hydrograph
10
5
0
-5
-10
-15
-20
-25
-30
3/15/2014
4/14/2014
5/14/2014
6/13/2014
Gauge 2
12 inches
Growing Season
10 days 4.4%

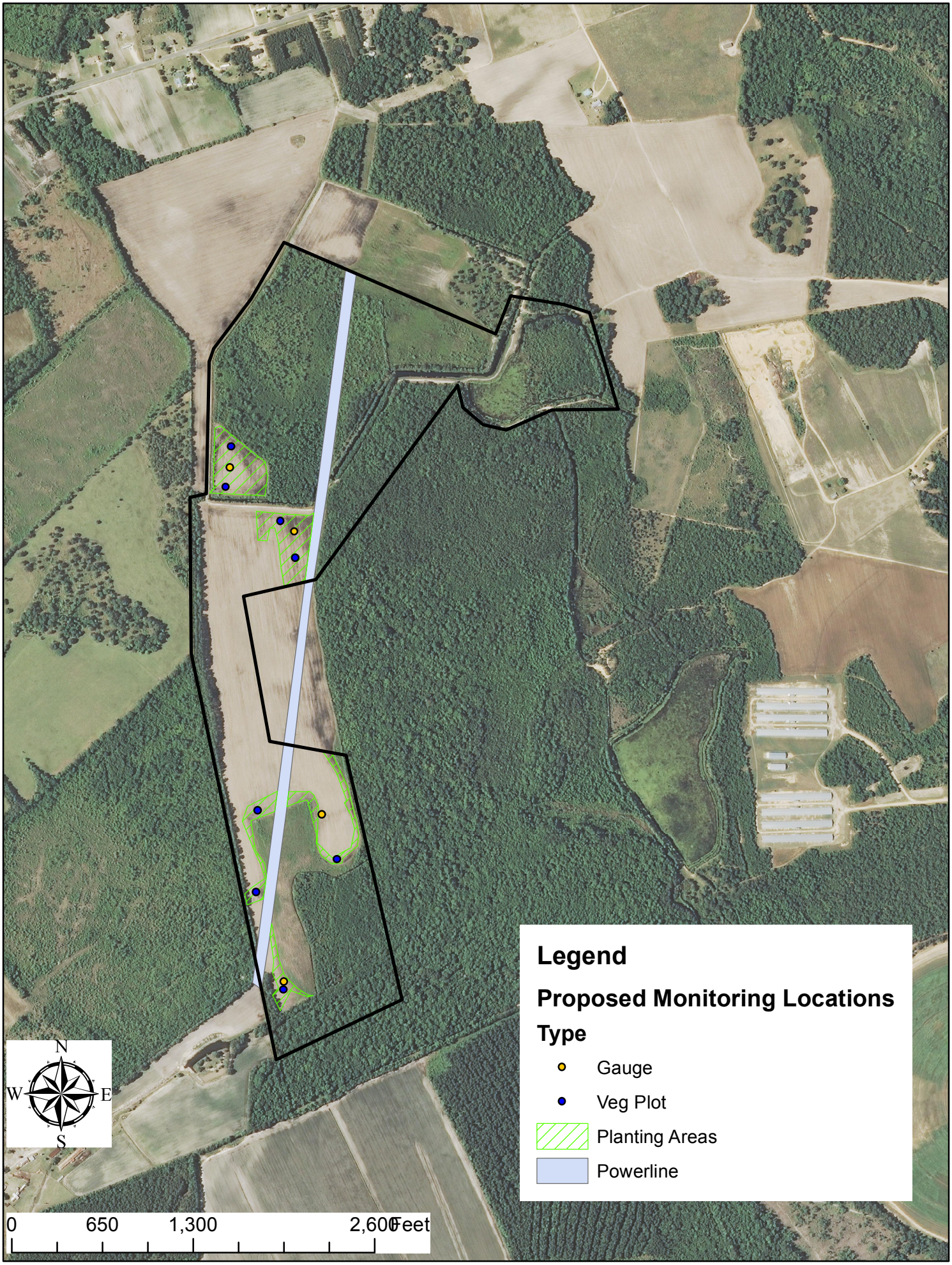

Gauge 3 Hydrograph
10
5
0
-5
-10
-15
-20
-25
-30
3/15/2014
3/22/2014
3/29/2014
4/5/2014
4/12/2014
4/19/2014
4/26/2014
5/3/2014
5/10/2014
5/17/2014
5/24/2014
5/31/2014
6/7/2014
6/14/2014
Gauge 3
12"
Growing Season
12 days 5.3%


Gauge 4 Hydrograph
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
-20
3/15/2014
3/25/2014
4/4/2014
4/14/2014
4/24/2014
5/4/2014
5/14/2014
5/24/2014
6/3/2014
6/13/2014
Gague 4
12"
Growing Season
52 days 22.8%


Gauge 5 Hydrograph
10
5
0
-5
-10
-15
-20
-25
-30
-35
3/15/2014
3/22/2014
3/29/2014
4/5/2014
4/12/2014
4/19/2014
4/26/2014
5/3/2014
5/10/2014
5/17/2014
5/24/2014
5/31/2014
6/7/2014
6/14/2014
Gauge 5
12"
Growing Season
23 days 10.1%

Appendix D

Project Plan Sheets


Legend
Proposed Monitoring Locations
Type
Gauge
Veg Plot
Planting Areas
Powerline
N
W
E
S
0
650
1,300
2,600
Feet