covering the same obligations stated herein, is posted with the Obligee. This bond will not be released in whole or in part until the Principal receives written verification from the IRT that the conditions for release in the Instrument and Mitigation Site Plan and Permits have been met.

3) The Surety's obligation under this bond shall arise after the Obligee has notified the Principal in their failure to abide by the terms and conditions of PSUMBI. Upon notice of the Principal's Default under PSUMBI, the Surety may take one of the following actions:

    a) Remedy the Default of the Principal to the full satisfaction of the Obligee by a date certain determined by the Obligee, or

    b) Immediately tender to a party or parties identified by the Obligee the portion of the penal sum that the Obligee determines is due and owing and necessary to remedy the Default. In no circumstances shall such a sum be tendered to the Obligee. Any new party or parties identified by the Obligee under this section shall immediately become a Surety or Sureties to this bond. If the Obligee determines that it is unable to identify such a party or parties, the Surety(ies) shall remedy the Default of the Principal under a) of this section.

    c) In the event that the Surety(ies) fail(s) to respond within thirty (30) business days to the Obligee's notice of Default, or to honor commitments to the full satisfaction of the Obligee under a) or b) above of this section, the remaining portion of the full penal sum may, at the election of the Obligee, immediately become due and owing and paid to a party or parties identified by the Obligee. In no circumstances shall such a sum be tendered to the Obligee. Any new party or parties identified by the Obligee under this paragraph shall immediately become a Surety or Sureties to this bond.

4) Surety shall have no obligation to the Principal, the Obligee or any other person or entity for any loss suffered by the Principal, the Obligee or any other person or entity by reason of acts or omission which are or could be covered by the Principal's general liability insurance, products liability insurance, completed operations insurance or any other insurance.

NOTWITHSTANDING ANYTHING CONTAINED IN THE AGREEMENT TO THE CONTRARY, THE LIABILITY OF THE PRINCIPAL AND SURETY UNDER THIS BOND IS LIMITED TO THE TERM BEGINNING THE _____ DAY OF _____, 20__, AND ENDING THE _____ DAY OF _____, 20__, AND ANY EXTENSIONS OR RENEWALS OF THE REFERENCED AGREEMENT SHALL BE COVERED UNDER THIS BOND ONLY WHEN CONSENTED TO IN WRITING BY THE SURETY. IT IS FURTHER AGREED THAT REFUSAL BY THE SURETY TO EXTEND THE TERM OF THIS BOND SHALL NOT CONSTITUTE A DEFAULT BY THE PRINCIPAL, AND SHALL NOT GIVE RISE TO A CLAIM OR DEMAND AGAINST THE SURETY UNDER THIS BOND

In accordance with regulations at 33 C.F.R. § 332.3(n)(5), the Surety shall provide the Obligee notification at least 120 days in advance of termination, revocation, or modification of this bond.

No right of action shall accrue on this bond to or for the use of any person or corporation other than the Obligee named herein, or their heirs, executors, administrators or successors.

Sealed with our seals and dated this _____ **day of** _____**, 2013.**

Principal: First Pennsylvania Resource, LLC

By:_____
Name/Title

Surety: RLI Insurance Company

By:_____
Greg E. Chilson, Attorney-in-Fact

Obligee: US Army Corps of Engineers

By:_____
Name/Title

PREPARED FOR:

380 SOUTHPOINTE BLVD., SUITE 405
CANONSBURG, PA 15317

NORTH BRANCH PIGEON CREEK MITIGATION BANK

PRELIMINARY JURISDICTIONAL WATERS OF THE U.S. DELINEATION PACKAGE

JULY 2013

PREPARED IN CONSULTATION WITH:

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.
1001 BOULDERS PARKWAY, SUITE 300
RICHMOND, VIRGINIA 23225
PHONE: 804.200.6500
TIMMONS GROUP PROJECT NO. 33548

EXECUTIVE SUMMARY

The "North Branch Pigeon Creek Mitigation Bank" ("NBPCMB") is approximately 17.4 acres and is located approximately 9 miles east of Washington in Washington County, Pennsylvania (see Figure 1: Vicinity Map). An overall project study area of 44.3 acres (Site) was reviewed in the preliminary development effort for NBPCMB. This delineation package is being submitted to gain confirmation of the jurisdictional resources within the overall 44.3 acre study area.

Timmons Group environmental scientist Jason Bohdan delineated the boundaries of "jurisdictional waters of the U.S." ("WUS"), including streams and wetlands, within the Site. This work was performed on behalf of "First Pennsylvania Resource, LLC" ("FPR"), the Sponsor and a wholly owned subsidiary of "Resource Environmental Solutions, LLC" ("RES"), on January 15, 2013.

