

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): March 12, 2020

B. DISTRICT OFFICE, FILE NUMBER, FILE NAME: CESAC-RDE; JD Form 1 of 6; SAC-2019-01817 Duke Energy / Black River Solar Expansion Site

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: South Carolina County/parish/borough: **Sumter** City:
Center coordinates of site (lat/long in degree decimal format): Lat. 33.9570°, Long. -80.1979 °.
Universal Transverse Mercator:

Name of nearest waterbody: **Unnamed tributary of Rocky Bluff Swamp**

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

Name of watershed or Hydrologic Unit Code (HUC): **03040205-01**

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): **January 28, 2020**

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: **950** linear feet: **10** width (ft) and/or **0.21** acres.

Wetlands: acres.

c. Limits (boundaries) of jurisdiction based on: **Established by OHWM., 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: .

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: .

Summarize rationale supporting determination: .

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: **Pick List** ;

Drainage area: **Pick List**

Average annual rainfall: inches

Average annual snowfall: inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

Tributary flows directly into TNW.

Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.

Project waters are **Pick List** river miles from RPW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Project waters are **Pick List** aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain: .

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

Identify flow route to TNW⁵:
Tributary stream order, if known:

(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: feet
Average depth: feet
Average side slopes: **Pick List**.

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:

Presence of run/riffle/pool complexes. Explain:

Tributary geometry: **Pick List**.

Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: **Pick List**

Estimate average number of flow events in review area/year: **Pick List**

Describe flow regime:

Other information on duration and volume:

Surface flow is: **Pick List**. Characteristics:

Subsurface flow: **Pick List**. 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:
 oil or scum line along shore objects survey to available datum;
 fine shell or debris deposits (foreshore) physical markings;
 physical markings/characteristics vegetation lines/changes in vegetation types.
 tidal gauges
 other (list):

(iii) **Chemical Characteristics:**

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

Explain:

Identify specific pollutants, if known:

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.

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

- Riparian corridor. Characteristics (type, average width): .
- 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: .

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: acres

Wetland type. Explain: .

Wetland quality. Explain: .

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**

Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

Directly abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain: .

Ecological connection. Explain: .

Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List**.

Estimate approximate location of wetland as within the **Pick List** 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: .

Identify specific pollutants, if known: .

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

- Riparian buffer. Characteristics (type, average width): .
- Vegetation type/percent cover. Explain: .
- Habitat for:
 - Federally Listed species. Explain findings: .
 - Fish/spawn areas. Explain findings: .
 - Other environmentally-sensitive species. Explain findings: .
 - Aquatic/wildlife diversity. Explain findings: .

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

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately () 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> |
|------------------------------|------------------------|------------------------------|------------------------|
| █ | █ | █ | █ |

Summarize overall biological, chemical and physical functions being performed: _____

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: _____

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: **This tributary (labeled "Perennial Stream" on the drawing) is depicted on the topographic map**

as a solid blue line and on the aerials as a linear feature. A portion of this onsite tributary is mapped palustrine forested wetlands (PFO1Bd) and the downstream (offsite) tributary is also mapped palustrine forested wetlands (PFO1Bd and PSS1Bd). The portion of this tributary immediately adjacent and downstream of the project site was previously determined to have perennial flow (JD SAC 2017-00833). During the site visit, this tributary was observed as having a slightly sinuous channel within bed and banks, an OHWM, clear flowing water present, and a sandy channel free of leaf litter and debris. Based on this information, this tributary was determined to have perennial flow..

- 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: 950 linear feet 10 width (ft).
 - Other non-wetland waters: . acres.
- Identify type(s) of waters: .

3. Non-RPWs⁸ that flow directly or indirectly into TNWs.

- 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: . 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

⁸See Footnote # 3.

⁹To 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.

- 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):

- 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): .

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: **Report and sketches by ERM.**
- 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:
- 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: **Mayesville Quad; The topographic map depicts this perennial RPW as a solid blue line that receives flow from two upstream tributaries on site..**
- USDA Natural Resources Conservation Service Soil Survey. Citation: **Pg. 58; The soil survey maps this tributary as Duplin, a non-hydric soil.**
- National wetlands inventory map(s). Cite name: **U21, PFO1Bd.**
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps:
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): **SCDNR 2006, 99:11224:31; The aerials depict this tributary as a shaded linear feature that continues southwest toward Rocky Bluff Swamp.**
or Other (Name & Date): **Site photographs submitted by the agent dated August 2019.**

Previous determination(s). File no. and date of response letter:

Applicable/supporting case law:

Applicable/supporting scientific literature:

Other information (please specify): **Jurisdictional Determination on adjacent property located west of project site (SAC 2017-00833, letter dated 30 JAN 2019).**

B. ADDITIONAL COMMENTS TO SUPPORT JD: This tributary (labeled "Perennial Stream" on the drawing) is depicted on the topographic map as a solid blue line and on the aerials as a linear feature. A portion of this onsite tributary is mapped palustrine forested wetlands (PFO1Bd) and the downstream (offsite) tributary is also mapped palustrine forested wetlands (PFO1Bd and PSS1Bd). The portion of this tributary immediately adjacent and downstream of the project site was previously determined to have perennial flow (JD SAC 2017-00833). During the site visit, this tributary was observed as having a slightly sinuous channel within bed and banks, an OHWM, clear flowing water present, and a sandy channel free of leaf litter and debris. Based on this information, this tributary was determined to have perennial flow..

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): March 12, 2020

B. DISTRICT OFFICE, FILE NUMBER, FILE NAME: CESAC-RDE; JD Form 2 of 6; SAC-2019-01817 Duke Energy / Black River Solar Expansion Site

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: South Carolina County/parish/borough: **Sumter** City:
Center coordinates of site (lat/long in degree decimal format): Lat. 33.9570°, Long. -80.1979 °.
Universal Transverse Mercator:

Name of nearest waterbody: **Unnamed tributary of Rocky Bluff Swamp**

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

Name of watershed or Hydrologic Unit Code (HUC): **03040205-01**

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): **January 28, 2020**

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: (**Seasonal Stream 1**) 2,247 linear feet: **10**width (ft) and/or **0.51** acres.

Wetlands: (**Wetland 5**) **0.70** acres.

c. Limits (boundaries) of jurisdiction based on: **Established by OHWM., 1987 Delineation Manual, 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: **Several linear features were observed within the review area and determined to be non-jurisdictional ditches. These linear features were determined to be man-made agricultural ditches that do not have an OHWM. One of these linear features provides a direct hydrological connection from Wetland 5 to the downstream TNW via Seasonal Stream 1. Additionally, within the review area there are two Carolina Bays mapped Rembert, a hydric soil, on the soil survey. These areas are mapped uplands on the NWIs, and soil samples taken within these areas found non-hydric soils. Therefore, these areas were determined to consist of uplands .**

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: .

Summarize rationale supporting determination: .

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: **179,089 acres** ; HUC **03040205-01**

Drainage area: **393 acres**

Average annual rainfall: **43.75-52.54 inches**

Average annual snowfall: **0.2 inches**

(ii) **Physical Characteristics:**

(a) **Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through **3** tributaries before entering TNW.

Project waters are **2-5** river miles from TNW.

Project waters are **1 (or less)** river 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 are **2-5** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: N/A.

