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): 2/22/16

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Charleston District, Twin Lakes, SAC-2015-01109-2JU

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: South Carolina County/parish/borough: **Charleston** City: **Johns Island**
Center coordinates of site (lat/long in degree decimal format): Lat. 32.72872° **N**, Long. -80.03749° **W**.
Universal Transverse Mercator:
Name of nearest waterbody: **Church Creek**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Stono River**
Name of watershed or Hydrologic Unit Code (HUC): 030520202
☒ 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: **2/22/16**
☒ Field Determination. Date(s): **11/20/15, 12/16/15**

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 waters[2] (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: **Jurisdictional Pond A = 2.14 acres.**
   Wetlands: **Jurisdictional Wetland A = 14.35 acres, Jurisdictional Wetland B = 0.72 acres, Jurisdictional Wetland C = 2.20 acres, Jurisdictional Wetland D = 0.62 acres, Jurisdictional Wetland E = 0.11 acres, Jurisdictional Wetland F = 0.18 acres, Jurisdictional Wetland G = 0.04 acres, Jurisdictional Wetland H = 0.13 acres.**

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**, **Established by OHWM.**
   Elevation of established OHWM (if known): .

[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).

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

☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: **There is an abandoned borrow pit approximately 0.50 acre in size within the project area which is identified on the attached drawing as Non-Jurisdictional Borrow Pit Area A. This area is a water-filled depression that is void of vegetation and appears to have been dug out of uplands. As stated in the Preamble to the November 13, 1986, Regulations found on page 41217, the following waters are generally not considered waters of the United States: "water filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and resulting body of water meets the definition of waters of the United States." This feature is not a "natural pond" or a "wetland" as identified in 33 CFR 328.3(a). Therefore the borrow pit is non-jurisdictional and not subject to regulation under Section 404 of the Clean Water Act.**

There is a pond approximately 4.95 acres in size within the project area that was created for aesthetic purposes. It is filled with water in excess of 6 feet deep, void of vegetation, and appears to have been dug out of uplands. It was confirmed during a site visit to be surrounded by non-hydric soil. As stated in the Preamble to the November 13, 1986, Regulations found on page 41217, the following waters are generally not considered waters of the United States: "Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water primarily for aesthetic reasons." Therefore the pond is non-jurisdictional and not subject to regulation under Section 404 of the Clean Water Act.

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 waterbody[4] 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.

[3] Supporting documentation is presented in Section III.F.
[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

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

(i) General Area Conditions:

Watershed size: **Approximately 157,400 acres**

Drainage area: **Approximately 1029.24 acres** Drainage areas were approximated for all tributaries that were evaluated as part of the Significant Nexus Determinations performed for this JD. These areas were drawn based on apparent flow pathways and drainage areas associated with the subject relevant reach using USGS quad mapping, aerial photography, and observations of connectivity and direction of flow made in the field. The intended value of the drainage area maps is to document the full collection of wetlands adjacent to the relevant reach, and not to assert that the mapping represents more than approximation with respect to actual area.

Average annual rainfall: **51.03** inches
Average annual snowfall: **0.5** 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 **1-2** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **1-2** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW[5]: **Perennial RPW discharges directly into the Stono River which is a TNW.**
Tributary stream order, if known: **First Order.**

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

Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: .
☒ Manipulated (man-altered). Explain: **The tributary was originally mapped on the NRCS Soils Map for Charleston County as a perennial stream which originated off-site and flowed through the site ultimately discharging into the Stono River. The NRCS soil survey map was based on 1963 aerial imagery with field work being completed by 1969 and final publication in 1971. The USGS Quadrangle which was published in 1971 displays the tributary rerouted via ditching. Sometime between the completion of fieldwork for the soil survey in 1969 and the publication of the USGS Quadrangle Map in 1971 the tributary was rerouted along the parcel boundary through the digging of a man made drainage feature ultimately reconnecting with its original path (identified as a blue line stream on the USGS Map and determined to be a jurisdictional RPW in a previous JD (SAC-2007-01176-2JX)) to the south and discharging into the Stono River.**

Tributary properties with respect to top of bank (estimate):
Average width: **10-15** feet
Average depth: **5-7** feet
Average side slopes: **4:1 (or greater).**

Primary tributary substrate composition (check all that apply):

☒ Silts	☒ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☒ Vegetation. Type/% cover: **Hydrophytic/Approximately 20-30**	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: The tributary is slow flowing and relatively stable in terms of erodability with highly vegetated banks.