The Site is primarily surrounded by forested and agricultural land and is bound on the east and south by mid to late-successional forest. The property currently resides in pasture, previously used for cattle production. Spanning the length of the Site is the North Branch of Pigeon Creek which ultimately flows into Pigeon Creek. An unnamed tributary from the northwestern portion of the Site flows into the North Branch Pigeon Creek onsite.

The Site was delineated based upon the methodology outlined in the 1987 "U.S. Army Corps of Engineers" ("COE") Wetland Delineation Manual, the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region and subsequently issued COE regulatory guidance regarding the identification of jurisdictional stream channels through the recognition of field indicators of an ordinary high water mark within drainage features. Using these methodologies, preliminary wetland delineation mapping was produced and is included along with the attached project area description and discussion for your review. During our delineation, approximately 1.46 acres of degraded "palustrine emergent wetlands" ("PEM") and 2,893 linear feet of stream channel were identified onsite.

PRELIMINARY JURISDICTIONAL WATERS OF THE U.S. DELINEATION PACKAGE
NORTH BRANCH PIGEON CREEK MITIGATION BANK

TABLE OF CONTENTS

MAPS

APPENDICES

1.0 PROJECT INFORMATION SHEET

General

Project Name:	North Branch Pigeon Creek Mitigation Bank
State:	Pennsylvania
Location:	Washington County
Latitude:	40° 10' 28.65" North
Longitude:	-80° 5' 43.89" West
Subject Property Size:	44.3 acres
HUC Code:	05020005 (Lower Monongahela)
State Water Plan:	Watershed Subbasin 19
Waterbodies:	Unnamed tributary to North Branch of Pigeon Creek, the North Branch of Pigeon Creek, and palustrine emergent wetlands (PEM) wetlands

Corresponding Information

USGS Quad and NWI	Wind Ridge
USDA Soils Map:	http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Applicant

Name:	First Pennsylvania Resource
Address:	380 Southpointe Blvd., Suite 405 Canonsburg, PA 15317
Contact:	Will Donaldson

Consultant

Name:	Timmons Group
Address:	1001 Boulders Parkway, Suite 300 Richmond, VA 23225
Telephone:	(804) 200-6500
Contacts:	Jason Bohdan: (804) 200-6386 Ben Virts: (804) 200-6442

2.0 INTRODUCTION

The "North Branch Pigeon Creek Mitigation Bank" ("NBPCMB") is approximately 17.4 acres in Washington County, Pennsylvania (see Figure 1: Vicinity Map). An overall project study area of 44.3 acres (Site) was reviewed in the preliminary development effort for NBPCMB. This delineation package is being submitted to gain confirmation of the jurisdictional resources within the overall 44.3 acre study area.

Timmons Group environmental scientist Jason Bohdan delineated the boundaries of "jurisdictional waters of the U.S." ("WUS"), including streams and wetlands, within the Site. This work was performed on behalf of "First Pennsylvania Resource, LLC" ("FPR"), the Sponsor and a wholly owned subsidiary of "Resource Environmental Solutions, LLC" ("RES"), on January 15, 2013.

3.0 SITE INFORMATON

3.1 Site Location

The Site is located approximately 9 miles east of Washington in Washington County, Pennsylvania (see Figure 1: Vicinity Map). Brownlee Road is adjacent to the Site. The Site is primarily comprised of forested and historically pastured fields and is bound on the east and south by mid to late-successional forest with agricultural land to the north and west.

3.2 Site Description

The Site consists of pasture, previously used for cattle production and mid-successional hardwood forest. The project study area drains to the Pigeon Creek and is located within the Lower Monongahela Watershed - HUC 05020005 (a contributing watershed within State Water Plan Watershed Subbasin 19) as shown in Figure 2: Hydrologic Unit Code Map.

4.0 METHODS OF DELINEATION

4.1 Preliminary Offsite Investigation/Data Review

A review of publicly available resources was performed prior to the onsite field investigation in order to determine if there is the potential for jurisdictional areas, and if present, the extent of these areas located within the Site. These mapping resources include "United States Geological Survey" ("USGS") maps, the "U.S. Department of Agriculture Natural Resource Conservation Service" ("NRCS") soils database, "U.S. Fish & Wildlife Service National Wetlands Inventory" ("NWI") database, and Aerial Imagery from Bing Maps-2012.