Identify flow route to TNW⁵: **The unnamed tributary labeled as Seasonal Stream 1 flows into an unnamed perennial RPW on site, which flows southwest into Rocky Bluff Swamp, a pRPW. Rocky Bluff Swamp flows southeast into the Black River, a TNW.**

Tributary stream order, if known: **This seasonal RPW is a 1st 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: **6** feet
Average depth: **10** 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: The tributary is relatively stable with no erosion or sloughing banks observed.

Presence of run/riffle/pool complexes. Explain: N/A.

Tributary geometry: **Relatively straight.**

Tributary gradient (approximate average slope): **0-1** %

(c) Flow:

Tributary provides for: **Seasonal flow**

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

Describe flow regime: **This tributary flows after storm events and during the wet months.**

Other information on duration and volume: **This tributary receives flow from the upstream wetland and overland sheetflow from the adjacent uplands.**

Surface flow is: **Discrete and confined.** Characteristics: .

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:
 oil or scum line along shore objects survey to available datum;
 fine shell or debris deposits (foreshore) physical markings;
 physical markings/characteristics vegetation lines/changes in vegetation types.

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.

- tidal gauges
- other (list):

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
 Explain: **The water flowing within the tributary is clear with no discoloration or oily film observed. The watershed is comprised of Rocky Bluff Swamp and its tributaries and is located in the Sandhills and Upper Coastal Plain regions of SC. Land use in this watershed includes 41.1% agricultural land, 26.6% forested land, 25.4% forested wetland, 5.5% urban land, 1% nonforested wetland, 0.3% water, and 0.1% barren land. There are a total of 339.7 stream miles and 441.1 acres of lake waters in this watershed .**

Identify specific pollutants, if known: **According to the SCDHEC Watersheds Assessment for Rocky Bluff Swamp (HUC 03040205-01), the downstream monitoring station on the Black River (PD-353) states that this is a blackwater system characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they are typical of values seen in blackwater systems. Aquatic life uses are fully supported. Recreational uses are partially supported due to fecal coliform excursions, which are compounded by a significant increasing trend in fecal coliform bacteria. A fish consumption advisory has been issued for the Black River due to the presence of mercury.**

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

- Riparian corridor. Characteristics (type, average width):
- 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: **This tributary is providing important aquatic habitat within a predominately upland site and is providing a travel corridor for aquatic fauna.**

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: **(Wetland 5) 0.70** acres
 Wetland type. Explain: **Palustrine.**
 Wetland quality. Explain: **Slightly impaired.**
 Project wetlands cross or serve as state boundaries. Explain: **N/A.**

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral flow.** Explain:

Surface flow is: **Discrete and confined**
 Characteristics:

Subsurface flow: **Unknown.** Explain findings:
 Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

- Directly abutting
- Not directly abutting
 - Discrete hydrologic connection. Explain: **Wetland 5 is intersected by a non-jurisdictional ditch that flows directly into the onsite Seasonal Stream 1.**
 - Ecological connection. Explain:
 - Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **2-5** river miles from TNW.
 Project waters are **2-5** aerial (straight) miles from TNW.
 Flow is from: **Wetland to navigable waters.**
 Estimate approximate location of wetland as within the **100 - 500-year** 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: **No discoloration or oily film was located on the surface of Wetland 5. The watershed is comprised of Rocky Bluff Swamp and its tributaries and is located in the Sandhills and Upper Coastal Plain regions of SC. Land use in this watershed includes 41.1% agricultural land, 26.6% forested land, 25.4% forested wetland, 5.5% urban land, 1% nonforested wetland, 0.3% water, and 0.1% barren land. There are a total of 339.7 stream miles and 441.1 acres of lake waters in this watershed .**

Identify specific pollutants, if known: **According to the SCDHEC Watersheds Assessment for Rocky Bluff Swamp (HUC 03040205-01), the downstream monitoring station on the Black River (PD-353) states that this is a blackwater system characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they are typical of values seen in blackwater systems. Aquatic life uses are fully supported. Recreational uses are partially supported due to fecal coliform excursions, which are compounded by a significant increasing trend in fecal coliform bacteria.**

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain:
- 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 is providing important aquatic habitat and wildlife diversity in a drainage area dominated by agricultural land use.**

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

All wetland(s) being considered in the cumulative analysis: **1**
 Approximately (**0.70**) 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> |
|------------------------------|------------------------|------------------------------|------------------------|
| N | 0.70 | | |

Summarize overall biological, chemical and physical functions being performed: **The 1st order tributary, and its adjacent wetland, are providing important biological, chemical, and physical functions. According to the SCDHEC Watershed Assessment, this watershed is comprised of 41.1% agricultural land, 26.6% forested land, 25.4% forested wetland, 5.5% urban land, 1% nonforested wetland, 0.3% water, and 0.1% barren land. Due to the predominance of agricultural land use and silvicultural land use in the watershed, herbicides and other pesticides as well as sediment from soil manipulation activities are likely to enter the tributary and downstream TNW. This tributary, together with its adjacent wetland, act as a catch basin to help filter out pollutants from the neighboring uplands and to hold runoff prior to it flowing downstream into the TNW. The 1st order tributary and on-site Jurisdictional Wetland 5, collectively have a significant nexus to the downstream TNW named the Black River.**

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:

Documentation for the Record only: Significant nexus findings for seasonal RPWs and/or wetlands abutting seasonal RPWs: The 1st order tributary, which flows into an unnamed tributary of Rocky Bluff Swamp, and its adjacent wetland are performing important biological, chemical, and physical functions within a watershed largely comprised of agricultural and silvicultural land uses. The biological functions being performed include providing breeding grounds and shelter for aquatic animals and diversifying the plant life within the watershed. As a result, the waters supply food sources for a variety of water dependent species, such as invertebrates, amphibians, reptiles, and mammals. The tributary and wetland are essential in providing organic carbons in the form of their collective primary productivity to the downstream waters, resulting in the nourishment of the downstream food web. The chemical functions being performed consist of the removal of excess pollutants, which are contributed by runoff from the surrounding uplands, from the downstream TNW. This reduces nitrogen and phosphorus loading downstream and effectively prevents oxygen depletion that can result from eutrophication. Physically, the tributary and adjacent wetland help reduce stormwater flow, and the landscape positions help prevent soil from eroding and traveling downstream. Not only does this prevent the accumulation of sediment downstream, which can smother fish and other aquatic wildlife, but it also reduces the amount of pollutants downstream because these pollutants are usually transported by sediment particles. The tributary and wetland temporarily store flood waters and reduce downstream peak flows by retaining moderate amounts of water within the soil and through evapo-transpiration. This helps to maintain seasonal flow volumes. 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 its adjacent wetland to the downstream TNW.

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:
 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: **This tributary (labeled "Seasonal Stream 1" on the drawing) is depicted on the topographic map as a solid blue line and on the aerials as a linear feature. The onsite tributary is mapped Rembert, a hydric soil, on the soil survey. During the site visit, this tributary was observed as having a slightly sinuous channel within bed and banks, an OHWM, and flowing water present. Based on this information, this tributary was determined to have seasonal flow..**

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

- Tributary waters: **(Seasonal Stream 1) 2,247** linear feet **10** width (ft).
 Other non-wetland waters: acres.
Identify type(s) of waters:

3. Non-RPWs⁸ that flow directly or indirectly into TNWs.

- 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.

⁸See Footnote # 3.

