# **Jurisdictional Waters Determination**

Botts Road and Missouri Highway 150 Adaptive Ecosystems Project #: 2007-107

September 2007

Prepared for

# Piper Wind-Tapan AM

Prepared by:



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# Executive Summary

Piper Wind-Tapan AM (PW-TA) tasked Adaptive Ecosystems, Inc. to complete a jurisdictional waters identification, including a wetland determination in accordance with the U.S. Army Corps of Engineers (USACE) *Wetlands Delineation Manual*. PW-TA is under contract with the General Services Administration (GSA). The GSA is considering a development at Botts Road and 150 Highway in Jackson County, Missouri. The 187-acre site is located northwest of the intersection of Botts Road and 150 Highway, near Grandview in the southeast 1/4 of Section 27, Township 47 North, Range 33 West of Jackson County, Missouri.

In August of 2007, Adaptive Ecosystems, Inc. conducted a pedestrian survey of the area in question to identify jurisdictional Waters of the U.S. (WOUS). Aquatic resources identified within the project area include a total of eight tributaries and seven wetlands.

Aquatic resources were evaluated based on the guidance of *Rapanos vs. United States and Carabell vs. United States.* These elevations are referred throughout the report as "Rapanos determinations". The project includes relatively permanent waters (RPW), Non-RPWs with a potential nexus, wetlands abutting and adjacent to RPWs or Non-RPWs, and isolated wetlands. For the purposes of this report, all intermittent tributaries were considered RPWs; all ephemeral tributaries were considered Non-RPWs. RPW and Non-RPW determinations and significant nexus determinations are subjective. Rapanos determinations may be revised after review and coordination with the USACE.

The project area contains approximately 8,541 linear feet (1.f.) (0.26 acre) of potential jurisdictional tributaries and 0.39 acre (ac.) of potential jurisdictional wetlands. There are no open water features on the project area. The cumulative total area of jurisdictional WOUS (tributaries and wetlands) on the project areas is approximately 0.65 ac. Non-jurisdictional isolated wetlands measured 0.98 ac.

The information presented in this report is limited to a discussion of existing jurisdictional aquatic resources identified within the proposed project and does not address construction-related impacts to WOUS.

#### Note:

1. All statements presented in this report concerning jurisdictional and jurisdictional Waters of the United States are considered preliminary until the U.S. Army Corps of Engineers provides written concurrence with the report's findings.

2. All acreages are approximate. On the tables, the precision of area measurements for individual features were estimated to  $1/1000^{16}$  of an acre due to the small size of various features. The acreage totals within the report text, however, have been rounded to the nearest  $1/100^{16}$ .

3. All lengths are approximate. The linear distances have been rounded to the nearest foot; the Ordinary High Water Marks, Tributary Top of Bank widths and Tributary heights have been rounded to the nearest 1/10<sup>th</sup> of a foot.

4. GPS mapping was completed using a sub-meter capable unit.

## 1.0 Introduction

Piper Wind-Tapan AM (PW-TA) tasked Adaptive Ecosystems, Inc. to complete a jurisdictional waters identification, including a wetland determination in accordance with the U.S. Army Corps of Engineers (USACE) *Wetlands Delineation Manual*. PW-TA is under contract with the General Services Administration (GSA). The GSA is considering a development at Botts Road and 150 Highway in Jackson County, Missouri (**Figure 1**). The 187-acre site is located northwest of the intersection of Botts Road and 150 Highway, near Grandview in the southeast 1/4 of Section 27, Township 47 North, Range 33 West of Jackson County, Missouri.

Jurisdictional waters are described for the entire project. Figures are provided in **Appendix A**, site photographs are in **Appendix B**, data sheets are in **Appendix C**, and jurisdictional determination forms are provided in **Appendix D**.

# 2.0 Determination Methods

Wetland determination methods followed guidelines outlined in the USACE *Wetlands Delineation Manual* (USACE, 1987). Adaptive Ecosystems used the Routine Wetland Determination Method provided in the USACE manual. Ordinary High Water Mark determinations were based on guidelines outlined in the USACE *Ordinary High Water Mark Identificaiton* regulatory guidance letter (USACE, 2005). A review of resource maps was performed to prepare for the field work. Field references included the National List of Plant Species that Occur in Wetlands: Region 3 [United States Fish and Wildlife Service (USFWS, 1988)]; *The Grasses of Missouri* (Kucera, 1961); *Guide to the Vascular Flora of Illinois* (Mohlenbrock, 1986); and Munsell Soil Color Charts (Kollmorgen Instruments Corporation, 2000).

A pedestrian survey was completed for the entire project area. All mapping of jurisdictional features was based on data collected with a Trimble GeoExplorer GPS unit and in-house GIS.