4.2 Field Investigation

The Site was delineated based upon the methodology outlined in the 1987 "U.S. Army Corps of Engineers" ("COE") Wetland Delineation Manual, the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region and subsequently issued COE regulatory guidance regarding the identification of jurisdictional stream channels through the recognition of field indicators of an ordinary high water mark within drainage features. Field data stations were established within close proximity to the wetland

boundary, usually within 10 to 20 feet, in order to document upland and wetland conditions existing along the jurisdictional boundary. Photographs were taken of the field data stations to depict existing site conditions along the boundary. Field data sheets are included in Appendix A. Representative Site Photographs are included in Appendix B.

5.0 DELINEATION FINDINGS

5.1 Preliminary Offsite Investigation/Data Review Findings

Review of USGS topographic map depicts a moderately steep valley with an unnamed tributary flowing east into the North Branch Pigeon Creek, which flows to the Pigeon Creek. The USGS map is attached for your review (see Figure 1: Vicinity Map).

No wetlands were identified within the Site limits during our review of the NWI mapping. The NWI shape files are included as a layer on Figure 3: Environmental Inventory Map.

The soils depicted by the NRCS soils map within the Site boundary are typical to their relative location in the landscape with poorly drained silt loams dominating the stream valley and well drained loams along the valley slopes. The majority of the stream valley is mapped as hydric soil types and consists of Morris (MoB and MoC) and Wellsboro (WeC and WeD) soils. Soils along the valley slopes are dominated by Oquaga (OgC and OgD) and Oquaga/Lordstown (OTF) soils. The mapped locations of the soils are shown on Figure 3: Environmental Inventory Map. The identified soils and brief summary of their attributes are included below.

- Dormont-Culleoka silt (DtD and DtF): Well drained, 15-25% slopes (DtD) and 25-50% slopes (DfF), located sides slopes of hills.
- Dormont silt loam (DoC): Moderately well drained, 8-15% slopes (DoC), located on sides slopes of hills.
- Fluvaquents loamny (Fa): Somewhat poorly drained, 0-3% slopes (Fa), located in floodplains and toe slopes.
- Newark silt loam (Nw): Somewhat poorly drained, 0-2% slopes, located in flood plains and bases of slopes.
- Guernsey silt loam (GeC): Moderately well drained, 8-15% slopes (GeC), located on side slopes of hills.
- Weikert-Culleoka complex (WeC, WeB, and WeD): 15-25% slopes (WeC), 3-8% slopes (WeB), and 15-25% slopes (WeD), located on side slopes of hills.

5.2 Onsite Determination/Findings

5.2.1 Jurisdictional Area Summary

The wetland delineation identified the presence of approximately 1.46 acres of “palustrine emergent” (“PEM”) wetlands and 2,893 linear feet of stream channel. PEM wetlands onsite were found within the floodplain of the main tributary and along hillside slopes throughout the Site. The majority of these wetlands were historically used as cattle pasture. The streams identified onsite consist of both headwater intermittent and perennial systems. The boundaries of the jurisdictional areas delineated onsite have been GPS located and are shown on Figure 4: Preliminary Jurisdictional Waters of the U.S. Delineation Map. A summary of the jurisdictional areas identified onsite is provided in Table 1.

Table 1: Jurisdictional Area Summary – North Branch Pigeon Creek Mitigation Bank Site

Area Description	Area Size (acres)	PFO (acres)	PSS (acres)	PEM (acres)	POW (acres)	Streams (L.F.)
North Branch Pigeon Creek Mitigation Bank	44.3	0.0	0.0	1.46	0.0	2,893

Notes:
1) PFO = palustrine forested wetlands, PSS = palustrine scrub-shrub wetlands, PEM = palustrine emergent wetlands, POW = palustrine open water.
2) Jurisdictional area acreages are preliminary based on field delineation with field GPS location and have not been confirmed.

5.2.1.1. Jurisdictional Area Vegetation

The majority of the wetlands identified onsite consisted of previously grazed PEM wetlands. Dominant vegetation found within the PEM wetland areas included foxtail sedge (*Carex alopecoidea*), poverty rush (*Juncus tenuis*), and purple-stemmed aster (*Aster puniceus*). Field data sheets that provide additional detail regarding the representative vegetative communities present within wetlands throughout the Site are included as Appendix A.

5.2.1.2. Jurisdictional Area Soils

The hydric soils observed within jurisdictional areas varied somewhat throughout the project study area but are all comprised of glacial till. The soils found within the jurisdictional areas onsite exhibit low chroma matrix colors with bright concentrations which are characteristic of reducing anaerobic conditions associated with the formation of hydric soils. The field data stations exhibit either a Depleted Matrix (F3) and/or Redox Dark Surface (F6) hydric soil indicators. Soil textures included loam and silty clay loam. Field data sheets are included in Appendix A and provide additional detail regarding the representative soils present within the wetlands.