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: **(Wetland 5) 0.70** 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):

- 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): **Non-jurisdictional ditches are present within the review area.**

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.

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: **Report and sketches by ERM.**
- 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: .
- 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: **Mayesville Quad; The topographic map depicts this seasonal RPW as a solid blue line that continues south into a perennial RPW.**
- USDA Natural Resources Conservation Service Soil Survey. Citation: **Pg. 58; The soil survey maps this seasonal RPW as Rembert, a hydric soil.**
- National wetlands inventory map(s). Cite name: **U21, PSS1Ad.**
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps: .
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): **SCDNR 2006, 99:11224:31; The aerials depict this tributary as a shaded linear feature.**
 - or Other (Name & Date): **Site photographs submitted by the agent dated August 2019.**
- Previous determination(s). File no. and date of response letter: .
- Applicable/supporting case law: .
- Applicable/supporting scientific literature: .
- Other information (please specify): **Jurisdictional Determination on adjacent property located west of project site (SAC 2017-00833, letter dated 30 JAN 2019).**

B. ADDITIONAL COMMENTS TO SUPPORT JD: This tributary (labeled "Seasonal Stream 1" on the drawing) is depicted on the topographic map as a solid blue line and on the aerials as a linear feature. The onsite tributary is mapped Rembert, a hydric soil, on the soil survey. During the site visit, this tributary was observed as having a slightly sinuous channel within bed and banks, an OHWM, and flowing water present. Based on this information, this tributary was determined to have seasonal flow. This tributary continues south into an unnamed perennial RPW on site. The perennial RPW flows southwest into Rocky Bluff Swamp, a perennial RPW, which flows southeast into the Black River, a TNW. Wetland 5, which has a direct hydrological connection to the Seasonal Stream 1 via a non-jurisdictional ditch, was determined to have a significant nexus to the downstream TNW in Section IIIC above.

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): March 12, 2020

B. DISTRICT OFFICE, FILE NUMBER, FILE NAME: CESAC-RDE; JD Form 3 of 6; SAC-2019-01817 Duke Energy / Black River Solar Expansion Site

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: South Carolina County/parish/borough: **Sumter** City:
Center coordinates of site (lat/long in degree decimal format): Lat. 33.9570°, Long. -80.1979 °.
Universal Transverse Mercator:

Name of nearest waterbody: **Unnamed tributary of Rocky Bluff Swamp**

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

Name of watershed or Hydrologic Unit Code (HUC): **03040205-01**

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): **January 28, 2020**

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: (**Seasonal Stream 2**) **1,299** linear feet: **10** width (ft) and/or **0.29** acres.

Wetlands: (**Wetland 4**) **1.55** acres.

c. Limits (boundaries) of jurisdiction based on: **Established by OHWM., 1987 Delineation Manual, 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: **Several linear features were observed within the review area and determined to be non-jurisdictional ditches. These linear features were determined to be man-made agricultural ditches that do not have an OHWM.**

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: .

Summarize rationale supporting determination: .

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: **179,089 acres** ; HUC **03040205-01**

Drainage area: **137 acres**

Average annual rainfall: **43.75-52.54** inches

Average annual snowfall: **0.2** inches

(ii) **Physical Characteristics:**

(a) **Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through **3** tributaries before entering TNW.

Project waters are **2-5** river miles from TNW.

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

Project waters are **2-5** aerial (straight) miles from TNW.

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

Project waters cross or serve as state boundaries. Explain: **N/A.**

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

Identify flow route to TNW⁵: **The unnamed tributary labeled as Seasonal Stream 2 flows into an unnamed perennial RPW on site, which flows southwest into Rocky Bluff Swamp, a pRPW. Rocky Bluff Swamp flows southeast into the Black River, a TNW.**

Tributary stream order, if known: **This seasonal RPW is a 1st 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: **6** feet
Average depth: **10** 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: The tributary is relatively stable with no erosion or sloughing banks observed.

Presence of run/riffle/pool complexes. Explain: **N/A.**

Tributary geometry: **Relatively straight.**

Tributary gradient (approximate average slope): **0-1 %**

(c) Flow:

Tributary provides for: **Seasonal flow**

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

Describe flow regime: **This tributary flows after storm events and during the wet months.**

Other information on duration and volume: **This tributary receives flow from the upstream abutting wetland and overland sheetflow from the adjacent uplands.**

Surface flow is: **Discrete and confined.** Characteristics: .

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:
 oil or scum line along shore objects survey to available datum;
 fine shell or debris deposits (foreshore) physical markings;
 physical markings/characteristics vegetation lines/changes in vegetation types.
 tidal gauges
 other (list):

(iii) **Chemical Characteristics:**

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.

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

Explain: **The water flowing within the tributary is clear with no discoloration or oily film observed. The watershed is comprised of Rocky Bluff Swamp and its tributaries and is located in the Sandhills and Upper Coastal Plain regions of SC. Land use in this watershed includes 41.1% agricultural land, 26.6% forested land, 25.4% forested wetland, 5.5% urban land, 1% nonforested wetland, 0.3% water, and 0.1% barren land. There are a total of 339.7 stream miles and 441.1 acres of lake waters in this watershed .**

Identify specific pollutants, if known: **According to the SCDHEC Watersheds Assessment for Rocky Bluff Swamp (HUC 03040205-01), the downstream monitoring station on the Black River (PD-353) states that this is a blackwater system characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they are typical of values seen in blackwater systems. Aquatic life uses are fully supported. Recreational uses are partially supported due to fecal coliform excursions, which are compounded by a significant increasing trend in fecal coliform bacteria. A fish consumption advisory has been issued for the Black River due to the presence of mercury.**

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

Riparian corridor. Characteristics (type, average width):

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: **This tributary is providing important aquatic habitat within a**

predominately upland site and is providing a travel corridor for aquatic fauna.

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: **(Wetland 4) 1.55 acres**

Wetland type. Explain: **Palustrine.**

Wetland quality. Explain: **Slightly impaired.**

Project wetlands cross or serve as state boundaries. Explain: **N/A.**

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral flow.** Explain:

Surface flow is: **Overland sheetflow**

Characteristics:

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:

Ecological connection. Explain:

Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW

Project wetlands are **2-5** river miles from TNW.

Project waters are **2-5** aerial (straight) miles from TNW.

