

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): September 23, 2016

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: JD Form 1 of 1; SAC # 2015-01581; Blakely Road UA

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: South Carolina County/parish/borough: **Williamsburg** City: **Town of Salters**
Center coordinates of site (lat/long in degree decimal format): Lat. **33.9738° N**, Long. **-80.471° W**.
Universal Transverse Mercator: **NAD 83**

Name of nearest waterbody: **Ox Swamp**

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Black River**

Name of watershed or Hydrologic Unit Code (HUC): **Black River HUC: 03040205_07**

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date:

Field Determination. Date(s): **July 19, 2016**

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [Required]

Waters subject to the ebb and flow of the tide.

Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.

Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):¹

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs
- Non-RPWs that flow directly or indirectly into TNWs
- Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
- Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
- Impoundments of jurisdictional waters
- Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: linear feet: width (ft) and/or acres.

Wetlands: **10** acres.

c. Limits (boundaries) of jurisdiction based on: 1987 Delineation Manual, Pick List, Pick List

Elevation of established OHWM (if known): .

2. Non-regulated waters/wetlands (check if applicable):³ [Including potentially jurisdictional features that upon assessment are NOT waters or wetlands]

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

- Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: **One non-jurisdictional drainage ditch is located within the project boundary and provides a hydrologic connection between Wetland A and the pRPW (Ox Swamp).**

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW

Identify TNW: **Black River.**

Summarize rationale supporting determination: **Report No. 6 of the U.S. Army Corps of Engineers 1977 Navigability Study: The Corps presently classifies the Black River as a "Navigable water of the U.S." from its mouth at R.M. 0 on the Great Pee Dee River near Georgetown, South Carolina to the Seaboard Coast Line Railroad bridge at R.M. 49.6.**

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:

Watershed size: **209,661 acres** ;

Drainage area: **5,560 acres**

Average annual rainfall: **51 inches**

Average annual snowfall: **0-1 inches**

(ii) Physical Characteristics:

(a) Relationship with TNW:

Tributary flows directly into TNW.

Tributary flows through tributaries before entering TNW.

Project waters are **1-2** river miles from TNW.

Project waters are **1 (or less)** river miles from RPW.

Project waters are **1-2** aerial (straight) miles from TNW.

Project waters are **1 (or less)** aerial (straight) miles from RPW.

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

Project waters cross or serve as state boundaries. Explain: **Project waters do not cross or serve as state boundaries.**

Identify flow route to TNW⁵: **The pRPW, Ox Swamp, flows directly into the Black River, a TNW.**

Tributary stream order, if known: **The tributary is a 4th order stream..**

(b) General Tributary Characteristics (check all that apply):

Tributary is: Natural
 Artificial (man-made). Explain:
 Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):

Average width: **15-20** feet
Average depth: feet
Average side slopes: **Vertical (1:1 or less).**

Primary tributary substrate composition (check all that apply):

Silts Sands Concrete
 Cobbles Gravel Muck
 Bedrock Vegetation. Type/% cover:
 Other. Explain:

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Tributaries in this watershed are typically low gradient, low velocity and therefore do not experience high levels of erosion and would be considered stable..**

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: **Meandering. Based on a site visit conducted on 7/19/16 and a review of USGS topo maps and aerial photography the pRPW is situated in a naturally low lying drainage area and has natural sinuosity.**

Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: **Perennial flow**

Estimate average number of flow events in review area/year: **20 (or greater)**

Describe flow regime: **Based on a site visit conducted on 1/28/16, 3/11/16, and 7/9/16, USGS topographic survey information, the National Wetlands Inventory and aerial photographs, the perennial RPW is situated in a naturally low lying area and supports an approximately 1,000 foot wide riparian corridor. The tributary follows a declining gradient and flows directly into the Black River. The pRPW is depicted in USGS topographic maps and clearly defined on LiDAR maps and in aerial photographs. This pRPW receives run off from approximately 5,000 acres.**

Other information on duration and volume: **The pRPW receives flow from several smaller tributaries, surrounding wetlands, and overland sheet flow. This tributary was determined to have flow at least 90% of the year under normal conditions.**

Surface flow is: **Discrete and confined.** Characteristics: **Based on a site visit conducted on 7/19/16 flow was determined to be confined within the bed and banks of the tributary..**

Subsurface flow: **Unknown.** Explain findings:

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks
 OHWM⁶ (check all indicators that apply):
 clear, natural line impressed on the bank the presence of litter and debris
 changes in the character of soil destruction of terrestrial vegetation
 shelving the presence of wrack line
 vegetation matted down, bent, or absent sediment sorting
 leaf litter disturbed or washed away scour
 sediment deposition multiple observed or predicted flow events
 water staining abrupt change in plant community
 other (list):
 Discontinuous OHWM.⁷ Explain:

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

High Tide Line indicated by: Mean High Water Mark indicated by:

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

⁶ A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷Ibid.

- | | |
|--|--|
| <input type="checkbox"/> oil or scum line along shore objects | <input type="checkbox"/> survey to available datum; |
| <input type="checkbox"/> fine shell or debris deposits (foreshore) | <input type="checkbox"/> physical markings; |
| <input type="checkbox"/> physical markings/characteristics | <input type="checkbox"/> vegetation lines/changes in vegetation types. |
| <input type="checkbox"/> tidal gauges | |
| <input type="checkbox"/> other (list): | |

(iii) **Chemical Characteristics:**

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: **Within the tributary water would be clear with possible turbidity due to suspended solids. Downstream reaches of the pRPW are described as having an increasing trend in pH and low dissolved oxygen conditions. Aquatic life is not supported, however recreation is. There is a significant increase in fecal coliform bacteria concentration. Land use in this watershed consist of approximately 34.1% forested wetland, 31.6% forested land, 25.8% agricultural, 5.9% urban land, 2.3% nonforested wetland, 0.2% water, and 0.1% barren land. According to the SCDHEC website there is low to moderate potential for growth in this watershed.**

Identify specific pollutants, if known: **The review area is located within a relatively undeveloped watershed. However, this watershed is comprised of approximately 25.8% agricultural and 5.9% urban land. The potential exist for herbicides and other pollutants, such as fertilizers to enter the pRPW. This type of land use requires regular manipulation of the soil, which creates increased amounts of suspended sediments within downstream tributaries. Run off from highways and directly from urban areas provides the potential for increased fertilizers and fecal coliform as well as oils and other chemicals used in vehicles and on lawns. These types of pollutants have the potential to effect dissolved oxygen levels in a system documented as having an increasing trend in five-day biochemical oxygen demand.**

(iv) **Biological Characteristics. Channel supports (check all that apply):**

Riparian corridor. Characteristics (type, average width): **Based on a review of aerial photographs the pRPW supports an approximately 1,000' wide riparian corridor. This riparian zone contributes to the overall health of the aquatic system by filtering out pollutants, providing essential habitat, slowing flood waters and preventing erosion.**

Wetland fringe. Characteristics:

Habitat for:

Federally Listed species. Explain findings:

Fish/spawn areas. Explain findings:

Other environmentally-sensitive species. Explain findings:

Aquatic/wildlife diversity. Explain findings: **According to "Connectivity of Streams and Wetlands to**

Downstream Waters: A Review and Synthesis of the Scientific Evidence" prepared by the Office of Research and Development U.S. Environmental Protection Agency, for organisms capable of significant upstream movement, headwater streams, including ephemeral and intermittent streams, can increase both the amount and quality of habitat available to those organisms. Many organisms require different habitats for different resources (e.g., food, spawning habitat, overwintering habitat), and thus move throughout the river network—both longitudinally and laterally—over their life cycles. For example, headwater streams can provide refuge habitat under adverse conditions, enabling organisms to persist and recolonize downstream areas once adverse conditions have abated. Headwater streams also provide food resources to downstream waters: as Progar and Moldenke (2002) state, "...headwater streams are the vertex for a network of trophic arteries flowing from the forest upland to the ocean." Headwater streams and small seasonal RPWs provide habitat for diverse and abundant stream invertebrates and serve as collection areas for terrestrial and riparian invertebrates that fall into them. These aquatic and terrestrial invertebrates can be transported downstream with water flow and ultimately serve as food resources for downstream organisms. Many fish feed on drifting insects, and these organisms can also settle out of the water column and become part of the local benthic invertebrate assemblage in downstream waters. Drift, however, has been shown to increase invertebrate mortality significantly, suggesting that most drifting organisms are exported downstream in the suspended detrital load.

The downstream drift of stream invertebrates and the contribution of terrestrial and riparian invertebrates to overall drift have been well documented.