5.2.1.3. Jurisdictional Area Hydrology

Indicators of wetland hydrology within the wetlands identified onsite included soil saturation within the upper 12 inches of the soil surface, a high water table, surface water, and oxidized rhizospheres on living roots. Wetlands along the project limits obtain hydrology from a high groundwater table and groundwater seeps originating at the side slopes of hills. Field data sheets that provide additional detail regarding the representative hydrologic indicators present within wetlands throughout the Site are included in Appendix A.

5.2.2 Upland Area Summary

During the field investigation of the Site approximately 52.7 acres of upland or non-jurisdictional areas were identified onsite. The dominant vegetation found in the upland areas included (*Loium arundinaceum*) and (*Poa pratensis*). Indicators of wetland hydrology were not observed within the upland areas onsite. Soils were typically dark brown (10YR3/4) to brown (10YR4/4) within the upper 14 inches. Soil textures included loam, silty loam, and silty clay loam.

6.0 REFERENCES

United States Department of Agriculture. Natural Resources Conservation Service http://websoilsurvey.nrcs.usda.gov/app/

United States Fish and Wildlife Service. National Wetlands Inventory http://www.fws.gov/nwi/

Wetland Training Institute. 1995. Field Guide for Wetland Delineation: 1987 Corps of Engineers Manual, Wetland Training Institute, Glenwood, NM, USA.

Cowardin, L. M., V. Carter, F. C. Golet, and E. T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C.

National List of Hydric Soils 2009, United States Department of Agriculture Natural Resource Conservation Service, http://soils.usda.gov/use/hydric/

United States Army Corps of Engineers. 2008. Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble, and J. F. Berkowitz. ERDC/EL TR-10-9. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