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

Estimate approximate location of wetland as within the **100 - 500-year** 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: **No discoloration or oily film was located on the surface of Wetland 4. The watershed is comprised of Rocky Bluff Swamp and its tributaries and is located in the Sandhills and Upper Coastal Plain regions of SC. Land use in this watershed includes 41.1% agricultural land, 26.6% forested land, 25.4% forested wetland, 5.5% urban land, 1% nonforested wetland, 0.3% water, and 0.1% barren land. There are a total of 339.7 stream miles and 441.1 acres of lake waters in this watershed .**

Identify specific pollutants, if known: **According to the SCDHEC Watersheds Assessment for Rocky Bluff Swamp (HUC 03040205-01), the downstream monitoring station on the Black River (PD-353) states that this is a blackwater system characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they are typical of values seen in blackwater systems. Aquatic life uses are fully supported. Recreational uses are partially supported due to fecal coliform excursions, which are compounded by a significant increasing trend in fecal coliform bacteria.**

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain:
- 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 is providing important aquatic habitat and wildlife diversity in a drainage area dominated by agricultural land use.**

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

All wetland(s) being considered in the cumulative analysis: **1**
 Approximately (**1.55**) 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 | 1.55 | | |

Summarize overall biological, chemical and physical functions being performed: **The 1st order tributary, and its adjacent wetland, are providing important biological, chemical, and physical functions. According to the SCDHEC Watershed Assessment, this watershed is comprised of 41.1% agricultural land, 26.6% forested land, 25.4% forested wetland, 5.5% urban land, 1% nonforested wetland, 0.3% water, and 0.1% barren land. Due to the predominance of agricultural land use and silvicultural land use in the watershed, herbicides and other pesticides as well as sediment from soil manipulation activities are likely to enter the tributary and downstream TNW. This tributary, together with its adjacent wetland, act as a catch basin to help filter out pollutants from the neighboring uplands and to hold runoff prior to it flowing downstream into the TNW. The 1st order tributary and on-site Jurisdictional Wetland 4, collectively have a significant nexus to the downstream TNW named the Black River.**

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:

Documentation for the Record only: Significant nexus findings for seasonal RPWs and/or wetlands abutting seasonal RPWs: The 1st order tributary, which flows into an unnamed tributary of Rocky Bluff Swamp, and its adjacent wetland are performing important biological, chemical, and physical functions within a watershed largely comprised of agricultural and silvicultural land uses. The biological functions being performed include providing breeding grounds and shelter for aquatic animals and diversifying the plant life within the watershed. As a result, the waters supply food sources for a variety of water dependent species, such as invertebrates, amphibians, reptiles, and mammals. The tributary and wetland are essential in providing organic carbons in the form of their collective primary productivity to the downstream waters, resulting in the nourishment of the downstream food web. The chemical functions being performed consist of the removal of excess pollutants, which are contributed by runoff from the surrounding uplands, from the downstream TNW. This reduces nitrogen and phosphorus loading downstream and effectively prevents oxygen depletion that can result from eutrophication. Physically, the tributary and adjacent wetland help reduce stormwater flow, and the landscape positions help prevent soil from eroding and traveling downstream. Not only does this prevent the accumulation of sediment downstream, which can smother fish and other aquatic wildlife, but it also reduces the amount of pollutants downstream because these pollutants are usually transported by sediment particles. The tributary and wetland temporarily store flood waters and reduce downstream peak flows by retaining moderate amounts of water within the soil and through evapo-transpiration. This helps to maintain seasonal flow volumes. 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 its adjacent wetland to the downstream TNW.

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:
 - 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: **This tributary (labeled "Seasonal Stream 2" on the drawing) is depicted on the topographic map as a solid blue line and on the aerials as a linear feature. The onsite tributary is mapped Rembert, a hydric soil, on the soil survey. During the site visit, this tributary was observed as having a slightly sinous channel within bed and banks, an OHWM, and flowing water present. Based on this information, this tributary was determined to have seasonal flow..**

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

- Tributary waters: **(Seasonal Stream 2) 1,299** linear feet **10** width (ft).
 - Other non-wetland waters: acres.
- Identify type(s) of waters:

3. **Non-RPWs⁸ that flow directly or indirectly into TNWs.**
 - 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.

⁸See Footnote # 3.

- 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: **Based on a review of the topographic map, aeriels, soil survey, NWIs, and information obtained during the site visit, the boundary of Wetland 4 was determined to intersect with Seasonal Stream 2. The topographic map depicts this wetland as a forested area that abuts Seasonal Stream 2, depicted as a blue line. The aeriels depict this wetland as forested and abutting a linear feature. The soil survey maps this wetland as Coxville, a hydric soil, and the NWIs map this wetland as palustrine forested (PFO1Bd). Based on this information, Wetland 4 was determined to directly abut Seasonal Stream 2 .**

Provide acreage estimates for jurisdictional wetlands in the review area: **(Wetland 4) 1.55** 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: 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):

- 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: .

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.

Other: (explain, if not covered above): **Non-jurisdictional ditches are present within the review area.**

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: **Report and sketches by ERM.**
 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:
 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: **Mayesville Quad; The topographic map depicts this seasonal RPW as a solid blue line that continues south into a perennial RPW.**
 USDA Natural Resources Conservation Service Soil Survey. Citation: **Pg. 58; Seasonal Stream 2 is mapped Rembert, a hydric soil, and Wetland 4 is mapped Coxville, a hydric soil.**
 National wetlands inventory map(s). Cite name: **PFO1Bd.**
 State/Local wetland inventory map(s): .
 FEMA/FIRM maps:
 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
 Photographs: Aerial (Name & Date): **SCDNR 2006, 99:11224:31; The aerials depict this tributary as a shaded linear feature and the abutting wetland as forested.**
or Other (Name & Date): **Site photographs submitted by the agent dated August 2019.**
 Previous determination(s). File no. and date of response letter:
 Applicable/supporting case law:
 Applicable/supporting scientific literature:
 Other information (please specify): **Jurisdictional Determination on adjacent property located west of project site (SAC 2017-00833, letter dated 30 JAN 2019).**

B. ADDITIONAL COMMENTS TO SUPPORT JD: Based on a review of the topographic map, aerials, soil survey, NWIs, and information obtained during the site visit, the boundary of Wetland 4 was determined to intersect with Seasonal Stream 2. The topographic map depicts this wetland as a forested area that abuts Seasonal Stream 2, depicted as a blue line. The aerials depict this wetland as forested and abutting a linear feature. The soil survey maps this wetland as Coxville, a hydric soil, and the NWIs map this wetland as palustrine forested (PFO1Bd). Based on this information, Wetland 4 was determined to directly abut Seasonal Stream 2. This tributary (labeled "Seasonal Stream 2" on the drawing) is depicted on the topographic map as a solid blue line and on the aerials as a linear feature. The onsite tributary is mapped Rembert, a hydric soil, on the soil survey. During the site visit, this tributary was observed as having a slightly sinuous channel within bed and banks, an OHWM, and flowing water present. Based on this information, this tributary was determined to have seasonal flow. This tributary continues south into an unnamed perennial RPW on site. The perennial RPW flows southwest into Rocky Bluff Swamp, a perennial RPW, which flows southeast into the Black River, a TNW.

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): March 12, 2020

B. DISTRICT OFFICE, FILE NUMBER, FILE NAME: CESAC-RDE; JD Form 4 of 6; SAC-2019-01817 Duke Energy / Black River Solar Expansion Site

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: South Carolina County/parish/borough: **Sumter** City:
Center coordinates of site (lat/long in degree decimal format): Lat. 33.9570°, Long. -80.1979 °.
Universal Transverse Mercator:

Name of nearest waterbody: **Unnamed tributary of the Black River**

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

Name of watershed or Hydrologic Unit Code (HUC): **03040205-02**

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): **January 28, 2020**

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: **(Seasonal Stream 3) 2,362** linear feet: **11**width (ft) and/or **0.62** acres.

Wetlands: acres.

c. Limits (boundaries) of jurisdiction based on: **Established by OHWM., 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: **Several linear features were observed within the review area and determined to be non-jurisdictional ditches. These linear features were determined to be man-made agricultural ditches that do not have an OHWM.**

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: .

Summarize rationale supporting determination: .

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: **71,944 acres** ; HUC **03040205-02**

Drainage area: **615 acres**

Average annual rainfall: **43.75-52.54** inches

Average annual snowfall: **0.2** inches

(ii) **Physical Characteristics:**

(a) **Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through **Pick List** tributaries before entering TNW.

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

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

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

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

Project waters cross or serve as state boundaries. Explain: **N/A.**

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

Identify flow route to TNW⁵: **The unnamed tributary labeled as Seasonal Stream 3 flows into the Black River, a TNW.**

Tributary stream order, if known: **This seasonal RPW is a 1st 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: **6** feet
Average depth: **11** 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: The tributary is relatively stable with no erosion or sloughing banks observed.

Presence of run/riffle/pool complexes. Explain: **N/A.**

Tributary geometry: **Relatively straight.**

Tributary gradient (approximate average slope): **0-1 %**

(c) Flow:

Tributary provides for: **Seasonal flow**

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

Describe flow regime: **This tributary flows after storm events and during the wet months.**

Other information on duration and volume: **This tributary receives flow from the upstream abutting wetland and overland sheetflow from the adjacent uplands.**

Surface flow is: **Discrete and confined.** Characteristics: .

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:
 oil or scum line along shore objects survey to available datum;
 fine shell or debris deposits (foreshore) physical markings;
 physical markings/characteristics vegetation lines/changes in vegetation types.
 tidal gauges
 other (list):

(iii) **Chemical Characteristics:**

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.

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

Explain: **The water flowing within the tributary is clear with no discoloration or oily film observed. The watershed is comprised of the Black River and its tributaries from its origin to Scape Ore Swamp and is located in the Sandhills and Upper and Lower Coastal Plain regions of SC. Land use in this watershed includes 59.1% agricultural land, 23.9% forested wetland, 9.2% forested land, 5.8% urban land, 1.2% nonforested wetland, 0.2% water, and 0.6% barren land. There are a total of 173.5 stream miles and 67.6 acres of lake waters in this watershed .**

Identify specific pollutants, if known: **According to the SCDHEC Watersheds Assessment for the Black River (HUC 03040205-02), the downstream monitoring station on the Black River (PD-353) states that this is a blackwater system characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they are typical of values seen in blackwater systems. Aquatic life uses are fully supported. Recreational uses are partially supported due to fecal coliform excursions, which are compounded by a significant increasing trend in fecal coliform bacteria. A fish consumption advisory has been issued for the Black River due to the presence of mercury.**

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

- Riparian corridor. Characteristics (type, average width): .
- 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: **This tributary is providing important aquatic habitat within a predominately upland site and is providing a travel corridor for aquatic fauna.**

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: . acres

Wetland type. Explain: .

Wetland quality. Explain: .

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain: .

Surface flow is: **Pick List**

Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

Directly abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain: .

Ecological connection. Explain: .

Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List**.

Estimate approximate location of wetland as within the **Pick List** 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: .

Identify specific pollutants, if known: .

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

Riparian buffer. Characteristics (type, average width): .

Vegetation type/percent cover. Explain: .

Habitat for:

Federally Listed species. Explain findings: .

Fish/spawn areas. Explain findings: .

- Other environmentally-sensitive species. Explain findings: _____
- Aquatic/wildlife diversity. Explain findings: _____

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

All wetland(s) being considered in the cumulative analysis: **Pick List**
 Approximately () 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> |
|------------------------------|------------------------|------------------------------|------------------------|
| | | | |

Summarize overall biological, chemical and physical functions being performed: **The 1st order tributary is providing important biological, chemical, and physical functions. According to the SCDHEC Watershed Assessment, this watershed is comprised of 59.1% agricultural land, 23.9% forested wetland, 9.2% forested land, 5.8% urban land, 1.2% nonforested wetland, 0.2% water, and 0.6% barren land. Due to the predominance of agricultural land use in the watershed, herbicides and other pesticides as well as sediment from soil manipulation activities are likely to enter the tributary and downstream TNW. This tributary acts as a catch basin to help filter out pollutants from the neighboring uplands and to hold runoff prior to it flowing downstream into the TNW. The 1st order tributary has a significant nexus to the downstream TNW named the Black River.**

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: _____

Documentation for the Record only: Significant nexus findings for seasonal RPWs and/or wetlands abutting seasonal RPWs: The 1st order tributary, which flows into the Black River, is performing important biological, chemical, and physical functions within a watershed largely comprised of agricultural land use. The biological functions being performed include providing breeding grounds and shelter for aquatic animals and diversifying the plant life within the watershed. As a result, the waters supply food sources for a variety of water dependent species, such as invertebrates, amphibians, reptiles, and mammals. The tributary is essential in providing organic carbons in the form of their collective primary productivity to the downstream waters, resulting in the nourishment of the downstream food web. The chemical functions being performed consist of the removal of excess pollutants, which are contributed by runoff from the surrounding uplands, from the downstream TNW. This reduces nitrogen and phosphorus loading downstream and effectively prevents oxygen depletion that can result from eutrophication. Physically, the tributary helps reduce stormwater flow, and the landscape positions help prevent soil from eroding and traveling downstream. Not only does this prevent the accumulation of sediment downstream, which can smother fish and other aquatic wildlife, but it also reduces the amount of pollutants downstream because these pollutants are usually transported by sediment particles. The tributary temporarily stores flood waters and reduces downstream peak flows by retaining moderate amounts of water within the soil and through evapo-transpiration. This helps to maintain seasonal flow volumes. 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 to the downstream TNW.

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: .
- 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: **This tributary (labeled "Seasonal Stream 3" on the drawing) is depicted on the topographic map as a solid blue line and on the aerials as a linear feature. The onsite tributary is mapped Osier, a hydric soil, on the soil survey. Based on this information, this tributary was determined to have seasonal flow..**

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

- Tributary waters: **(Seasonal Stream 3) 2,362** linear feet **11** width (ft).
 - Other non-wetland waters: acres.
- Identify type(s) of waters: .

3. **Non-RPWs⁸ that flow directly or indirectly into TNWs.**

- 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.**

⁸See Footnote # 3.

- 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: _____ 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):

- 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): _____

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.

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.

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: **Report and sketches by ERM.**
- 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: .
- 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: **Mayesville Quad; The topographic map depicts this seasonal RPW as a solid blue line that continues east into the Black River.**
- USDA Natural Resources Conservation Service Soil Survey. Citation: **Pg. 58; The soil survey maps this seasonal RPW as Osier, a hydric soil.**
- National wetlands inventory map(s). Cite name: **U21.**
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps: .
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): **SCDNR 2006, 99:11224:31; The aerials depict this tributary as a shaded linear feature.**
 - or Other (Name & Date): **Site photographs submitted by the agent dated August 2019.**
- Previous determination(s). File no. and date of response letter: .
- Applicable/supporting case law: .
- Applicable/supporting scientific literature: .
- Other information (please specify): **Jurisdictional Determination on adjacent property located west of project site (SAC 2017-00833, letter dated 30 JAN 2019).**

B. ADDITIONAL COMMENTS TO SUPPORT JD: This tributary (labeled "Seasonal Stream 3" on the drawing) is depicted on the topographic map as a solid blue line and on the aerials as a linear feature. The onsite tributary is mapped Osier, a hydric soil, on the soil survey. Based on this information, this tributary was determined to have seasonal flow. Seasonal Stream 3 was determined to have a significant nexus to the downstream TNW in Section IIIC above. This tributary continues east into the Black River, a TNW.