Presence of run/riffle/pool complexes. Explain: **There were no riffle/pool complexes witnessed in the project vicinity.**

Tributary geometry: **Relatively straight. The original tributary was meandering but man alteration through rerouting has made this a relatively straight feature.**

Tributary gradient (approximate average slope): **Less than 5** %

(c) Flow:

Tributary provides for: **Perennial flow**
Estimate average number of flow events in review area/year: **20 (or greater)**
Describe flow regime: **Continuous**.
Other information on duration and volume: .

[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.

Surface flow is: **Discrete and confined**. Characteristics: **Surface flow is confined to the channel with inputs from surrounding defined wetland drainages since this is a deep cut rerouted tributary.**

Subsurface flow: **No**. Explain findings:
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☒ Bed and banks
☒ OHWM[6] (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: **Water color is clear to dark with evidence of algae and inputs of iron and organics.**
Identify specific pollutants, if known: **There was no direct evidence of unnatural pollutants. The surrounding landscape within the review area of the relevant reach is heavily forested with minimal development.**

(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: **The tributary provides habitat for aquatic species that would utilize first order tributaries within the lowcountry such as insects and amphibians along with the predators which feed upon them such as snakes, birds, and mammals; even though it has been rerouted into a deeply dug channel.**

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: **Jurisdictional Wetland A = 14.35 acres, Jurisdictional Wetland B = 0.72 acres, Jurisdictional Wetland C = 2.20 acres, Jurisdictional Wetland D = 0.62 acres, Jurisdictional Wetland E = 0.11 acres, Jurisdictional Wetland F = 0.18 acres, Jurisdictional Wetland G = 0.04 acres, Jurisdictional Wetland H = 0.13 acres.**
Wetland type. Explain: **Forested/Emergent**
Wetland quality. Explain: **Fully Functional**
Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Wetland B:

Flow is: **Intermittent flow**. Explain: **Wetland B extends off-site onto the adjacent parcel where it is directly abutting the off-site relevant reach tributary. Flow would generally be in response to precipitation events and during the wet**

[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.

season when the wetland reaches storage capacity. Water would then be transported via discrete flow to the north and then the west into the off-site relevant reach tributary.

Surface flow is**: Discrete and confined**
Characteristics: **Surface flow is discrete within the wetland and confined when it reaches the channel of the off-site relevant reach tributary.**

Subsurface flow: **Unknown**. Explain findings: **Due to the overall sandy texture of the soils in the area, it is likely that there are subsurface flow contributions to the relevant reach tributary as water levels with the wetlands recede resulting in a cone of depression or drawdown effect on the shallow subsurface water table.**
☐ Dye (or other) test performed: .

Wetland A:

Flow is: **Intermittent flow**. Explain: **Wetland A extends off-site onto the adjacent parcel where it is directly abutting the off-site relevant reach tributary. Flow would generally be in response to precipitation events and during the wet season when the wetland reaches storage capacity. Water would then be transported via discrete flow to the south and then the west into the off-site relevant reach tributary.**

Surface flow is**: Discrete and confined**
Characteristics: **Surface flow is discrete within the wetland and confined when it reaches the channel of the off-site relevant reach tributary.**

Subsurface flow: **Unknown**. Explain findings: **Due to the overall sandy texture of the soils in the area, it is likely that there are subsurface flow contributions to the relevant reach tributary as water levels with the wetlands recede resulting in a cone of depression or drawdown effect on the shallow subsurface water table.**
☐ Dye (or other) test performed: .

Wetlands C, D, E, F, G:

Flow is: **Intermittent flow**. Explain: **Flow would generally be in response to precipitation events and during the wet season when the wetland reaches storage capacity. Water would then be transported via discrete unconfined flow through the uplands and/or subsurface flow to the southwest into the off-site relevant reach tributary.**

Surface flow is**: Discrete and confined**
Characteristics: **Surface flow is discrete within the wetland and confined when it reaches the channel of the off-site relevant reach tributary.**

Subsurface flow: **Yes**. Explain findings: **Flow would generally be in response to precipitation events and during the wet season when the wetlands reach storage capacity. Water would then be transported via discrete unconfined flow through the uplands and/or shallow subsurface flow to the southwest into the off-site relevant reach tributary. The overall area consists of sandy soils and is gently sloping to the southwest promoting drainage to the off-site relevant reach tributary. On multiple site visits, continuous shallow subsurface soil saturation was observed between the wetlands and the relevant reach tributary with direct surface flow discharge into the relevant reach tributary via a breach in the berm along the property boundary. This portion of the project area consists of a wetland/upland mosaic system that extends into the southwest corner of the property (outside project area) and connects to the relevant reach tributary. The topography and overall interconnected nature of this wetland system is readily discernible on LiDAR imagery.**

☐ Dye (or other) test performed: .