FIGURES

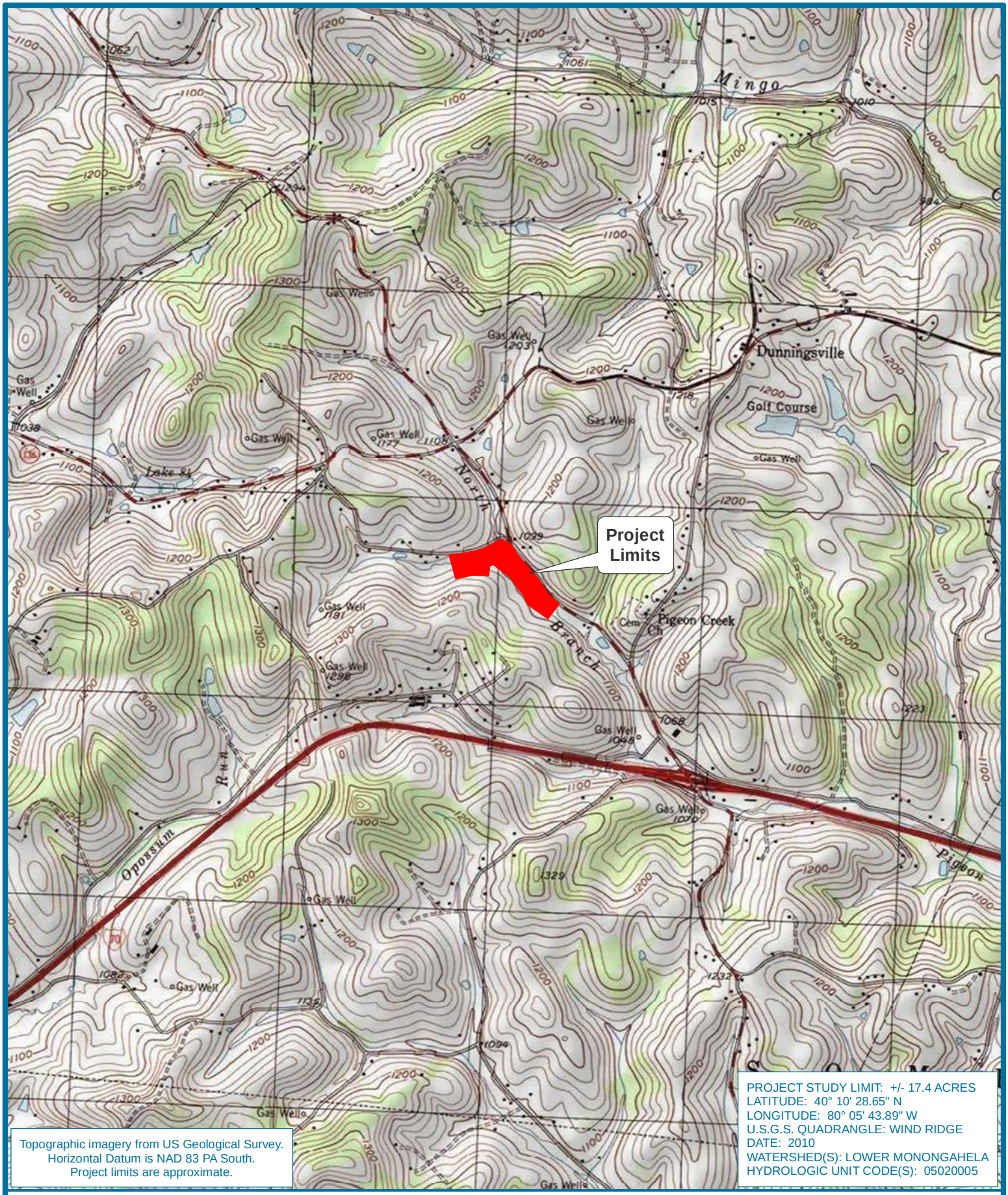


FIGURE 1

NORTH BRANCH PIGEON CREEK MITIGATION BANK

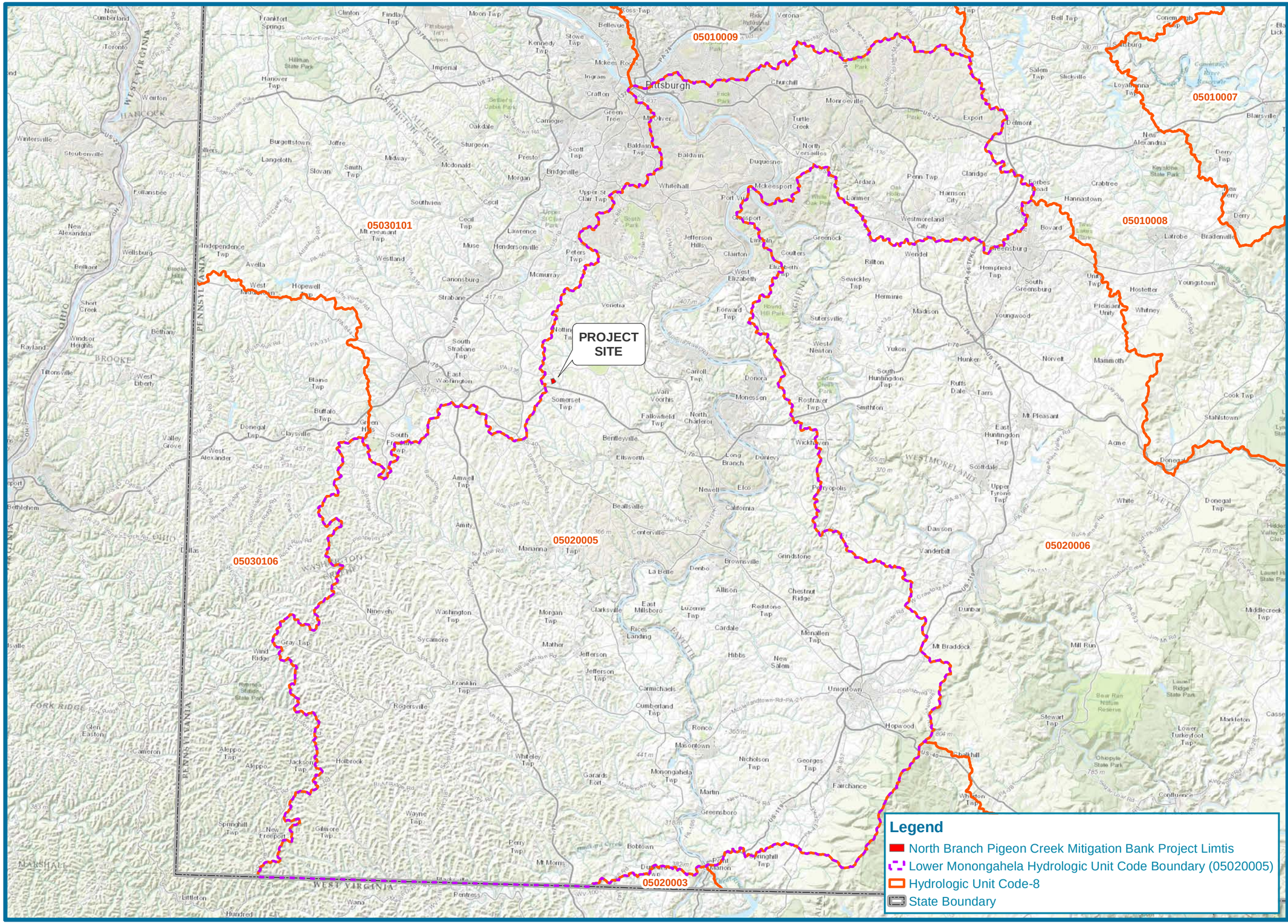
VICINITY MAP

WASHINGTON COUNTY, PENNSYLVANIA

J/N: 33548
Date: 04/10/13
Revised: ------

res Resource Environmental Solutions

Document Path: Y:\804\33548-RES_N._Branch_Pigeon_Cr._M.B\GIS\JD Package\Figure 1 - Vicinity Map.mxd