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): March 12, 2020

B. DISTRICT OFFICE, FILE NUMBER, FILE NAME: CESAC-RDE; JD Form 5 of 6; SAC-2019-01817 Duke Energy / Black River Solar Expansion Site

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: South Carolina County/parish/borough: **Sumter** City:
Center coordinates of site (lat/long in degree decimal format): Lat. 33.9570°, Long. -80.1979 °.
Universal Transverse Mercator:

Name of nearest waterbody: **Black River**

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

Name of watershed or Hydrologic Unit Code (HUC): **03040205-02**

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): **January 28, 2020**

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: (Wetland 2) 57.47 a. + (Wetland 3) 6.99 a. = 64.46 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: **Several linear features were observed within the review area and determined to be non-jurisdictional ditches. These linear features were determined to be man-made agricultural ditches that do not have an OHWM. One of these non-jurisdictional ditches provides a direct hydrological connection from Wetland 3 to the downstream TNW.**

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: .

Summarize rationale supporting determination: .

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: 71,944 acres ; HUC 03040205-02

Drainage area: 12,106 acres

Average annual rainfall: 43.75-52.54 inches

Average annual snowfall: 0.2 inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

Tributary flows directly into TNW.

Tributary flows through Pick List tributaries before entering TNW.

Project waters are 2-5 river miles from TNW.

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

Project waters are 2-5 aerial (straight) miles from TNW.

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

Project waters cross or serve as state boundaries. Explain: N/A.

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

Identify flow route to TNW⁵: **The off-site perennial RPW is named Black River Swamp and flows directly into the Black River, a TNW.**

Tributary stream order, if known: **Unknown.**

(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: **20 feet**

Average depth: **12 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: The tributary is relatively stable with no erosion or sloughing banks observed.

Presence of run/riffle/pool complexes. Explain: **N/A.**

Tributary geometry: **Meandering.**

Tributary gradient (approximate average slope): **0-1 %**

(c) Flow:

Tributary provides for: **Perennial flow**

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

Describe flow regime: **This tributary flows year round.**

Other information on duration and volume: **This tributary receives flow from the upstream abutting wetlands and tributaries.**

Surface flow is: **Discrete and confined.** Characteristics: .

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:
 oil or scum line along shore objects survey to available datum;
 fine shell or debris deposits (foreshore) physical markings;
 physical markings/characteristics vegetation lines/changes in vegetation types.
 tidal gauges
 other (list):

(iii) **Chemical Characteristics:**

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.

⁷ Ibid.

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

Explain: **The water flowing within the perennial RPW is clear with no oily film observed. The watershed is comprised of the Black River and its tributaries from its origin to Scape Ore Swamp and is located in the Sandhills and Upper and Lower Coastal Plain regions of SC. Land use in this watershed includes 59.1% agricultural land, 23.9% forested wetland, 9.2% forested land, 5.8% urban land, 1.2% nonforested wetland, 0.2% water, and 0.6% barren land. There are a total of 173.5 stream miles and 67.6 acres of lake waters in this watershed .**

Identify specific pollutants, if known: **According to the SCDHEC Watersheds Assessment for the Black River (HUC 03040205-02), the downstream monitoring station on the Black River (PD-353) states that this is a blackwater system characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they are typical of values seen in blackwater systems. Aquatic life uses are fully supported. Recreational uses are partially supported due to fecal coliform excursions, which are compounded by a significant increasing trend in fecal coliform bacteria. A fish consumption advisory has been issued for the Black River due to the presence of mercury.**

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

- Riparian corridor. Characteristics (type, average width): **Approximately 1,000 feet wide.**
- Wetland fringe. Characteristics: **The Black River Swamp has an abutting wetland system.**
- Habitat for:
 - Federally Listed species. Explain findings: .
 - Fish/spawn areas. Explain findings: .
 - Other environmentally-sensitive species. Explain findings: .
 - Aquatic/wildlife diversity. Explain findings: **This tributary is providing important aquatic habitat and is providing a travel corridor for aquatic fauna.**

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: **(Wetland 2) 57.47 a. + (Wetland 3) 6.99 a. = 64.46 acres**

Wetland type. Explain: **Palustrine.**

Wetland quality. Explain: **Wetland 2 is fully functional and Wetland 3 is impaired.**

Project wetlands cross or serve as state boundaries. Explain: **N/A.**

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow.** Explain: **Wetlands 2 and 3 flow into the perennial RPW during the wet months.**

Surface flow is: **Discrete and confined**

Characteristics: **Wetland 3 flows into the Perennial RPW via a non-jurisdictional ditch.**

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: **Wetland 3 flows into the perennial RPW via a non-jurisdictional ditch.**

Ecological connection. Explain: .

Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **2-5** river miles from TNW.

Project waters are **2-5** aerial (straight) miles from TNW.

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

Estimate approximate location of wetland as within the **100 - 500-year** 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: **The watershed is comprised of the Black River and its tributaries from its origin to Scape Ore Swamp and is located in the Sandhills and Upper and Lower Coastal Plain regions of SC. Land use in this watershed includes 59.1% agricultural land, 23.9% forested wetland, 9.2% forested land, 5.8% urban land, 1.2% nonforested wetland, 0.2% water, and 0.6% barren land. There are a total of 173.5 stream miles and 67.6 acres of lake waters in this watershed .**

Identify specific pollutants, if known: **According to the SCDHEC Watersheds Assessment for the Black River (HUC 03040205-02), the downstream monitoring station on the Black River (PD-353) states that this is a blackwater system characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they are typical of**

values seen in blackwater systems. Aquatic life uses are fully supported. Recreational uses are partially supported due to fecal coliform excursions, which are compounded by a significant increasing trend in fecal coliform bacteria.

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

Riparian buffer. Characteristics (type, average width): **Wetland 2 is a portion of the wetland system that abuts the Black River Swamp. This wetland system is approximately 1,000 feet wide.**

Vegetation type/percent cover. Explain: .

Habitat for:

Federally Listed species. Explain findings: .

Fish/spawn areas. Explain findings: .

Other environmentally-sensitive species. Explain findings: .

Aquatic/wildlife diversity. Explain findings: **These wetlands are providing important aquatic habitat and wildlife diversity in a drainage area dominated by agricultural land use.**

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

All wetland(s) being considered in the cumulative analysis: **4**

Approximately (**3,500**) 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 | 57.47 | N | 6.99 |
| Y | 3,325 | N | 30 |

Summarize overall biological, chemical and physical functions being performed: **The perennial RPW and its adjacent wetlands are providing important biological, chemical, and physical functions. According to the SCDHEC Watershed Assessment, this watershed is comprised of 59.1% agricultural land, 23.9% forested wetland, 9.2% forested land, 5.8% urban land, 1.2% nonforested wetland, 0.2% water, and 0.6% barren land. Due to the predominance of agricultural land use in the watershed, herbicides and other pesticides as well as sediment from soil manipulation activities are likely to enter the tributary and downstream TNW. This tributary acts as a catch basin to help filter out pollutants from the neighboring uplands and to hold runoff prior to it flowing downstream into the TNW. The perennial RPW and its adjacent wetlands have a significant nexus to the downstream TNW named the Black River.**