Wetland H:

Flow is: **Intermittent flow**. Explain: **Wetland H is directly abutting the off-site relevant reach tributary via a breach in the berm along the tributary. Flow would generally be in response to precipitation events and during the wet season when the wetland reaches storage capacity or when the tributary stages up and overflows into the wetland. Water would then be transported via discrete flow between the two systems.**

Surface flow is**: Discrete and confined**
Characteristics: **Surface flow is discrete within the wetland and confined when it reaches the channel of the off-site relevant reach tributary.**

Subsurface flow: **Unknown**. Explain findings: **Due to the overall sandy texture of the soils in the area, it is likely that there are subsurface flow contributions to the relevant reach tributary as water levels with the wetlands recede resulting in a cone of depression or drawdown effect on the shallow subsurface water table.**
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

☒ Directly abutting: **Wetland A, B, H**

☒ Not directly abutting

☒ Discrete wetland hydrologic connection. Explain: **Wetlands C, D, E, F, G: Flow would generally be in response to precipitation events and during the wet season when the wetlands reach storage capacity. Water would then be transported via discrete unconfined flow through the uplands and/or shallow subsurface flow to the southwest into the off-site relevant reach tributary. The overall area consists of sandy soils and is gently sloping to the southwest promoting drainage to the off-site relevant reach tributary. On multiple site visits, continuous shallow subsurface soil saturation was observed between the wetlands and the relevant reach tributary with direct surface flow discharge into the relevant reach tributary via a breach in the berm along the property boundary. This portion of the project area consists of a wetland/upland mosaic system that extends into the southwest corner of the property (outside project area) and connects to the relevant reach tributary. The topography and overall interconnected nature of this wetland system is readily discernible on LiDAR imagery.**

☐ Ecological connection. Explain: .

☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

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

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

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

Estimate approximate location of wetland as within the **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: **There was no apparent evidence of poor or degraded water quality in the wetlands during the site visit.**

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: **Forested/Emergent**.

☒ Habitat for:

☐ Federally Listed species. Explain findings: .

☐ Fish/spawn areas. Explain findings: .

☐ Other environmentally-sensitive species. Explain findings: .

☒ Aquatic/wildlife diversity. Explain findings: **Wetlands provide support for wetland dependent species, including amphibians during breeding periods, and numerous wading birds and small mammals that feed on the aquatic species.**

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

The on-site and off-site wetlands adjacent to the relevant reach tributary were previously evaluated and jurisdiction determined as part of SAC-2012-00815-2JU Cane Slash, LLC (the adjacent property). Approved Jurisdictional Determination Letter was issued on April 4, 2013. This evaluation was based on an estimation of off-site adjacent wetlands on the adjacent Shade Tree parcel as well as the Twin Lakes parcel through utilization of NWI mapping. Since then the Shade Tree parcel has had a wetland delineation and Jurisdictional Determination (SAC-2015-00847-2JU) and the Twin Lakes parcel wetlands have been delineated and are the subject of this Jurisdictional Determination. Updated figures depicting the current delineated wetland boundaries and configurations are located in the administrative record as supporting documentation for this Jurisdictional Determination. The overall off-site adjacent wetland acreage previously evaluated is approximately the same.

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:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

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:

Wetlands A, B, C, D, E, F, G, H, and the associated relevant reach tributary were evaluated and jurisdiction was determined as part of SAC-2012-00815-2JU Cane Slash, LLC (the adjacent property). Approved Jurisdictional Determination Letter was issued on April 4, 2013. This office has determined that there is a Significant Nexus between the review area Relevant Reach, its adjacent wetlands, and the downstream TNW.