res
Resource Environmental Solutions

0 15,000 30,000
Feet

0 5 10
Miles

FIGURE 2

NORTH BRANCH PIGEON CREEK MITIGATION BANK

HYDROLOGIC UNIT CODE MAP

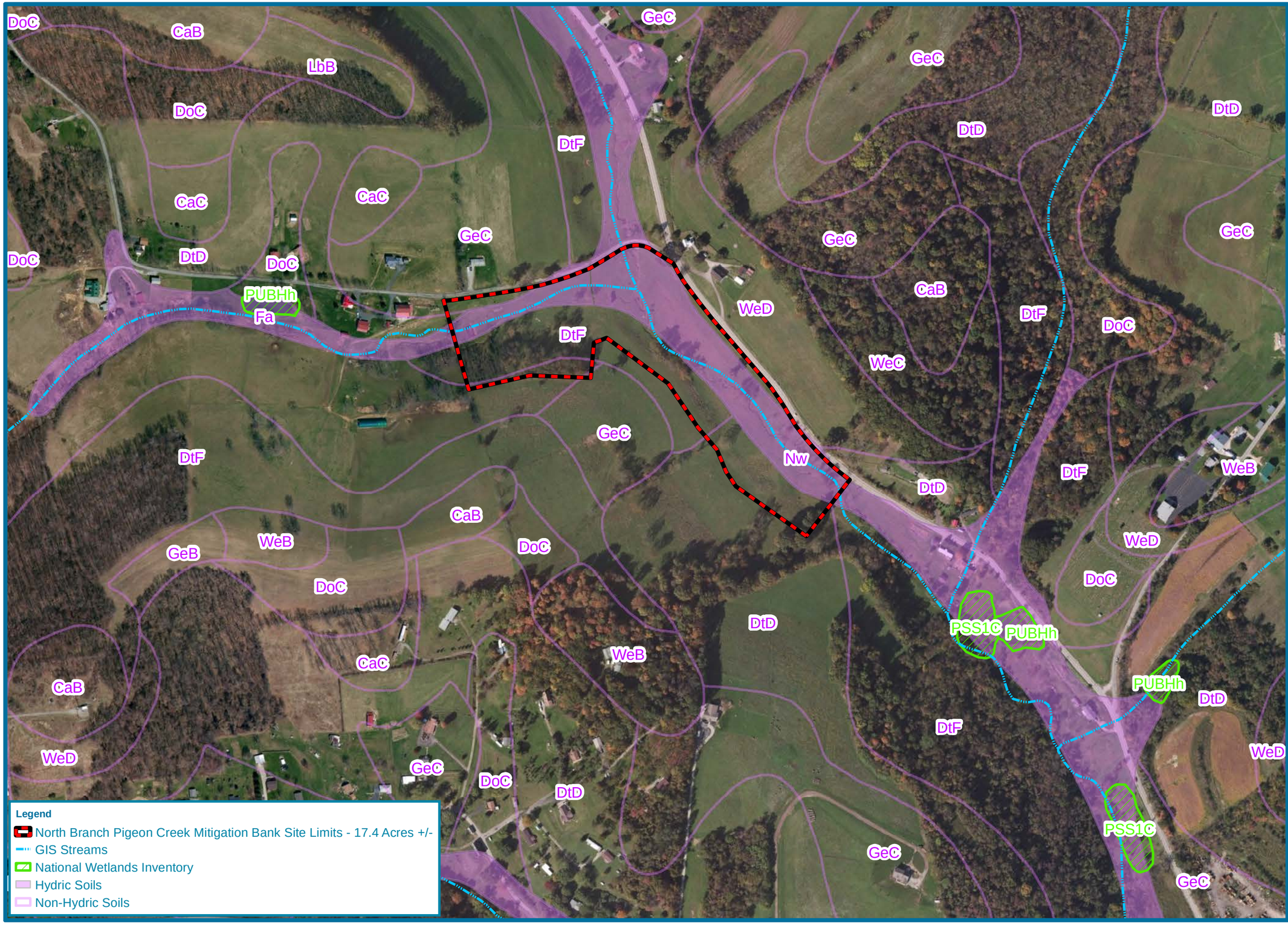
WASHINGTON COUNTY, PENNSYLVANIA

J/N: 33548
Date: 05/15/13
Revised: 00/00/00

REFERENCE

Hydrologic Unit Code data from US Geological Survey.
Topographic imagery from ESRI Online-2012.

Document Path: Y:\804\33548-RES_N_Branch_Pigeon_Cr._M.BIG\SJD Package\Figure 2 - N. Pigeon Creek HUC Map.mxd



Document Path: Y:\80A\33548-RES_N_Branch_Pigeon_Cr._M.BIG\SJD Package\Figure 3- North Branch Pigeon Creek MB EIM.mxd

res
Resource Environmental Solutions

N
W E
S

0 200 400
Feet

0 0.05 0.1
Miles

FIGURE 3

NORTH BRANCH PIGEON CREEK MITIGATION BANK

ENVIRONMENTAL INVENTORY MAP

WASHINGTON COUNTY, PENNSYLVANIA

J/N: 33548
Date: 05/07/13
Revised: ---------

REFERENCE

Wetland data from US Fish & Wildlife Service.
Soils data from National Resources Conservation Service.
Stream data from PA Dept. of Environmental Protection.
Aerial imagery from Bing Maps -2011.
Project limits based upon survey from Mctish, Kunkel & Assoc.

FIGURE 4

NORTH BRANCH PIGEON CREEK MITIGATION BANK

PRELIMINARY WATERS OF THE U.S. DELINEATION MAP

WASHINGTON COUNTY, PENNSYLVANIA

res Resource Environmental Solutions

PENNSYLVANIA
1983 NAD DATUM NORTH

SCALE 1"=250'

0 250' 500'

LEGEND

- PROJECT LIMITS (44.3 ACRES±)
- WATERS OF THE U.S.
- JURISDICTIONAL DITCH
- WETLAND FLAG
- FIELD DATA STATION