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 perennial RPW, named the Black River Swamp, and its adjacent wetlands, are performing important biological, chemical, and physical functions within a watershed largely comprised of agricultural land use. The biological functions being performed include providing breeding grounds and shelter for aquatic animals and diversifying the plant life within the watershed. As a result, the waters supply food sources for a variety of water dependent species, such as invertebrates, amphibians, reptiles, and mammals. The perennial RPW and adjacent wetlands are essential in providing organic carbons in the form of their collective primary productivity to the downstream TNW, resulting in the nourishment of the downstream food web. The chemical functions being performed consist of the removal of excess pollutants, which are contributed by runoff from the surrounding uplands, from the downstream TNW. This reduces nitrogen and phosphorus loading downstream and effectively prevents oxygen depletion that can result from eutrophication. Physically, the perennial RPW and its adjacent wetlands reduce stormwater flow, and the landscape positions help prevent soil from eroding and traveling downstream. Not only does this prevent the accumulation of sediment downstream, which can smother fish and other aquatic wildlife, but it also reduces the amount of pollutants downstream because these pollutants are usually transported by sediment particles. The perennial RPW and adjacent wetlands temporarily store flood waters and reduce downstream peak flows by retaining moderate amounts of water within the soil and through evapo-transpiration. This helps to maintain flow volumes. 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 its 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: **The off site tributary named the BLack River Swamp was determined to have perennial flow. This tributary is depicted as a braided stream system surrounded by wetlands on the topographic map. The soil survey maps this tributary and the abutting wetland system as Swamp. The NWIs map this tributary as PFO1C. This perennial RPW flows directly into the BLack River, a TNW.**

 - 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.**
 - 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:

⁸See Footnote # 3.

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: **The onsite wetland labeled Wetland 2 on the drawing was determined to directly abut the offsite perennial RPW. The topographic map depicts this wetland as a wetland system that is intersected by the Black River Swamp, a pRPW. The soil survey maps this wetland as Swamp, and the NWIs map this wetland as PFOIC. Wetland 2 is a portion of a larger wetland system that directly abuts the Black River Swamp.**
 - 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: **(Wetland 2) 57.47** 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: **(Wetland 3) 6.99** 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):

- 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: .

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.

Other: (explain, if not covered above): **Non-jurisdictional ditches are present within the review area.**

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: **Report and sketches by ERM.**
- 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: .
- 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: **Mayesville Quad; The topographic map depicts this perennial RPW as a solid blue line that flows southeast into the Black River, a TNW.**
- USDA Natural Resources Conservation Service Soil Survey. Citation: **Pg. 58; The soil survey maps this perennial RPW, and the abutting wetland system, as Swamp. Wetland 3 is mapped Coxville, a hydric soil.**
- National wetlands inventory map(s). Cite name: **U21 & PFOIC.**
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps: .
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): **SCDNR 2006, 99:11224:31; The aerials depict this tributary as a shaded linear feature. Wetland 2 is depicted as forested and Wetland 3 is depicted as cleared.**
 - or Other (Name & Date): **Site photographs submitted by the agent dated August 2019.**
- Previous determination(s). File no. and date of response letter: .
- Applicable/supporting case law: .
- Applicable/supporting scientific literature: .
- Other information (please specify): **Jurisdictional Determination on adjacent property located west of project site (SAC 2017-00833, letter dated 30 JAN 2019).**

B. ADDITIONAL COMMENTS TO SUPPORT JD: TThe onsite wetland labeled Wetland 2 on the drawing was determined to directly abut the offsite perennial RPW. The topographic map depicts this wetland as a wetland sytem that is intersected by the BBlack River Swamp, a pRPW. The soil survey maps this wetland as Swamp, and the NWIs map this wetland as PFOIC. Wetland 2 is a portion of a larger wetland system that directly abuts the Black River Swamp. Wetland 3 was determined to have a significant nexus to the downstream TNW in Section IIIC above. The off site tributary named the BBlack River Swamp was determined to have perennial flow. This tributary is depicted as a braided stream system surrounded by wetlands on the topographic map. The soil survey maps this tributary and the abutting wetland system as Swamp. The NWIs map this tributary as PFOIC. This perennial RPW flows directly into the BBlack River, a TNW.

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): March 12, 2020

B. DISTRICT OFFICE, FILE NUMBER, FILE NAME: CESAC-RDE; JD Form 6 of 6; SAC-2019-01817 Duke Energy / Black River Solar Expansion Site

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: South Carolina County/parish/borough: **Sumter** City:
Center coordinates of site (lat/long in degree decimal format): Lat. 33.9570°, Long. -80.1979 °.
Universal Transverse Mercator:

Name of nearest waterbody: **Scape Ore Swamp**

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

Name of watershed or Hydrologic Unit Code (HUC): **03040205-01**

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): **January 28, 2020**

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: (**Wetland 1**) **0.34** 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: **Several linear features were observed within the review area and determined to be non-jurisdictional ditches. These linear features were determined to be man-made agricultural ditches that do not have an OHWM. One of these linear features provides a direct hydrological connection from Wetland 1 to the downstream TNW via Scape Ore 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: .

Summarize rationale supporting determination: .

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: 179,089 acres ; HUC 03040205-01

Drainage area: 3,162 acres

Average annual rainfall: 43.75-52.54 inches

Average annual snowfall: 0.2 inches

(ii) **Physical Characteristics:**

(a) Relationship with TNW:

Tributary flows directly into TNW.

Tributary flows through 2 tributaries before entering TNW.

Project waters are 2-5 river miles from TNW.

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

Project waters are 2-5 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: N/A.

Identify flow route to TNW⁵: **Scape Ore Swamp, a perennial RPW, flows into Rocky Bluff Swamp, a pRPW. Rocky Bluff Swamp flows southeast into the Black River, a TNW.**

Tributary stream order, if known: **Unknown.**

(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: **20 feet**

Average depth: **12 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: The tributary is relatively stable with no erosion or sloughing banks observed.

Presence of run/riffle/pool complexes. Explain: N/A.

Tributary geometry: **Meandering.**

Tributary gradient (approximate average slope): **0-1 %**

(c) Flow:

Tributary provides for: **Perennial flow**

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

Describe flow regime: **This tributary flows year round.**

Other information on duration and volume: **This tributary receives flow from the abutting wetland system.**

Surface flow is: **Overland sheetflow.** Characteristics: .

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:
 oil or scum line along shore objects survey to available datum;
 fine shell or debris deposits (foreshore) physical markings;
 physical markings/characteristics vegetation lines/changes in vegetation types.
 tidal gauges
 other (list):

(iii) **Chemical Characteristics:**

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.

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

Explain: **The water flowing within the tributary is clear with no discoloration or oily film observed. The watershed is comprised of Rocky Bluff Swamp and its tributaries and is located in the Sandhills and Upper Coastal Plain regions of SC. Land use in this watershed includes 41.1% agricultural land, 26.6% forested land, 25.4% forested wetland, 5.5% urban land, 1% nonforested wetland, 0.3% water, and 0.1% barren land. There are a total of 339.7 stream miles and 441.1 acres of lake waters in this watershed .**

Identify specific pollutants, if known: **According to the SCDHEC Watersheds Assessment for Rocky Bluff Swamp (HUC 03040205-01), the downstream monitoring station on the Black River (PD-353) states that this is a blackwater system characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they are typical of values seen in blackwater systems. Aquatic life uses are fully supported. Recreational uses are partially supported due to fecal coliform excursions, which are compounded by a significant increasing trend in fecal coliform bacteria. A fish consumption advisory has been issued for the Black River due to the presence of mercury.**

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

Riparian corridor. Characteristics (type, average width): **Abutting wetlands averaging 1,500' wide.**

Wetland fringe. Characteristics: **Palustrine forested.**

Habitat for:

Federally Listed species. Explain findings: .