## 2.1 Existing Information

Adaptive Ecosystems acquired information from several sources prior to performing the on-site wetland determinations (see **Figures 2 through 4**). Climate and vegetation in the area are also discussed. A summary of the in-house review is provided below.

## 2.2 USGS 7.5' Topographic Survey

The U.S. Geological Survey (USGS) topographic survey for the Belton, Missouri, quadrangle shows two unnamed tributaries bisecting the area. Site topography consists of agricultural fields gently sloping to the east (USGS, 1991).

The property is located in the Little Blue River Watershed. Runoff from the contributing watershed flows into unnamed tributaries. The unnamed tributaries drain east to the Little Blue River. The Little Blue River drains into the Missouri River. Surface drainage patterns were identified by conducting a thorough project area survey and by using topographic maps with 10-foot intervals (**Figure 2; Appendix A**).

## 2.3 Jackson County Soil Survey

The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey maps (USDA SCS, 1984; USDA NRCS, 2007) used to determine the soil information for the property and surrounding area are provided as **Figure 3** (**Appendix A**). Mapped soil types for the project area were compared to the Missouri Hydric Soils List (USDA NRCS, 2007). Greenton silty clay loam, 5 to 9 percent slopes; Sampsel silty clay loam, 5 to 9 percent slopes; and Kennebec silt loam, occasionally flooded; all have hydric soil inclusions. The property contains the following soil types:

- **6B Sharpsburg silt loam, 2 to 5 percent slopes:** This soil consists of deep, moderately well-drained, moderately slowly permeable soils on convex ridgetops (USDA SCS, 1984).
- **6C2 Sharpsburg silt loam, 5 to 9 percent slopes**: This soil consists of deep, moderately well-drained, moderately slowly permeable soils on convex side slopes and

narrow, convex ridgetops (USDA SCS, 1984).

- **11C Greenton silty clay loam 5 to 9 percent slopes**: This soil consists of deep, somewhat poorly drained, slowly permeable soils on upland side slopes (USDA SCS, 1984). This soil has inclusions of Sampsel hydric soils (USDA NRCS, 2007).
- 13C Sampsel silty clay loam 5 to 9 percent: This soil consists of deep, poorly drained, slowly permeable soils on concave side slopes and foot slopes along drainageways (USDA SCS, 1984). This is a hydric soil (USDA NRCS, 2007).
   30 Kennebec silt loam, occasionally flooded: This soil consists of deep, moderately well-drained, moderately permeable soils on floodplains along small or medium streams (USDA SCS, 1984). This soil has inclusions of Colo and Nodaway hydric soils (USDA NRCS, 2007).
- **62B Macksburg-Urban land complex, 2 to 5 percent**: This soil consists of deep, somewhat poorly drained, moderately permeable soils on wide convex ridges (USDA SCS, 1984).

### 2.4 National Wetlands Inventory

Review of the National Wetlands Inventory (NWI) maps for the Belton, Missouri, quadrangle U.S. Department of the Interior (USDOI, 2007) identified no potential wetland features on the project area (**Figure 4**). Features shown on the NWI map are not comprehensive and are not intended to reflect jurisdiction.

#### 2.5 Climate

Precipitation in Kansas City, Missouri, averages 35.75 inches per year. Approximately 70 percent of the annual precipitation occurs between the months of April and September. January is typically the driest month with an average of 1.17 inches, and June is the wettest month with an average of 5.18 inches. The growing season is between March 25<sup>th</sup> and November 6<sup>th</sup> and is 220 days long. The 5 percent continuous inundation/saturation requirement is 11 days. January is the coldest month in Kansas City, Missouri, with an average minimum temperature of 19.8° F and an average maximum temperature of 37.8° F. The warmest month is July with an average minimum temperature of 70.8° F and an average maximum temperature of 89.2° F. The mean date of the first fall frost is October 31<sup>st</sup>, and that of the last spring freeze is April 2<sup>th</sup>. Prevailing winds are typically from the south with the highest speeds occurring in spring, averaging 12 miles per hour (USDA Soil Conservation Service, 1984).

#### 2.6 Vegetation

According to *Ecoregions of the United States* (Bailey, 1995), the historic regional vegetation for the project area consisted of native plant species typical of a grassland-forest transition area, characterized by intermingling deciduous forests, wildflowers, and a variety of tall- and short-prairie grass species. With the impacts of agriculture, however, native vegetation is primarily confined to riparian corridors and areas of significant slope. The majority of the area is used for agricultural purposes. The upland areas not in crop production are vegetated with a blend of cool-season forage grasses and broad-leaved herbs.