- PALUSTRINE EMERGENT (PEM) WETLAND
- STREAM SYSTEM IDENTIFICATION
- WETLAND SYSTEM IDENTIFICATION

NOTES:

1. WATERS OF THE U.S. WITHIN THE PROJECT STUDY LIMITS HAVE BEEN GPS AND SURVEY LOCATED BY TIMMONS GROUP.
2. WATERS OF THE U.S. HAVE NOT BEEN CONFIRMED BY THE U.S. ARMY CORPS OF ENGINEERS.
3. PROJECT STUDY LIMITS ARE BASED ON A BOUNDARY SURVEY BY MCTISH, KUNKEL & ASSOCIATES, DATED 02/05/2013.
4. AERIAL IMAGERY FROM ESRI ONLINE-2012 .

Resource I D	Classification							Resource Description Notes*
	PFO (ft^2)	PEM (ft^2)	PSS (ft^2)	POW (ft^2)	PERENNIAL & INTERMITTENT STREAMS (l.f.)	EPHEMERAL STREAMS (l.f.)	DITCH (l.f.)	
A		71.14						NT/V
B		439.18						NT/V
C		188.63						NT/V
D		4,275.39						NT/V
E		2,203.87						NT/V
F		1,835.09						NT/V
G		39,989.35						NT/V
H		1,167.12						NT/V
I		1,103.20						NT/V
J		8,563.06						NT/V
K		3,938.55						NT/V
L					880			NT/NV
M					2,013			NT/NV
Total	**0**	**63,775**	**0**	**0**	**2,893**		**0**	
Total Wetland Area =		**63,774.58** ft^2			**1.46**		**Acres**	

* T=Tidal; NT=Nontidal; V=Vegetated, NV=Non-Vegetated, IS=Hydrologically Isolated; NJ=Non-Jurisdictional; PFO=Palustrine Forested Wetland; PEM=Palustrine Emergent Wetland; PSS=Palustrine Scrub-Shrub Wetland

APPENDIX A
FIELD DATA SHEETS

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: North Branch Pigeon Creek Mitigation Bank City/County: Eighty Four/ Washington Sampling Date: 1/15/13

Applicant/Owner: First Pennsylvania Resource, LLC. State: PA Sampling Point: FDS-1