Fish/spawn areas. Explain findings: .

Other environmentally-sensitive species. Explain findings: .

Aquatic/wildlife diversity. Explain findings: **This tributary is providing important aquatic habitat within a**

predominately upland site and is providing a travel corridor for aquatic fauna.

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: **(Wetland 1) 0.34 acres**

Wetland type. Explain: **Palustrine.**

Wetland quality. Explain: **Slightly impaired.**

Project wetlands cross or serve as state boundaries. Explain: **N/A.**

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral flow.** Explain: .

Surface flow is: **Discrete and confined**

Characteristics: .

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: **Wetland 1 is intersected by a non-jurisdictional ditch that**

flows directly into Scape Ore Swamp.

Ecological connection. Explain: .

Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **2-5** river miles from TNW.

Project waters are **2-5** aerial (straight) miles from TNW.

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

Estimate approximate location of wetland as within the **100 - 500-year** 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: **No discoloration or oily film was located on the surface of Wetland 1. The watershed is comprised of Rocky Bluff Swamp and its tributaries and is located in the Sandhills and Upper Coastal Plain regions of SC. Land use in this watershed includes 41.1% agricultural land, 26.6% forested land, 25.4% forested wetland, 5.5% urban land, 1% nonforested wetland, 0.3% water, and 0.1% barren land. There are a total of 339.7 stream miles and 441.1 acres of lake waters in this watershed .**

Identify specific pollutants, if known: **According to the SCDHEC Watersheds Assessment for Rocky Bluff Swamp (HUC 03040205-01), the downstream monitoring station on the Black River (PD-353) states that this is a blackwater system characterized by naturally low dissolved oxygen conditions. Although dissolved oxygen excursions occurred, they are typical of**

values seen in blackwater systems. Aquatic life uses are fully supported. Recreational uses are partially supported due to fecal coliform excursions, which are compounded by a significant increasing trend in fecal coliform bacteria..

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

- Riparian buffer. Characteristics (type, average width):
- Vegetation type/percent cover. Explain:
- 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 is providing important aquatic habitat and wildlife diversity in a drainage area dominated by agricultural land use.**

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

All wetland(s) being considered in the cumulative analysis: **2**
 Approximately (**1,550**) 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> |
|------------------------------|------------------------|------------------------------|------------------------|
| N | 0.34 | Y | 1,549 |

Summarize overall biological, chemical and physical functions being performed: **The perennial RPW named Scape Ore Swamp, and its adjacent wetlands, are providing important biological, chemical, and physical functions. According to the SCDHEC Watershed Assessment, this watershed is comprised of 41.1% agricultural land, 26.6% forested land, 25.4% forested wetland, 5.5% urban land, 1% nonforested wetland, 0.3% water, and 0.1% barren land. Due to the predominance of agricultural land use and silvicultural land use in the watershed, herbicides and other pesticides as well as sediment from soil manipulation activities are likely to enter the tributary and downstream TNW. This tributary, together with its adjacent wetlands, act as a catch basin to help filter out pollutants from the neighboring uplands and to hold runoff prior to it flowing downstream into the TNW. Scape Ore Swamp and its abutting wetlands, as well as on-site Jurisdictional Wetland 1, collectively have a significant nexus to the downstream TNW named the Black River.**

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:

Documentation for the Record only: Significant nexus findings for seasonal RPWs and/or wetlands abutting seasonal RPWs: The offsite perennial RPW, named Scape Ore Swamp, which flows into Rocky Bluff Swamp, and its adjacent wetlands are performing important biological, chemical, and physical functions within a watershed largely comprised of agricultural and silvicultural land uses. The biological functions being performed include providing breeding grounds and shelter for aquatic animals and diversifying the plant life within the watershed. As a result, the waters supply food sources for a variety of water dependent species, such as invertebrates, amphibians, reptiles, and mammals. The perennial RPW and wetlands are essential in providing organic carbons in the form of their collective primary productivity to the downstream waters, resulting in the nourishment of the downstream food web. The chemical functions being performed consist of the removal of excess pollutants, which are contributed by runoff from the surrounding uplands, from the downstream TNW. This reduces nitrogen and phosphorus loading downstream and effectively prevents oxygen depletion that can result from eutrophication. Physically, the perennial RPW and adjacent wetlands help reduce stormwater flow, and the landscape positions help prevent soil from eroding and traveling downstream. Not only does this prevent the accumulation of sediment downstream, which can smother fish and other aquatic wildlife, but it also reduces the amount of pollutants downstream because these pollutants are usually transported by sediment particles. The perennial RPW and wetlands temporarily store flood waters and reduce downstream peak flows by retaining moderate amounts of water within the soil and through evapo-transpiration. This helps to maintain seasonal flow volumes. 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 Scape Ore Swamp and its adjacent wetlands to the downstream TNW.

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: **Scape Ore Swamp, the offsite tributary, is depicted as a braided, blue line stream on the topographic map. The soil survey maps this tributary as Swamp, and the NWIs map this area as palustrine forested wetlands (PFOIC). This perennial RPW flows southeast into Rocky Bluff Swamp, a perennial RPW, which flows into the Black River, a TNW.**
 - 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.**
 - 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.**

⁸See Footnote # 3.

- 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: **(Wetland 1) 0.34** 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):

- 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): **Non-jurisdictional ditches are present within the review area.**

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.

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: **Report and sketches by ERM.**
- 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: .
- 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: **Mayesville Quad; The topographic map depicts this perennial RPW as a solid blue line/braided stream that continues south into a perennial RPW named Rocky Bluff Swamp. The onsite wetland is depicted as forested.**
- USDA Natural Resources Conservation Service Soil Survey. Citation: **Pg. 58; Wetland 1 is mapped Coxville, a hydric soil, and the offsite perennial RPW is mapped Swamp.**
- National wetlands inventory map(s). Cite name: **PFO1C.**
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps: .
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): **SCDNR 2006, 99:11224:31; The aerials depict this tributary as a shaded linear feature and the onsite wetland is forested.**
 - or Other (Name & Date): **Site photographs submitted by the agent dated August 2019.**
- Previous determination(s). File no. and date of response letter: .
- Applicable/supporting case law: .
- Applicable/supporting scientific literature: .
- Other information (please specify): **Jurisdictional Determination on adjacent property located west of project site (SAC 2017-00833, letter dated 30 JAN 2019).**

B. ADDITIONAL COMMENTS TO SUPPORT JD: Scape Ore Swamp, the offsite tributary, is depicted as a braided, blue line stream on the topographic map. The soil survey maps this tributary as Swamp, and the NWIs map this area as palustrine forested wetlands (PFO1C). This perennial RPW flows southeast into Rocky Bluff Swamp, a perennial RPW, which flows into the Black River, a TNW. Wetland 1, which has a direct hydrological connection to Scape Ore Swamp via a non-jurisdictional ditch, was determined to have a significant nexus to the downstream TNW in Section IIIC above.