# 3.0 Determination Results

This chapter is a presentation of aquatic resources and their jurisdictional status based on U.S. Army Corps of Engineers *Jurisdictional Determination Form Instructional Guidebook* (USACE, 2007). There are no Traditional Navigable Waters on the project area (TNW). The tributaries are placed into one of two categories: Relatively permanent waters (RPW) or non-relatively permanent waters (Non-RPW). The wetlands are listed with the tributaries they abut or are adjacent to. Aquatic resources and jurisdictional waters discussion is supported by the approved Jurisdictional Data Form (USACE, 2007).

The eight potential jurisdictional tributaries that have been identified within the project area (see **Figure 5**) have been arranged into jurisdictional determination categories. All ephemeral tributaries were classified as Non-RPWs. There are no impoundments in the project area. Isolated waters are described in this chapter. The jurisdictional data forms for these features are found in **Appendix D**.

## 3.1 Traditional Navigable Waters

TNWs are all tidal waters and waters that have been, could be, or are used in interstate or foreign commerce. TNWs are jurisdictional and any tributary that continually flows directly or indirectly at least seasonally into a TNW is also jurisdictional. There are no TNWs on the project area. At a distance of 19 aerial miles and greater than 30 river miles, the closest TNW is the Missouri River in Jackson County, Missouri. The RPWs and Non-RPWs listed below are connected to the Missouri River through on-site unnamed tributaries that drain into the Little Blue River.

### 3.2 Relatively Permanent Waters

RPWs are tributaries that flow year round or have continuous flow at least seasonally, and that flow directly or indirectly into a TNW. A wetland that abuts a tributary has no distinction between the immediate edge of the tributary and the wetland itself. An adjacent tributary has a barrier between itself and the tributary, but is connected by surface flow. A wetland adjacent to a RPW or Non-RPW must have a significant nexus. A significant nexus is a more than speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW (USACE, 2007). Abutting wetlands do not need a significant nexus analysis. Stream survey data sheets are provided in **Appendix C**. **Appendix D** presents the jurisdictional determination forms which describe in detail the type, length, area, channel and flow characteristics, hydrology, subwatershed area, river and aerial miles to an RPW, floodplain location, and feature position in relation to RPWs of Waters of the U.S. (WOUS) observed on the project area. For the purposes of this report, all intermittent tributaries are considered RPWs. There are three RPWs on the project area (**Table 3-1, Figure 5**).

Intermittent 1 (I-1): I-1 is an unnamed relatively straight intermittent tributary (1,313 l.f.) with a boulder/cobble/silt bed and is bounded by a mixture of scrub-shrub riparian corridor and agricultural fields. I-1 is a manipulated channel that is now used to drain adjacent agricultural fields. Upstream and downstream of the project boundaries, I-1 is a natural channel. I-1 flows at least seasonally, with a subwatershed size of 80 ac. (Figure 6). I-1 discharges into an off-site unnamed tributary to the east, which discharges into the

Little Blue River and ultimately into the Missouri River. There are no adjacent wetlands. The abutting wetlands are:

- Palustrine Scrub-shrub Wetland/Palustrine Emergent Wetland 1 (PSS/PEM-1): PSS/PEM-1 is a fringe wetland abutting I-1. The vegetation was a mixture of scrub-shrub and emergent wetland species. The vegetation was predominantly hydrophytic and dominated by black willow (*Salix nigra*), cottonwood (*Populus deltiodes*), and cat-tail (*Typha latifolia*). Soils sampled at PSS/PEM-1 displayed gleyed or low-chroma colors. PSS/PEM-1 is approximately 0.18 ac.
- Intermittent 2 (I-2): I-2 is an unnamed relatively straight intermittent tributary (2,342 l.f.) with a cobble/silt bed and is bounded by an herbaceous riparian corridor. I-2 is a manipulated channel that is now used to drain adjacent agricultural fields. Figure 2 shows evidence that this tributary is a result of natural drainage. I-2 has a subwatershed size of 311 ac. (Figure 6). I-2 drains into I-1, which ultimately drains into the Missouri River. There are no adjacent wetlands. The abutting wetlands are:
  - **Palustrine Scrub-shrub 1 (PSS-1):** PSS-1 is a fringe wetland located along I-2. The vegetation was predominantly hydrophytic and dominated by black willow (*Salix nigra*), cottonwood (*Populus deltiodes*), cat-tail (*Typha latifolia*), and nutsedge (*Cyperus esculentus*). Soils sampled at PSS-1 displayed reducing conditions and gleyed or low-chroma colors. PSS-1 is approximately 0.05 ac.
- Intermittent 3 (I-3): I-3 is an unnamed meandering intermittent tributary (952 l.f.) with a cobble/silt bed and a forested riparian corridor. I-3 has a subwatershed size of 121 ac. (Figure 6) and drains ultimately into the Missouri River. There are no abutting wetlands. The adjacent wetlands are:
  - **Palustrine Emergent Wetland 3 (PEM-3):** PEM-3 is a wetland located near I-3. It discharges by surface drainageways into I-3 through approximately 50 l.f. of the riparian corridor of I-3. PEM-3 acts as a buffer for I-3 from sediments and pollution from the surrounding agricultural field. The vegetation was predominantly hydrophytic and dominated by silver maple (*Acer saccharinum*), nutsedge (*Cyperus esculentus*), and Virginia wild rye (*Elymus virginicus*). Soils sampled at PEM-3 displayed gleyed or low-chroma colors. PEM-3 is approximately 0.14 ac.

## **3.3** Non-relatively Permanent Waters

Non-RPWs are tributaries that do not have continuous flow at least seasonally. Non-RPWs are jurisdictional where there is a significant nexus to a TNW. Stream survey data sheets are provided in **Appendix C**. **Appendix D** presents the jurisdictional determination forms which describe in detail the type, length, area, channel and flow characteristics, hydrology, subwatershed area, river and aerial miles to an RPW, floodplain location, and feature position in relation to RPWs of Waters of the U.S. (WOUS) observed on the project area. For the purposes of this report, all ephemeral tributaries are considered Non-RPWs. There are eight Non-RPWs.

• **Ephemeral 1 (E-1):** E-1 is a meandering ephemeral tributary (1,026 l.f.) with a cobble/silt bed, is bounded by agricultural fields, and drains into an I-2. I-2 drains

into I-1, which ultimately discharges into the Missouri River. E-1 has a subwatershed size of 44 ac. (**Figure 6**). E-1 drains the surrounding agricultural fields and the pollutants and erosion associated with conventional agriculture. The transportation of pollution and erosion are the basis for the determination of a significant nexus. There are no abutting or adjacent wetlands.

- Ephemeral 2a (E-2a): E-2a is a meandering ephemeral tributary (372 l.f.) with a silt bed and a forested riparian corridor. The area between E-2a and E-2b is a vegetated drainageway with discontinuous ordinary high water mark (OHWM). Braided channels, labeled as D-3 on Figure 5, are found in this area that start and stop abruptly. These channels are not connected, have vegetation within the bottom of the channel, and there are considerable distances without any channels at all. It can be assumed through the topographic map (Figure 2) that E-2a and E-2b were once one channel and that agricultural practices have since separated them. E-2a drains by overland sheet flow through the vegetated drainageway into E-2b. E-2b drains into I-2, I-2 drains into I-1, which indirectly discharges into the Missouri River. E-2a and E-2b have a combined subwatershed size of 60 ac. (Figure 6). E-2a drains the surrounding agricultural fields and the pollutants and erosion associated with conventional agriculture. The transportation of pollution and erosion are the basis for a determination of a significant nexus. There are no abutting or adjacent wetlands.
- **Ephemeral 2b (E-2b):** E-2b is a relatively straight ephemeral tributary (989 1.f.) with a cobble/silt bed and has an herbaceous riparian corridor. E-2b drains into I-2, I-2 drains into I-1, which ultimately discharges into the Missouri River. E-2a and E-2b have a combined subwatershed size of 60 ac. (**Figure 6**). E-2b drains the surrounding agricultural fields and the pollutants and erosion associated with conventional agriculture. The transportation of pollution and erosion are the basis for a determination of a significant nexus. There are no abutting or adjacent wetlands.
- Ephemeral 3 (E-3): E-3 is a meandering ephemeral tributary (1,053 l.f.) with a silt bed and a forested riparian corridor. E-3 drains into I-3, which ultimately discharges to the Missouri River. E-3 has a subwatershed size of 59 ac. (Figure 6). E-3 drains the surrounding agricultural fields. The forested riparian corridor acts as a buffer from the pollutants and erosion associated with conventional agriculture. E-3 has flood storage capabilities. Buffering of pollutants and erosion, and flood storage are the basis for a determination of a significant nexus. There are no adjacent wetlands. The wetlands abutting E-3 are listed below:
  - **Palustrine Emergent Wetland 1 (PEM-1):** PEM-1 is a fringe wetland located along E-3. The vegetation was predominantly hydrophytic and dominated by reed canary grass (*Phalaris arundinacea*) and Pennsylvania smartweed (*Polygonum pensylvanicum*). Soils sampled at PEM-1 displayed gleyed or low-chroma colors. PEM-1 is approximately 0.03 ac.
- **Ephemeral 4 (E-4):** E-4 is a meandering ephemeral tributary (494 l.f.) with a cobble/silt bed and a forested riparian corridor. E-4 is part of a vegetated drainageway that drains the northwestern-most area of the property. Through most of this drainageway there is

no continuous OHWM, this is labeled as D-5 on **Figure 5**. E-4 starts at the point where there is an OHWM that is continuous until it reaches I-3. E-4 drains into I-3, which ultimately discharges into the Missouri River. E-4 has a subwatershed size of 46 ac. (**Figure 6**). The forested riparian corridor acts as a buffer from the pollutants and erosion associated with conventional agriculture. E-3 has flood storage capabilities. Buffering of pollutants and erosion, and flood storage act are the basis for a determination of a significant nexus. There are no abutting or adjacent wetlands.