Investigator(s): Jason Bohdan Section, Township, Range: Somerset Township

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none

Slope (%): 0-0.5 Lat: 31 58 11.39 N Long: 131 29 85.30 W Datum: NAD83

Soil Map Unit Name: DtF (Dormont-Culleoka silt loams) NWI classification: none

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

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

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

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): 0
Water Table Present?	Yes ✓	No _____	Depth (inches): 1
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): 1

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

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

Sampling Point: FDS-1

	Absolute % Cover	Dominant Species?	Indicator Status
Tree Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum (Plot size: 15)			
1. Carex alopecoidea	90	YES	FACW
2. Carex lurida	10	NO	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	100 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= 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]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five Vegetation Strata:

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

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

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

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: FDS-1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-11	2.5 YR 4/2	85	5 YR 4/6	15	C	M	Loam	
11-16	7.5 YR 4/6	8					Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) (MLRA 147, 148)
- ___ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ___ 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): 0.00

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: North Branch Pigeon Creek Mitigation Bank City/County: Eighty Four/ Washington Sampling Date: 1/15/13

Applicant/Owner: First Pennsylvania Resource, LLC. State: PA Sampling Point: FDS-2

Investigator(s): Jason Bohdan Section, Township, Range: Somerset Township

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none

Slope (%): 0-0.5 Lat: 31 57 85.72 N Long: 131 29 39.75 W Datum: NAD83

Soil Map Unit Name: DtF (Dormont-Culleoka silt loams) NWI classification: none

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

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

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

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): 0
Water Table Present?	Yes _____	No ✓	Depth (inches): >16
Saturation Present? (includes capillary fringe)	Yes _____	No ✓	Depth (inches): >16

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

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

Remarks:

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

Sampling Point: FDS-2

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum (Plot size: 15)			
1. Poa pratensis	60	YES	FACU
2. Lolium arundinaceum	20	YES	FACU
3. Carex alopecoidea	10	NO	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	90 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	0	x 3 =	0
FACU species	80	x 4 =	320
UPL species	0	x 5 =	0
Column Totals:	90 (A)		340 (B)

Prevalence Index = B/A = 3.78

Hydrophytic Vegetation Indicators:

___ 1- Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five Vegetation Strata:

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

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

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

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: FDS-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 Features %	Type[1]	Loc[2]	Texture	Remarks
0-14	10 YR 4/4	100					Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) (MLRA 147, 148)
- ___ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ___ 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): 0.00

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: North Branch Pigeon Creek Mitigation Bank City/County: Eighty Four/ Washington Sampling Date: 1/15/13

Applicant/Owner: First Pennsylvania Resource, LLC. State: PA Sampling Point: FDS-3

Investigator(s): Jason Bohdan Section, Township, Range: Somerset Township

Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none

Slope (%): 0-0.5 Lat: 31 58 60.10 N Long: 131 32 96.81 W Datum: NAD-83

Soil Map Unit Name: Nw (Newark silt loam) NWI classification: _____

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

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

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

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

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

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ✓ High Water Table (A2)
- ✓ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ✓ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No ✓	Depth (inches): 0
Water Table Present?	Yes ✓	No _____	Depth (inches): >8
Saturation Present? (includes capillary fringe)	Yes ✓	No _____	Depth (inches): >8

Wetland Hydrology Present? Yes ✓ No _____

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

Remarks:

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

Sampling Point: FDS-3

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Sapling Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	= Total Cover		
Herb Stratum (Plot size: 15)			
1. Carex alopecoidea	70	YES	FACW
2. Juncus effusus	15	NO	FACW
3. Juncus tenuis	10	NO	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	95 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= 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]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Five Vegetation Strata:

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

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

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

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: FDS-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 Features %	Type[1]	Loc[2]	Texture	Remarks
0-5	10 YR 4/2	85	7.5 YR 4/6	15			Silty Clay Loam	
5-14	10 YR 4/2	80	10 YR 4/3	20			Silty Clay Loam	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(LRR N, MLRA 147, 148)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7)
- ___ Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- ___ Thin Dark Surface (S9) **(MLRA 147, 148)**
- ___ Loamy Gleyed Matrix (F2)
- ✓ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- ___ Umbric Surface (F13) **(MLRA 136, 122)**
- ___ Piedmont Floodplain Soils (F19) **(MLRA 148)**

Indicators for Problematic Hydric Soils[3]:

- ___ 2 cm Muck (A10) **(MLRA 147)**
- ___ Coast Prairie Redox (A16) (MLRA 147, 148)
- ___ Piedmont Floodplain Soils (F19) (MLRA 136, 147)
- ___ 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): 0.00

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

Remarks: