

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

SECTION I: BACKGROUND INFORMATION

**A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):** 12-Jun-2008

**B. DISTRICT OFFICE, FILE NAME, AND NUMBER:** St. Louis District, MVS-2008-00306-JD1

**C. PROJECT LOCATION AND BACKGROUND INFORMATION:**

State : MO - Missouri  
County/parish/borough: St. Louis  
City: Florissant  
Lat: 38.77423333220645  
Long: -90.28832222222222  
Universal Transverse Mercator: [ ]  
Name of nearest waterbody: Black Jack Creek  
Name of nearest Traditional Navigable Water (TNW): Missouri  
Name of watershed or Hydrologic Unit Code (HUC): 7140101



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 the action and are recorded on a different JD form.

**D. REVIEW PERFORMED FOR SITE EVALUATION:**



Office Determination Date:



02-May-2008

Field Determination Date(s):

SECTION II: SUMMARY OF FINDINGS

**A. RHA SECTION 10 DETERMINATION OF JURISDICTION**

There [are not ] "navigable waters of the U.S." within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area.



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.

**1. Waters of the U.S.**

**a. Indicate presence of waters of U.S. in review area:<sup>1</sup>**

Water Name	Water Type(s) Present
Little Creek Nature Center 2008-306	Tributary consisting of both RPWs and non-RPWs

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

Area: (m<sup>2</sup>)

Linear: 1000 (m)

**c. Limits (boundaries) of jurisdiction:**

based on: Established by OHWM.

OHWM Elevation: (if known)

**2. Non-regulated waters/wetlands:<sup>3</sup>**

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain:None.

**SECTION III: CWA ANALYSIS**

**A. TNWs AND WETLANDS ADJACENT TO TNWs**

**1.TNW**

TNW Name	Summarize rationale supporting determination:
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**2. Wetland Adjacent to TNW**

Wetland Name	Summarize rationale supporting conclusion that wetland is "adjacent":
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**B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):**

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

**(i) General Area Conditions:**

Watershed size: 10000 acres

Drainage area: 50 acres

Average annual rainfall: 38.17 inches

Average annual snowfall: 8.9 inches

**(ii) Physical Characteristics**

**(a) Relationship with TNW:**

- Tributary flows directly into TNW.
- Tributary flows through [ ] tributaries before entering TNW.

:Number of tributaries

Project waters are 5-10 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:

Identify flow route to TNW:<sup>5</sup>

The unnamed tributary begins as an ephemeral waterway on the project site. It picks up visible groundwater influence and becomes an intermittent stream. As it continues on the project site, it joins with another intermittent waterbody and turns to a perennial stream. This flows to Black Jack Creek, to Maline Creek, a primary tributary to the Mississippi River, a traditional navigable waterway.

**Tributary Stream Order, if known:**

Not Applicable.

**(b) General Tributary Characteristics:**

**Tributary is:**

Not Applicable.

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

Not Applicable.

**Primary tributary substrate composition:**

Not Applicable.

**Tributary (conditions, stability, presence, geometry, gradient):**

Not Applicable.

**(c) Flow:**

Not Applicable.

**Surface Flow is:**

Not Applicable.

**Subsurface Flow:**

Not Applicable.

**Tributary has:**

Not Applicable.

**If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction:**

**High Tide Line indicated by:**

Not Applicable.

**Mean High Water Mark indicated by:**

Not Applicable.

**(iii) Chemical Characteristics:**

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

Not Applicable.

**(iv) Biological Characteristics. Channel supports:**

Not Applicable.

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

**(i) Physical Characteristics:**

**(a) General Wetland Characteristics:**

**Properties:**

Not Applicable.

**(b) General Flow Relationship with Non-TNW:**

**Flow is:**

Not Applicable.

**Surface flow is:**

Not Applicable.

**Subsurface flow:**

Not Applicable.

**(c) Wetland Adjacency Determination with Non-TNW:**

Not Applicable.

**(d) Proximity (Relationship) to TNW:**

Not Applicable.