### 3.4 Isolated Waters

An isolated water feature is a wetland that is not directly connected to a jurisdictional water. Isolated waters can be jurisdictional if they have a significant nexus with a TNW. If an isolated water does not have a significant nexus with a TNW, the isolated water is non-jurisdictional. There are three isolated water features on the project area. The jurisdictional determination forms are found in **Appendix D** and in the data sheets in **Appendix B**.

Isolated waters without a significant nexus include:

- **Palustrine Emergent Wetland 2 (PEM-2):** PEM-2 is a depressional wetland located near I-2. While PEM-2 discharges into I-2 through surface drainage, PEM-2 does not have a significant biological, chemical, or physical impact on a TNW. PEM-2 is of sufficient distance from I-2 that it does not provide pollution retention, flood storage, or habitat to species found in a TNW. PEM-2 is at a higher elevation than I-2 and would likely not connect during flood events. The vegetation was predominantly hydrophytic and dominated by Pennsylvania smartweed (*Polygonum pensylvanicum*), nutsedge (*Cyperus esculentus*), toothcup (*Ammannia coccinea*), and hop sedge (*Carex lupulina*). Soils sampled at PEM-2 displayed gleyed or low-chroma colors. PEM-2 is approximately 0.78 ac.
- **Palustrine Emergent Wetland 4 (PEM-4):** PEM-4 is a depressional wetland located near I-2. While PEM-4 discharges into I-2 through surface drainage, PEM-4 does not have a significant biological, chemical, or physical impact on a TNW. PEM-4 is of sufficient distance from I-2 that it does not provide pollution retention, flood storage, or habitat to species found in a TNW. PEM-4 is at a higher elevation than I-2 and would likely not connect during flood events. It discharges by surface drainage indirectly into I-2. The vegetation was predominantly hydrophytic and dominated by water pepper (*Polygonum hydropiper*), nutsedge (*Cyperus esculentus*), toothcup (*Ammannia coccinea*), and hop sedge (*Carex lupulina*). Soils sampled at PEM-4 displayed reducing conditions and gleyed or low-chroma colors. PEM-4 is approximately 0.04 ac.
- Palustrine Scrub-shrub Wetland/Palustrine Emergent Wetland 2 (PSS/PEM-2): PSS/PEM-2 is a depressional wetland located near I-2. It discharges by surface drainage indirectly into I-2. While PSS/PEM-2 discharges into I-2 through surface drainage, PSS/PEM -2 does not have a significant biological, chemical, or physical impact on a TNW. PSS/PEM-2 is of sufficient distance from I-2 that it does not provide pollution retention, flood storage, or habitat to species found in a TNW. PSS/PEM -2 is at a higher elevation than I-2 and would likely not connect during flood events. The vegetation was

a mixture of scrub-shrub and emergent wetland species. The vegetation was predominantly hydrophytic and dominated by black willow (*Salix nigra*), cottonwood (*Populus deltiodes*), nutsedge (*Cyperus esculentus*), and cat-tail (*Typha latifolia*). Soils sampled at PSS/PEM-2 displayed reducing conditions and gleyed or low-chroma colors. PSS/PEM-2 is approximately 0.16 ac.

#### 3.5 Drainages

Drainages are swales, erosional features, or small washes that are characterized by low flow volume, infrequent and short duration flow; ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water; uplands transporting overland flow generated from precipitation (USACE, 2007). Drainages are not jurisdictional. There are five drainages within the project area that need discussion.

- **Drainage 1 (D-1):** D-1 is an erosional feature. D-1 has 1:1 side slopes and is a highly eroded feature. D-1 would not be present except for agricultural practices surrounding it.
- **Drainage 2 (D-2):** D-2 is an erosional feature. D-2 has 1:1 side slopes and is a highly eroded feature. Flowing water was present in D-2 near its convergence with I-1. This flow was due to the deep erosion reaching the current water table. D-2 would not be present except for agricultural practices surrounding it.
- **Drainage 3 (D-3):** D-3 is a vegetated drainageway consisting of braided channels that start and stop abruptly. These channels are not connected, have vegetation in the bottom of the channel, and there are considerable distances without any channels at all.
- **Drainage 4 (D-4):** D-4 is an erosional feature. D-4 has 2:1 side slopes and is a highly eroded feature. Its erosion has been slowed by a stand of dogwoods. D-4 would not be present except for agricultural practices surrounding it.
- **Drainage 5 (D-5):** D-5 is a vegetated drainageway consisting of braided channels that start and stop abruptly. These channels are not connected, have vegetation in the bottom of the channel, and there are considerable distances without any channels at all.

# Table 3-1: Botts Road and Missouri Highway 150Preliminary Jurisdictional Waters

Feature ID	Resource Type	Classification	Abutting Wetlands	Adjacent Wetlands	Total Stream (linear	Total Area (acres)	OHWM Width (feet)	Feature Abuts RPW	Adjacent RPW
					feet)	× ,			
Tributaries	•	·	·						·
I-1	Intermittent	RPW	PSS/PEM-1		1313	0.045	1.5		
I-2	Intermittent	RPW	PSS-1		2342	0.053	1.0		
I-3	Intermittent	RPW		PEM-3	952	0.044	2.0		
E-1	Ephemeral	NON-RPW			1026	0.047	2.0		
E-2a	Ephemeral	NON-RPW			372	0.004	0.5		
E-2b	Ephemeral	NON-RPW			989	0.022	1.0		
E-3	Ephemeral	NON-RPW	PEM-1		1053	0.024	1.0		
E-4	Ephemeral	NON-RPW			494	0.017	1.5		
	Subtotal				8,541	0.26			
Adjacent and A	butting Wetlands								
PEM-1	Palustrine Emergent Wetland	Directly Abutting E-3			-	0.030	-	E-3	
PEM-3	Palustrine Emergent Wetland	Adjacent to I-3			-	0.138	-		I-3
PSS-1	Palustrine Scrub Shrub Wetland	Directly Abutting I-2			-	0.045	-	I-2	
PSS/PEM-1	Palustrine Scrub Shrub/	Directly Abutting I-1			-	0.179	-	I-1	
	Palustrine Emergent wetland					0.20			
	Subtotal				-	0.39			
	Total of Jurisdictional Features	<b>j</b>			8,541	0.65			
Isolated Wetlan	ds without a Significant Nexus (N	on-jurisdictional)	1	1					
PEM-2	Palustrine Emergent Wetland	Isolated Water			-	0.781			
PEM-4	Palustrine Emergent Wetland	Isolated Water			-	0.042			
PSS/PEM-2	Palustrine Scrub Shrub/	Isolated Water				0.159			
	Palustrine Emergent Wetland								
	Total of Non-jurisdictional Feat	tures				0.98			

Notes:

1. All values are approximate.

2. Widths are the distances between the ordinary high water mark (OHWM) elevations.

3. Areas are the tributary length within the project area multiplied by the tributary width between the OHWM elevations, converted to acres.

- Measurements are not applicable or are unavailable.

## 4.0 Summary

All aquatic resources on the Botts Road site were documented. For the purpose of this report, all intermittent tributaries were considered RPWs; all ephemeral tributaries were considered Non-RPWs. Currently, all ephemeral tributaries are considered jurisdictional (having a significant nexus). RPW and Non-RPW determinations and significant nexus determinations are subjective. Rapanos determinations may be revised after review and coordination with the USACE.

Based on the available field-verified data and the Rapanos guidance (USACE, 2007), the Botts Road project areas contain approximately 8,541 l.f. (0.26 ac.) of jurisdictional tributaries and 0.39 ac. of jurisdictional wetlands. There are no open water impoundments on the project area. The cumulative total area of jurisdictional WOUS (tributaries and wetlands) is 0.65 ac. **Table 3-1** is a summary table presenting jurisdictional and non-jurisdictional WOUS on the Botts Road project area.

Approximately 0.98 ac. of non-jurisdictional wetlands (isolated wetlands without a significant nexus) are located on the Botts Road project area (**Table 3-1**).

Note:

**1.** All statements presented in this report concerning anticipated jurisdictional Waters of the United States are considered preliminary until the U.S. Army Corps of Engineers provides written concurrence with the report's findings.

2. All acreages are approximate. On the tables, the precision of area measurements for individual features were estimated to  $1/1000^{16}$  of an acre due to the small size of various features. The acreage totals within the report text, however, have been rounded to the nearest  $1/100^{16}$ .

3. All lengths are approximate. The linear distances have been rounded to the nearest foot; the Ordinary High Water Marks, Tributary Top of Bank widths and Tributary heights have been rounded to the nearest  $1/10^{th}$  of a foot.

4. GPS mapping was completed using a sub-meter capable unit.

## 5.0 References

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- U.S. Fish and Wildlife Service. 1988. National List of Plant Species that Occur in Wetlands: (Region 3). National Ecology Research Center. St. Petersburg, Florida. May.
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# Appendix A Figures





FIGURE 1 SITE VICINITY Botts Road & MO Hwy 150



2007-107 Botts Road/2007-107 Botts Road JDR\Supporting Materials\Spatial Data\MXD\Fig1SiteVic.mxd

(Lawrence USGS 250k Quad)

Adaptive Ecosystems, Inc. Project No. 2007-107





Approximate Project Boundary

FIGURE 2 USGS TOPOGRAPHY Botts Road & MO Hwy 150 (Belton, MO USGS 7.5' Quad)



2007-107 Botts Road\2007-107 Botts Road JDR\Supporting Materials\Spatial Data\MXD\Fig2USGS.mxd

Adaptive Ecosystems, Inc. Project No. 2007-107







#### FIGURE 3 JACKSON COUNTY SOIL SURVEY

Botts Road & MO Hwy 150 (2006 NAIP aerial photography)



2007-107 Botts Road/2007-107 Botts Road JDR\Supporting Materials\Spatial Data/MXD\Fig3soils.mxd







FIGURE 4 NATIONAL WETLAND INVENTORY

> Botts Road & MO Hwy 150 (Belton, MO USGS 7.5' Quad)





2007-107 Botts Road\2007-107 Botts Road JDR\Supporting Materials\Spatial Data\MXD\Fig5JurisdictionalWaters\_20070827.mxd

Adaptive Ecosystems, Inc. Project No. 2007-107



2007-107 Botts Road/2007-107 Botts Road JDR\Supporting Materials\Spatial Data/MXD\Fig6Watershed.mxd

Appendix B Site Photographs

# PHOTOLOG

	FEATURE	I-1	<b>Photo #:</b> 1			
Botts Road JDR	DESCRIPTION	Intermittent Tributary	Direction:			
Date: 15 Aug 07	PHOTOGRAPHER	Chris Thomas, Adaptive Ecosystems, Inc.	West			
		<image/>				
Botts Road JDR	FEATURE	I-2	<b>Photo #:</b> 2			
	DESCRIPTION	Intermittent Tributary	Direction:			
Date: 15 Aug 07	PHOTOGRAPHER	Chris Thomas, Adaptive Ecosystems, Inc.	West			







		<image/>	
	FEATURE	PEM-1 In	<b>Photo #:</b> 9
Bous Road JDR	DESCRIPTION	Palustrine Emergent Wetland	Direction:
Date: 16 Aug 07	PHOTOGRAPHER	Chris Thomas, Adaptive Ecosystems, Inc.	South
Botts Road JDR	FEATURE	PEM-2-1 In	<b>Photo #:</b> 10
	DESCRIPTION	Palustrine Emergent Wetland	Direction:
Date: 16 Aug 07	PHOTOGRAPHER	Chris Thomas, Adaptive Ecosystems, Inc.	Southeast

		<image/>	
	FEATURE	PEM-3-1 In	<b>Photo #:</b> 11
Botts Road JDR	DESCRIPTION	Palustrine Emergent Wetland	Direction:
Date:         16 Aug 07         PHOTOGRAPHER         Chris Thomas, Adaptive Ecosystems, Inc.			North
Botts Road JDR	FEATURE	PEM-4-1 In	<b>Photo #:</b> 12
	DESCRIPTION	Palustrine Emergent Wetland	Direction:
Date: 16 Aug 07	PHOTOGRAPHER	Chris Thomas, Adaptive Ecosystems, Inc.	Northeast

	FEATURE	PSS/PEM-1-1 In	<b>Photo #:</b> 13
Botts Road JDR	DESCRIPTION	Palustrine Emergent Wetland	Direction:
Date: 16 Aug 07	Date:         16 Aug 07         PHOTOGRAPHER         Chris Thomas, Adaptive Ecosystems, Inc.		
Botts Road JDR	FEATURE	PSS/PEM-2-1 In	<b>Photo #:</b> 14
· · · · · · · · · · · · · · · · · · ·	DESCRIPTION	Palustrine Emergent Wetland	Direction:
Date: 16 Aug 07	PHOTOGRAPHER	Chris Thomas, Adaptive Ecosystems, Inc.	Northeast

	FEATURE	PSS-1-1 In	<b>Photo #:</b> 15
Botts Road JDR	DESCRIPTION	Palustrine Scrub-shrub Wetland	Direction:
Date: 16 Aug 07	PHOTOGRAPHER	Chris Thomas, Adaptive Ecosystems, Inc.	North

Appendix C Data Sheets

Feature ID: I-1		Unique Site ID: I-1-1			
Project Name and #: Botts Road JDR 2007-107			Daily Photo #: Photo Direction:		Photo Direction:
Date: 8-15-07 State: MO County: Jackson			Delineat	ors: Chris Thomas	