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: **10** acres

Wetland type. Explain: **Palustrine Forested.**

Wetland quality. Explain: **Wetland A is partially impaired due to the creation of an approximately 4.5 acre berm that was placed around the wetland for the purpose and impounding water. Water that would naturally flow from Wetland A to Ox Swamp, through a naturally low lying drainage area depicted on USGS topographic maps and in Williamsburg County LiDAR, has been impeded and is now ponding within the delineated wetland. A pump system and man-made ditch now provide a hydrologic connection between Wetland A and Ox Swamp.**

Project wetlands cross or serve as state boundaries. Explain: **The project wetland does not cross or serve as state boundaries.**

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral flow**. Explain: **Flow from wetland A into the pRPW (Ox Swamp) is via a non-jurisdictional Ditch. It should be noted that prior to the construction of this ditch, based on USGS topo maps and Williamsburg County LiDAR flow would have been overland sheet flow during rain events through a naturally low lying drainage area. Based on site visits conducted on 4/11/2016 and 7/19/16 flow was observed between the project wetland and the on-site pRPW which is located down gradient in a low lying drainage area approximately 1500' west of the wetland.**

Surface flow is: **Discrete and confined**

Characteristics: **Flow from wetland A into the pRPW (Ox Swamp) is through a man-made drainage ditch. Flow was observed within this feature during site visits conducted on 4/11/2016 and 7/19/16 .**

Subsurface flow: **Unknown**. Explain findings:

Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

Directly abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain: **Flow from wetland A into the pRPW (Ox Swamp) is down gradient through a man-made drainage ditch. Flow was observed within this feature during site visits conducted on 4/11/2016 and 7/19/16.**

Ecological connection. Explain:

Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **1-2** river miles from TNW.

Project waters are **1-2** aerial (straight) miles from TNW.

Flow is from: **Wetland to navigable waters.**

Estimate approximate location of wetland as within the **500-year or greater** floodplain.

(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: **Wetland A is a forested depressional feature that is inundated in aerial photographs. Wetland A is partially impaired due to the creation of an approximately 4.5 acre berm that was placed around the wetland for the purpose and impounding water. Water that would naturally flow from Wetland A to Ox Swamp, through a naturally low lying drainage area depicted on USGS topographic maps and in Williamsburg County LiDAR, has been impeded and is now ponding within the delineated wetland. A pump system and man-made ditch now provide a hydrologic connection between Wetland A and Ox Swamp. .**

Identify specific pollutants, if known: **The review area is located within a relatively undeveloped watershed. Land use in this watershed consist of approximately 34.1% forested wetland, 31.6% forested land, 25.8% agricultural, 5.9% urban land, 2.3% nonforested wetland, 0.2% water, and 0.1% barren land. According to the SCDHEC website there is low to moderate potential for growth in this watershed. However, this watershed is comprised of approximately 25.8% agricultural and 5.9% urban land. The potential exist for herbicides and other pollutants, such as fertilizers to enter the pRPW. This type of land use requires regular manipulation of the soil, which creates increased amounts of suspended sediments within downstream tributaries. Run off from highways and directly from urban areas provides the potential for increased fertilizers and fecal coliform as well as oils and other chemicals used in vehicles and on lawns. These types of pollutants have the potential to effect dissolved oxygen levels in a system documented as having an increasing trend in five-day biochemical oxygen demand.**

(iii) **Biological Characteristics. Wetland supports (check all that apply):**

Riparian buffer. Characteristics (type, average width):

Vegetation type/percent cover. Explain: **Vegetation on site consists of predominantly Fac, Fac Wet, and Obligate species.**

Habitat for:

Federally Listed species. Explain findings:

Fish/spawn areas. Explain findings:

Other environmentally-sensitive species. Explain findings:

Aquatic/wildlife diversity. Explain findings: **This wetland system enhances wildlife diversity through timber type changes and the transition between upland and aquatic systems..**

3. **Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: **30 (or more)**

Approximately (**1,435.4**) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>	<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>
Y	198	N	11
N	6	N	1
N	5	N	1
N	3	N	1
N	1	N	.4
N	45	N	2
N	18	N	5.8
N	11	N	9
N	17	N	2.7
N	10	Y	153
N	54	N	9
N	5	N	17
Y	267	N	40
Y	225	Y	55
N	32	N	9
Y	42	N	1
N	3	N	3
N	2	N	2
N	1	N	7
N	9	N	6.5
N	7	N	30
N	4	N	7
N	1	N	7
N	19	N	12
N	30	N	2
N	13	N	13

Summarize overall biological, chemical and physical functions being performed: **The similarly situated wetlands contribute vital biological, chemical, and physical functions to the downstream TNW. This wetland system enhances wildlife diversity, acts as catch basins filtering sediment and pollution from the surrounding uplands, supports the downstream food web, and provides nutrient fixation, flood attenuation, and flow maintenance functions. (Wetlands adjacent to the tributary were determined by using a combination of NWI maps and the wetlands delineated as part of this determination).**

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D:
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:
3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: **The pRPW that is assessed in this form, along with all similarly situated adjacent freshwater wetlands are collectively performing functions consistent with the following: Biologically, wetlands adjacent to the pRPW include depressional wetlands. As such a variety of biological functions are being performed which include providing breeding grounds and shelter for aquatic species and foraging areas for wetland dependent species. These wetlands and the adjacent pRPW are essential in providing organic carbons in the form of their collective primary productivity to downstream waters, resulting in the nourishment of the downstream food web. Chemically, the pRPW and adjacent wetlands are providing the important collective functions of removal of excess nutrients into the downstream TNW. These pollutants, which are contributed to by runoff from surrounding uplands are prevented from being discharged downstream due to suspended sediments and other pollutants being retained within the wetlands. The low velocity of and gradient of the pRPW also contribute to the removal of pollutants because the suspended pollutants have time to settle out of the water. This reduces nitrogen and phosphorous loading downstream and effectively prevents oxygen depletion that can result from eutrophication. Physically, the pRPW and adjacent wetlands are collectively performing flow maintenance functions, including retaining runoff inflow and storing rain water, temporarily. Flow maintenance results in the reduction of downstream peak flows (discharge and volume), helping to maintain seasonal flow volumes and reducing the frequency of overbank events which flood adjacent properties. Increased water velocity also increases the amount of sediments and other pollutants in the TNW. Based on the collective functions described above and their importance to the biological, chemical, and physical integrity of the traditional navigable waters of the Black River, it has been determined that there is a significant nexus between the relevant reach of the tributary and all adjacent wetlands to the downstream TNW.**

Documentation for the Record only: Significant nexus findings for seasonal RPWs and/or wetlands abutting seasonal RPWs:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
 TNWs: linear feet width (ft), Or, acres.
 Wetlands adjacent to TNWs: acres.
2. **RPWs that flow directly or indirectly into TNWs.**
 Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: **Multiple site visits (including in the peak of the growing season) revealed flowing water. Stream geomorphic indicators of perennial flow included a channel within bed and banks which had a firm sandy bottom clear of vegetation and debris. Hydrologic indicators observed within the channel include even distribution of substrate and debris being continually washed downstream. Aerial photos depict a well-defined channel with uninterrupted flow into Green Swamp, which drains into the Potaligo River and eventually the Black River (a TNW), the USGS topographic maps depict a a dashed blue line feature (Ox Swamp) located within wetlands situated in a naturally low lying drainage area. Williamsburg County soil surveys depicts a 100% hydric soils. Williamsburg County LiDAR depicts low elevations and a defined channel. Based on the previously mentioned evidence, this perennial RPW was determined to have flow at least 90% of the year under normal conditions.**
 Tributaries of TNW where tributaries have continuous flow “seasonally” (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

Provide estimates for jurisdictional waters in the review area (check all that apply):
 Tributary waters: linear feet width (ft).
 Other non-wetland waters: acres.
Identify type(s) of waters:
3. **Non-RPWs⁸ that flow directly or indirectly into TNWs.**

⁸See Footnote # 3.

- Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- Tributary waters: linear feet width (ft).
 Other non-wetland waters: acres.

Identify type(s) of waters: .

4. Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.

- Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
 Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .
 Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.

- Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: **10** acres.

6. Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.

- Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. Impoundments of jurisdictional waters.⁹

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- Demonstrate that impoundment was created from "waters of the U.S.," or
 Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
 Demonstrate that water is isolated with a nexus to commerce (see E below).

Explain:

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰

- which are or could be used by interstate or foreign travelers for recreational or other purposes.
 from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
 which are or could be used for industrial purposes by industries in interstate commerce.
 Interstate isolated waters. Explain: .
 Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).
 Other non-wetland waters: acres.
Identify type(s) of waters: .
 Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

⁹ To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

¹⁰ Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
 - Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- Other: (explain, if not covered above): **One non-jurisdictional, manmade, drainage ditch is located within the project boundary and provides a hydrologic connection between Wetland A and the pRPW (Ox Swamp).**

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- Lakes/ponds: acres.
- Other non-wetland waters: acres. List type of aquatic resource: .
- Wetlands: acres.

SECTION IV: DATA SOURCES.

- A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):**
- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **The project area is depicted on sheets 1-2 of 2 of the sketch titled " SAC 2015-01581 / Approximate Wetland Boundary / Applicant: Eugene Brown / Williamsburg County, SC," and dated August 23, 2016.**
 - Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
 - Data sheets prepared by the Corps:
 - Corps navigable waters' study: **Report No. 6 of the U.S. Army Corps of Engineers 1977 Navigability Study.**
 - U.S. Geological Survey Hydrologic Atlas:
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
 - U.S. Geological Survey map(s). Cite scale & quad name: **Kellahan Crossroads Quad; USGS topographic survey information within Kellahan Crossroads Quad depicts the project area as containing a depressional wetland, that is situated in a lowlying drainage area that decreases in elevation rapidly towards Ox Swamp.**
 - USDA Natural Resources Conservation Service Soil Survey. Citation: **Williamsburg County Soil Survey Sheets 60; According to the Soil Survey of Williamsburg County (Ogg 2013), three soil mapping units are contained within project boundary. The site is comprised of a combination of the following soil types: Eunola loamy sand, Emporia loamy sand, and Gourdin loam. Eunola loamy sand is a moderately well drained non-hydric soil that contains hydric soils, this soil is located in uplands to the west of the delineated wetland. Emporia loamy sand is a well drained non-hydric soil located in uplands to the east of the delineated wetland. Gourdin loam is a poorly drained all hydric soil and is depicted at the location of the delineated wetland.**
 - National wetlands inventory map(s). Cite name: **U42P and PFO1B; The project area is comprised of a combination of forested uplands and saturated palustrine wetlands.**
 - State/Local wetland inventory map(s): .
 - FEMA/FIRM maps: .
 - 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
 - Photographs: Aerial (Name & Date): **Williamsburg County Aerial Index 99:11227:199 and SCDNR 2006. Aerial photographs depict inundation within the delineated wetland.**
 - or Other (Name & Date): **Site photos submitted by the agent taken on 4/4/2016 and site photos taken by the Corps during a site visit conducted on 3/11/16, and 7/9/16.**
 - Previous determination(s). File no. and date of response letter: .
 - Applicable/supporting case law: .
 - Applicable/supporting scientific literature: **"Connectivity of Streams and Wetlands to Downstream Waters: A Review and Synthesis of the Scientific Evidence" prepared by the Office of Research and Development U.S. Environmental Protection Agency.**
 - Other information (please specify): **Williamsburg County LiDAR with Hillshade Overlay.**

B. ADDITIONAL COMMENTS TO SUPPORT JD: This form addresses a 20 acre tract (a portion of TMS 45-231-001) that contains 10 acres of jurisdictional freshwater wetlands adjacent to Ox Swamp. One man-made non-jurisdictional ditch is located on site and provides a direct surface hydrologic connection between the Wetland A and Ox Swamp (pRPW).

Wetland boundaries were verified during the site visit conducted on July 19, 2016, based on the criteria set forth by the 1987 Wetland Delineation Manual. These wetlands were determined to be jurisdictional based on a hydrological connection, provided by non-jurisdictional ditch into the pRPW located down gradient. Topographic relief (as depicted in USGS topographic maps and in Williamsburg County LiDAR) suggest a naturally low lying drainage area at this location. During the above reference site visit wetlands were found to be inundated. Wetlands within the project area are currently part of a wetland system that provides pollution filtration, essential habitat, and flood prevention to the Black River. Wetland A addressed in this form is determined to have a significant nexus to the downstream TNW, as discussed in Section IIIC above.

Wetland A is partially impaired due to the creation of approximately 4.5 acre berm that was placed around the wetland for the purpose of impounding water. Water that would naturally flow from Wetland A to Ox Swamp, through a naturally low lying drainage area depicted on USGS topographic maps and in Williamsburg County LiDAR, has been impeded and is now ponding within the delineated wetland.

Drainage areas and/or hydrologic connections were determined using a combination of observations on-site, USGS topo maps, and Williamsburg County LiDAR.