A significant nexus was conducted because one wetland is adjacent to, but does not abut the rerouted Jurisdictional RPW that flows along and partially within the project boundary. The subject property is part of the Stono River watershed (03050202-050). According to SCDHEC watershed 03050202-050 is located in Dorchester and Charleston Counties and consists primarily of the Stono River and its tributaries from Log Bridge Creek to Wappoo Creek. The watershed occupies 157,400 acres of the Lower Coastal Plain and Coastal Zone regions of South Carolina. Land use/land cover in the watershed includes: 70.7% forested land, 7.0% forested wetland, 7.0% nonforested wetland, 5.8% urban land, 4.8% scrub/shrub land, 2.4% water, 2.2% agricultural land, and 0.1% barren land. In Log Bridge Creek at station MD-121 aquatic life uses are fully supported; however, there is a significant increasing trend in turbidity. There is a significant increasing trend in pH. This is a blackwater system, characterized by naturally low dissolved oxygen concentration conditions. Although dissolved oxygen excursions occurred, they were typical of values seen in blackwater systems and were considered natural, not standards violations. A significant decreasing trend in five-day biochemical oxygen demand suggests improving conditions for this parameter. Recreational uses are partially supported due to fecal coliform bacteria excursions. In the Stono River at station MD-202 aquatic life uses are not supported due to dissolved oxygen and copper excursions. There is also a significant increasing trend in total phosphorus concentration. A significant increasing trend in dissolved oxygen and significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. Recreational uses are fully supported. In Wappoo Creek at station MD-020 aquatic life uses are fully supported. A significant increasing trend in dissolved oxygen and significant decreasing trends in five-day biochemical oxygen demand and total nitrogen concentration suggest improving conditions for these parameters. There is a significant decreasing trend in pH. Recreational uses are fully supported, and a significant decreasing trend in fecal coliform bacteria concentration suggests improving conditions for this parameter. There are several landfills and numerous sand and clay mines within this watershed. The areas with a high potential for growth in the watershed include Stono Ferry in Hollywood; Rushland Plantation, Headquarters Plantation, and Fenwick Acres on Johns Island; and Bees Landing and Essex Farms in the City of Charleston.

The area around the subject property is largely forested with the majority of development concentrated around Maybank Highway. The Charleston County soil survey, USGS quad maps, aerial photos, and NWI maps were reviewed to determine how the subject property fits into the context of its relevant reach. The relevant reach for this property includes a drainage area approximately 1,000 acres in size approximately 400 acres of which are wetlands draining into the Stono River. The majority of these wetlands are forested. The subject relevant reach is approximately 1.5 river miles from the receiving Stono River, a TNW. Jurisdictional wetlands on-site total 10.486 acres which are adjacent to a rerouted jurisdictional RPW. The tributary was originally mapped on the NRCS Soils Map for Charleston County as a perennial stream which originated off-site and flowed through the site ultimately discharging into the Stono River. The NRCS soil survey map was based on 1963 aerial imagery with field work being completed by 1969 and final publication in 1971. The USGS Quadrangle which was published in 1971 displays the tributary rerouted via ditching. Sometime between the completion of fieldwork for the soil survey in 1969 and the publication of the USGS Quadrangle Map in 1971 the tributary was rerouted along the parcel boundary through the digging of a man made drainage feature ultimately reconnecting with its original path (identified as a blue line stream on the USGS Map and determined to be a jurisdictional RPW in a previous JD (SAC-2007-01176-2JX)) to the south and discharging into the Stono River. The pathway of the rerouted jurisdictional RPW is clearly evident on aerial imagery. Flow was observed on all site visits (9/20/12, 10/19/12, 1/18/13, 3/8/13, 3/11/13).

The review area contains a headwater stream system consisting of a tributary (the rerouted Jurisdictional RPW) and approximately 8 wetlands the majority of which are forested. The headwater system and forested palustrine wetlands which are similarly situated and adjacent to the perennial RPW are collectively performing a variety of functions that are important for the downstream waters and the watershed as a whole. These wetlands and tributaries not only provide habitat for various aquatic and terrestrial organisms, including a variety of insects, amphibians, reptiles, mammals and birds, but are also a source of food, nutrients, and carbon for organisms located downstream. Headwater wetlands and tributaries are especially important for the water quality of a watershed. Runoff, which may contain pollutants, sediments, excess nutrients, etc., from adjacent uplands that flows through wetlands before entering tributaries has the opportunity to be filtered out prior to flowing to downstream TNWs. Excess water can temporarily be stored in wetlands thereby minimizing potential flooding of downstream areas. In addition, water can also slowly be released from wetlands downstream to maintain seasonal flow volumes. Runoff water may also transport organisms, nutrients, and carbon from the wetlands into the tributaries, which continue to flow to downstream TNWs. Small headwater tributaries often have shallow water, low volume, and slow flow, which allows for more surface area of the water column to come into contact with channel substrate and any vegetation that may be present, allowing for sediments and pollutants to settle out of or be filtered from the water column before reaching downstream TNWs. The wetlands on-site as well as the rerouted RPW and its adjacent wetlands within the relevant reach have a significant nexus to the downstream TNW as they have the ability to provide a source of carbon and nutrients contributing to the primary productivity of downstream waters, can perform water quality functions, can provide water storage capabilities, can maintain seasonal flow volumes, and have the ability to transport organisms sediments, clean water, as well as any pollutants that may be present or could become present, to the downstream TNW. Based on the collective functions described above and their importance to the biological, chemical, and physical integrity of the traditional navigable waters of the Stono River, this office has determined that there is a Significant Nexus between the review area Relevant Reach, its adjacent wetlands, and the downstream TNW.

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

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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: **See other below.**

- ☐ 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: **Jurisdictional Pond A = 2.14 acres.**
    Identify type(s) of waters: **Jurisdictional Pond A was excavated out of Jurisdictional Wetland A and is now an open water feature within the wetland. The presence of water is readily visible on Google Earth aerial imagery from 1989-2015.**

3. Non-RPWs[8] 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.

[8]See Footnote # 3.

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:

Wetland A extends off-site to the south and west where it is contiguous with the relevant reach tributary.

Wetland B extends off-site to the north and west where it is contiguous with the relevant reach tributary. Wetland B is also a portion of a wetland that was determined to be directly abutting the relevant reach tributary in a previous Jurisdictional Determination (Wetland 1 from SAC-2012-00815-2JU Cane Slash, LLC. Approved Jurisdictional Determination Letter was issued on April 4, 2013).

Wetland H is contiguous with the off-site relevant reach tributary via a breach in the berm along the tributary.

☐ 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: **Jurisdictional Wetland A = 14.35 acres, Jurisdictional Wetland B = 0.72 acres, Jurisdictional Wetland H = 0.13 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 jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: **Jurisdictional Wetland C = 2.20 acres, Jurisdictional Wetland D = 0.62 acres, Jurisdictional Wetland E = 0.11 acres, Jurisdictional Wetland F = 0.18 acres, Jurisdictional Wetland G = 0.04 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: .

[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 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):

There is an abandoned borrow pit approximately 0.50 acres in size within the project area. This area is a water filled depression that is void of vegetation and appears to have been dug out of uplands. As stated in the Preamble to the November 13, 1986, Regulations found on page 41217, the following waters are generally not considered waters of the United States: "water filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and resulting body of water meets the definition of waters of the United States." This feature is not a "natural pond" or a "wetland" as identified in 33 CFR 328.3(a). Therefore the borrow pit is non-jurisdictional and not subject to regulation under Section 404 of the Clean Water Act.

There is a pond approximately 4.95 acres in size within the project area that was created for aesthetic purposes. It is filled with water in excess of 6 feet deep, void of vegetation, and appears to have been dug out of uplands. It was confirmed during a site visit to be surrounded by non-hydric soil. As stated in the Preamble to the November 13, 1986, Regulations found on page 41217, the following waters are generally not considered waters of the United States: "Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water primarily for aesthetic reasons." Therefore the pond is non-jurisdictional and not subject to regulation under Section 404 of the Clean Water Act.

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: **Wetland Delineation Submittal, Sabine & Waters, Inc.**
☒ 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.
☒ Office concurs with determination.
☒ Data sheets prepared by the Corps: **Group DP 1 Data Sheet 12/16/15.**
☐ 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: **Legareville**.

☒ USDA Natural Resources Conservation Service Soil Survey. Citation: **NRCS Web Soil Survey**.
☒ National wetlands inventory map(s). Cite name: **NWI Wetlands Mapper**.
☐ State/Local wetland inventory map(s): .
☐ FEMA/FIRM maps: .
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): **Google Earth 1989-2015**.
or ☐ Other (Name & Date): .
☒ Previous determination(s). File no. and date of response letter: **SAC-2012-00815-2JU Cane Slash, LLC. Approved Jurisdictional Determination Letter was issued on April 4, 2013. Shade Tree Tract (SAC-2015-00847-2JU). Preliminary Jurisdictional Determination Letter Issued 2/12/16**
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☒ Other information (please specify): **Charleston County LiDAR Digital Elevation Model (DEM) and Hillshade**.

B. ADDITIONAL COMMENTS TO SUPPORT JD:

Based on the biological, chemical, and physical functions described in SAC-2012-00815-2JU Cane Slash, LLC, this office has concluded that a Significant Nexus exists between this relevant reach, its similarly situated adjacent wetlands and the downstream TNW Stono River. Therefore, since Wetlands A, B, C, D, E, F, G, & H are adjacent to the relevant reach tributary, they are jurisdictional and subject to regulation under Section 404 of the Clean Water Act.