**(ii) Chemical Characteristics:**

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

Not Applicable.

**(iii) Biological Characteristics. Wetland supports:**

Not Applicable.

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

**All wetlands being considered in the cumulative analysis:**

Not Applicable.

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

Not Applicable.

**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.**

**Findings for:** Little Creek Nature Center 2008-306

The unnamed, non-Relatively Permanent Flow Water (non-RPW) possesses features of both an ephemeral, intermittent and perennial tributary with an ordinary high water mark (OHW). Specifically, the waterbody exhibits characteristics of an ephemeral tributary in the area of proposed impact. It averages approximately 5 feet at the bed width and approximately 4 feet for the bank height. Features observed supporting clear evidence of flow and an OHW throughout the entire channel include: sediment deposition, scour, and a clear line impressed on the bank. As it continues to flow downstream on-site, visible evidence of groundwater influence is apparent and the stream becomes intermittent. It joins another intermittent tributary on the property, and together, become a perennial stream. This is also evident on the USGS topographic quadrangle as it is represented at this point as a solid, unnamed, blue line. Based on observed characteristics and its location within the 50 acre drainage area, the unnamed tributary indicates first order stream hydrology. There is not any interruption of flow or hydrologic connectivity between the 1000 linear foot tributary and Black Jack Creek. Based on observed conditions, the unnamed tributary has the capacity to carry surface flow hydrology via a discrete and confined channel to Black Jack Creek. The on-site segment of the tributary later becomes perennial, as stated above, which flows into Black Jack Creek. Black Jack Creek flows to Maline Creek, a primary tributary to the Mississippi River. It has been determined that the non-RPW maintains hydrologic connectivity to Black Jack Creek and the Mississippi River, thereby providing a significant nexus between the non-RPW and a TNW. Hydrologic connectivity refers to the flow that transports organic matter and nutrients, energy, and aquatic organisms throughout the system (Freeman et al., 2006). The following outlines how the unnamed RPW maintains a significant nexus to Black Jack Creek, Maline Creek, and the Mississippi River through its hydrologic connectivity. The non-RPW's surrounding riparian area and general conditions of its watershed consist of forested conditions, suggesting an continual source of organic input through interception of leaf litter and coarse woody debris. During the site visit, evidence of the following in-stream organic components were observed: leaves, woody debris, and leaf fragments. Organic material, such as those described, are processed by a number of fungi, bacteria, and invertebrates. Leaves and other detrital material are processed by a feeding group referred to as shredders, which can include larvae of craneflies, caddisflies, nymphs of stoneflies, and crayfish. Shredders break down coarse particulate matter, allowing the processed material to be utilized by a secondary group, commonly referred to as collectors. Collectors then process the finer materials of organic matter, eventually contributing to the dissolved organic matter content and fine particulate matter content that continually flows downstream (Smith and Smith 2001). In general, as the coarse particulate organic matter and fine particulate organic matter is transferred downstream, invertebrate populations migrate with the material. The diversity of aquatic fauna in headwater streams contributes to the biodiversity of a river (Meyer et al. 2007), and as these drifting invertebrate populations are being transported downstream, they fit into the complex foodweb of both Black Jack and Maline Creeks, and the Mississippi River. The unnamed RPW influences the chemistry of Black Jack Creek through its transport of sediments and nutrients and geochemical cycling. Rainfall within this area provides a frequent pulse of hydrology, thus providing a source of hydrology to local waterways. It is anticipated that the on-site tributary contributes to the chemical make up of Black Jack Creek, through its ability to convey sediments and nutrients during these pulses. Although specific pollutants were not observed within the channel, it is anticipated that the watercourse is the recipient of non-point source pollutants such as fertilizers, pesticides, and other pollutants that are common to an urban environment. These nutrients and chemicals can be transported downstream to Black Jack Creek as they are

carried in suspension in stormwater. After water flows through the channel, the process of drying produces natural chemical and physical changes in the headwater stream. It has been identified that in even when headwater streams dry up, they continue to be an integral part of the overall stream conditions through their influence on river chemistry (Izbicki 2007). Lastly, headwater streams have been documented as providing necessary habitat for a variety of birds, mammals, reptiles, and amphibious populations. Because headwater streams have a small catchment area, they are varied and maintain some of the most diverse habitats within a lotic system. Headwater streams are utilized not only by species unique to headwater streams, but are also used by animals requiring headwater streams for certain life stages and/or are utilized by animals that migrate between headwater environments and larger waters (Meyer 2007). The non-RPW maintains a hydrologic connection to Black Jack Creek through an open and defined channel. Evidence of water flow was indicated through the presence of clear indicators of an OHW. Due to the hydrologic connection, the unnamed tributary has the capacity to contribute hydrology, carry pollutants, provide habitat for aquatic life cycles, and provide organic input to downstream waters. Based on these hydrologic connections, it has been determined that the non-RPW maintains a significant nexus to Black Jack Creek, and subsequently Maline Creek, and the Mississippi River.

LITERATURE CITED  
 Chapra, S.C. 1997. Surface Water-Quality Modeling. WCB McGraw-Hill, BurrRidge, Illinois  
 Freeman, M.C., C.M. Pringle, and C. R. Jackson. 2007. Hydrologic Connectivity and the Contribution of Stream Headwaters to Ecological Integrity at Regional Scales. Journal of the American Water Resources Association 43:5-14.  
 Izbicki, J.A. 2007. Physical and Temporal Isolation of Mountain Headwater Streams in the Western Mojave Desert, Southern California. Journal of the American Water Resources Association. 43: 26-40.  
 Meyer, J.L., D.L. Strayer, J.B. Wallace, S.L. Eggert, G.S. Helfman, and N.E. Leonard. 2007. The Contribution of Headwater Streams to Biodiversity in River Networks. Journal of the American Water Resources Association. 43: 86-103.  
 Smith, R.L. and T.M. Smith. 2001. Ecology and Field Biology. Benjamin Cummings, New York, pp. 644-650.

**D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE:**

**1. TNWs and Adjacent Wetlands:**

Wetland Name	Type	Size (Linear) (m)	Size (Area) (m <sup>2</sup> )
Little Creek Nature Center 2008-306	Tributary consisting of both RPWs and non-RPWs	1000	-
<b>Total:</b>		<b>1000</b>	<b>0</b>

**2. RPWs that flow directly or indirectly into TNWs:**

Not Applicable.

**Provide estimates for jurisdictional waters in the review area:**

Not Applicable.

**3. Non-RPWs that flow directly or indirectly into TNWs:<sup>8</sup>**

Not Applicable.

**Provide estimates for jurisdictional waters in the review area:**

Not Applicable.

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

Not Applicable.

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

Not Applicable.

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

Not Applicable.

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

Not Applicable.

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

Not Applicable.

**Provide estimates for jurisdictional wetlands in the review area:**

Not Applicable.

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

Not Applicable.

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

Not Applicable.

**Identify water body and summarize rationale supporting determination:**

Not Applicable.

**Provide estimates for jurisdictional waters in the review area:**

Not Applicable.

**F. NON-JURISDICTIONAL WATERS. INCLUDING WETLANDS**

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):

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

Not Applicable.

**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.**

Not Applicable.

**SECTION IV: DATA SOURCES.**

**A. SUPPORTING DATA. Data reviewed for JD**

(listed items shall be included in case file and, where checked and requested, appropriately reference below):

<b>Data Reviewed</b>	<b>Source Label</b>	<b>Source Description</b>
--Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant	-	Map of topo lines, non-USGS
--U.S. Geological Survey map(s).	Florissant, MO USGS Quad	7.5 minute
--National wetlands inventory map(s).	Florissant, MO USGS Quad	7.5 minute
--Photographs	-	-
----Aerial	-	-
----Other	-	-

**B. ADDITIONAL COMMENTS TO SUPPORT JD:**

**Description**

Site visit conducted with agent on 2 May 2008.

- <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.
- <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.
- <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.
- <sup>8</sup>-See Footnote #3.
- <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.