

**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): June 5, 2017**

**B. DISTRICT OFFICE, FILE NUMBER, FILE NAME: JD Form 1 of 1; SAC-2017-00060 Polaris Solar**

**C. PROJECT LOCATION AND BACKGROUND INFORMATION: Project is located at the southwest corner of Burke Duncan Road and State Road S-29-83 in Lancaster, SC**

State: South Carolina County/parish/borough: **Lancaster** City: **Lancaster**  
Center coordinates of site (lat/long in degree decimal format): Lat. **34.7544° N**, Long. **80.6623° W**.  
Universal Transverse Mercator: **NAD 83**

Name of nearest waterbody: **Gills Creek**

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

Name of watershed or Hydrologic Unit Code (HUC): **HUC 12: 030501030304**

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: **May 30, 2017**

Field Determination. Date(s): **February 22, 2017**

**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):<sup>1</sup>**

- TNWs, including territorial seas
- Wetlands adjacent to TNWs
- Relatively permanent waters<sup>2</sup> (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: **144** linear feet: width (ft) and/or acres.

Wetlands: **0.0037** acres.

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

Elevation of established OHWM (if known): .

**2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>**

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.

Explain: .

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

<sup>2</sup> 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).

<sup>3</sup> Supporting documentation is presented in Section III.F.

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<sup>4</sup> 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: **19,439 acres** ; HUC 12: **030501030304**

Drainage area: **63 acres**

Average annual rainfall: **46.10** inches

Average annual snowfall: **3.8** inches

**(ii) Physical Characteristics:**

**(a) Relationship with TNW:**

Tributary flows directly into TNW.

Tributary flows through **5** tributaries before entering TNW.

Project waters are **15-20** river miles from TNW.

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

Project waters are **10-15** 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<sup>5</sup>: **The seasonal stream on site flows southwest off of the site to an unnamed tributary which flows to another unnamed tributary which then flows into Gills Creek which flows into Cane Creek (TNW).**

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

<sup>5</sup> 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.

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

(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: **2** feet  
Average depth: **1** 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: Highly eroded, strong headcut into agricultural field. Heavily impacted by presence of cattle grazing.

Presence of run/riffle/pool complexes. Explain: **None**.

Tributary geometry: **Relatively straight**.

Tributary gradient (approximate average slope): **0-2** %

(c) Flow:

Tributary provides for: **Seasonal flow**

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

Describe flow regime: **Seasonal**.

Other information on duration and volume: **Seasonal flow is defined as tributaries that have continuous flow typically three months each year under normal climatic conditions. The tributary was defined with an ordinary high water mark mostly at the downstream end and contained a mix of very slow moving and standing water during the site visit on February 22, 2016. Besides receiving overland flow, this tributary is likely fed by ground water.**

Surface flow is: **Discrete and confined**. Characteristics: **Water is contained within eroded bed and bank of tributary under normal climatic conditions.**

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

Dye (or other) test performed:

Tributary has (check all that apply):

Bed and banks  
 OHWM<sup>6</sup> (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.<sup>7</sup> 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:**

<sup>6</sup>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.

<sup>7</sup>Ibid.

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

Explain: **Water color appeared clear and had oxidizing material. This tributary drains an area that is comprised of active cattle pasture. Land use/land cover in the watershed includes: 58.3% forested land, 24.1% agricultural land, 15.9% urban land, 0.8% water, 0.8% forested wetland (swamp), and 0.1% barren land.**

Identify specific pollutants, if known:

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

Riparian corridor. Characteristics (type, average width):

Wetland fringe. Characteristics: **There is a wetland adjacent to the tributary once the tributary reaches the edge of the agricultural land.**

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: **0.0037** acres

Wetland type. Explain: **Forested.**

Wetland quality. Explain: **The portion of wetland which is on-site is highly impacted by adjacent land use practices. The wetland is fed by a small eroded tributary which takes run-off from an active cattle pasture. While the wetland is forested and not actively grazed there are edge effects from the adjacent pasture. The wetland may be more stable off-site though this area was not investigated.**

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow.** Explain: **This wetland is associated with the seasonal stream. Water flows from the wetland during wetter months and after heavy rain.**

Surface flow is: **Overland sheetflow**

Characteristics: **This wetland feeds into an seasonal stream which heads off-site.**

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 **15-20** river miles from TNW.

Project waters are **10-15** 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: **This forested wetland is situated in an area surrounded by heavy agricultural land use. It receives run-off water through a small seasonal tributary which drains active cattle pasture. No surface water was observed within the wetland.**

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: **The forested wetland was dominated by red maple (*Acer rubrum*) and Chinese privet (*Ligustrum sinense*).**

Habitat for:

Federally Listed species. Explain findings:

Fish/spawn areas. Explain findings:

- Other environmentally-sensitive species. Explain findings: .
- Aquatic/wildlife diversity. Explain findings: **The wetland likely provides limited habitat for wildlife in the area.**

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

All wetland(s) being considered in the cumulative analysis: **1**  
 Approximately ( **0.0037** ) 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>
<b>Y</b>	<b>0.0037</b>		

Summarize overall biological, chemical and physical functions being performed: **The wetland in this significant nexus determination is performing biological, chemical and physical functions that relate to the integrity of the downstream TNW (Cane Creek). The wetland abuts a seasonal RPW which flows into an unnamed tributary which flows into another unnamed tributary which flows into Gills Creek and then into the TNW (Cane Creek). The wetland is forested and provides habitat for wildlife in the area. The wetland helps filter run-off and possible pollutants from the adjacent cattle pasture and surrounding land before reaching the TNW. The wetland also helps to maintain flow by storing flood waters during times of heavy rain.**

**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 wetland and seasonal tributary in this significant nexus determination are performing biological, chemical and physical**



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

**7. Impoundments of jurisdictional waters.<sup>9</sup>**

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):<sup>10</sup>**

- 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: **David Brame, Pilot Environmental Inc.**
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report and findings.
  - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: \_\_\_\_\_

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

<sup>10</sup> 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.

- Corps navigable waters' study: **1977 Navigability Survey.**
- U.S. Geological Survey Hydrologic Atlas: **HA 730-G, 1990 (03050108-01).**
  - USGS NHD data.
  - USGS 8 and 12 digit HUC maps. **HUC 12: 030501030304**
- U.S. Geological Survey map(s). Cite scale & quad name: **1:24,000 Unity.**
- USDA Natural Resources Conservation Service Soil Survey. Citation: **SSURGO Data; Georgeville, Herndon, Gills, Goldston-Pickens.**
- National wetlands inventory map(s). Cite name: **USFWS; R5UBH, R4SBC.**
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps: .
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): **Google Earth 11/2/2014.**  
or  Other (Name & Date): **Consultant photographs 1-2 of 2 dated December 14, 2016, Corps photos 1-10 of 10 dated February 22, 2017.**
- Previous determination(s). File no. and date of response letter: .
- Applicable/supporting case law: .
- Applicable/supporting scientific literature: .
- Other information (please specify): **Lancaster LiDAR Data, Corps site visit February 22, 2017.**

**B. ADDITIONAL COMMENTS TO SUPPORT JD: This site contains a seasonal tributary and a small forested wetland which were both examined on-site on February 22, 2017 due to their potential to be jurisdictional. RPWs and wetlands abutting RPWs are jurisdictional according to guidance provided, however, the significant nexus findings for the record are included as required by Rapanos Guidance. The waters documented on this form are jurisdictional waters of the U.S. and therefore subject to the Corps' authorities pursuant to the Clean Water Act**