Stream Ch	aracteristics				
Stream Type:	Stream Classification:				
Perennial Intermittent Ephemeral Drainage	TNW Relatively Permanent Water Non-RPW				
Stream Characteristics: Natural Artificial Manipulate	OHWM width: 1.5 ft. OHWM depth: .5 ft.				
Hydrology:	Approximate water velocity (fps): 3 fps				
Top of bank to top of bank width: 10 ft.	Top of Bank height: 3 ft.				
	Stream Bottom Composition: Silt Sand Gravel				
	⊠cobble □bedrock □concrete □muck				
Side Slopes: $[1:1]$ $[2:1]$ $[3:1]$ $[4:1 \text{ or } >$	⊠other: Boulders				
	— — vegetation (% cover type):				
	Tributary Geometry: Relatively Straight Meandering				
Cut-off channels riffles/runs steep side slopes					
Estimated Flow Events per year: 1 2-5 6-10	Surface Flow: Discrete Confined				
⊠11-20 □20 or >	☐Discrete and Confined ☐Overland Sheet Flow				
Stream has:       Bed and Bank         Stream has:       Bed and Bank         OHWM:       OHWM has:         Image: Inter disturbed       Image: Inter disturbed         <					
Water Color/Quality: Clear Discolored Oily film					
Riparian Type: ⊠Forested ⊠Herbaceous □Ag. field	Riparian Buffer Width: 20 ft.				
Buffer (adjacent bank) vegetation: Carex sp., Ambrosia artemisifolia, Ulmus americana, Salix nigra, Daucus carota, Populus deltoides					

#### Adjacent and Abutting Wetland/Notes/Drawing

	Jacobi and / araining	
Adjacent Wetlands (list and draw):		
Abutting Wetlands (list and draw): PSS	S/PEM-1	
		Report Photolog #:

Feature ID: I-2			Unique Site ID: I-2-1		
Project Name and #: Botts Road JDR 2007-107		Daily Photo #: Pl		Photo Direction:	
Date: 8-15-07	State: MO	County: Jackson		Delineat	ors: Chris Thomas

Stream Ch	aracteristics			
Stream Type:	Stream Classification: at least seasonally			
Perennial Intermittent Ephemeral Drainage	TNW Relatively Permanent Water Non-RPW			
Stream Characteristics: Natural Artificial Manipulate	ed OHWM width: 1 ft. OHWM depth: .25 ft.			
Hydrology: □Flowing □Standing ⊠None	Approximate water velocity (fps): N/A			
Top of bank to top of bank width: 6 ft.	Top of Bank height: 2 ft.			
Side Slopes: □1:1 □2:1 ⊠3:1 □4:1 or >	Stream Bottom Composition: Silt Sand gravel Cobble bedrock concrete muck other: vegetation (% cover, type):			
Stream Condition/Stability:       □erosion       □bank collapse         □cut-off channels       □riffles/runs       □ steep side slopes	Tributary Geometry: KRelatively Straight Meandering			
Estimated Flow Events per year: 1 2-5 6-10	Surface Flow: Discrete Confined			
⊠11-20 □20 or >	Discrete and Confined Overland Sheet Flow			
Stream has:       Bed and Bank         OHWM:       OHWM has:         Image: leaf litter disturbed       Image: leaf litter disturbed         Image: leaf litter disturbed       Image: leaf l				
Water Color/Quality: Clear Discolored Oily film N/A				
Riparian Type: Forested Herbaceous Ag. field Riparian Buffer Width: 10 ft.				
Buffer (adjacent bank) vegetation: Ambrosia artemisifolia, Setaria verdii, Sorghum halepense, Daucus carota, Salix nigra				

#### Adjacent and Abutting Wetland/Notes/Drawing

Aujacent and Abatting Wetland/Notes/Drawing	
Adjacent Wetlands (list and draw):	
⊠Abutting Wetlands (list and draw): PSS-1	
	Report Photolog #:

Feature ID: I-3			Unique Site ID: I-3-1		
Project Name and #: Botts Road JDR 2007-107		Daily Photo #: Photo		Photo Direction:	
Date: 8-15-07	State: MO	County: Jackson		Delineat	ors: Chris Thomas

Stream Ch	aracteristics			
Stream Type:	Stream Classification: seasonal			
Perennial Intermittent Ephemeral Drainage	TNW Relatively Permanent Water Non-RPW			
Stream Characteristics: XNatural Artificial Manipulate	OHWM width: 2 ft. OHWM depth: .75 ft.			
Hydrology: □Flowing ⊠Standing □None	Approximate water velocity (fps): 3			
Top of bank to top of bank width: 6 ft.	Top of Bank height: 3 ft.			
Side Slopes: □1:1 □2:1 ⊠3:1 □4:1 or >	Stream Bottom Composition: Silt Sand gravel Cobble bedrock concrete muck other: vegetation (% cover, type):			
Stream Condition/Stability:       □erosion       □bank collapse         □cut-off channels       □riffles/runs       □ steep side slopes	Tributary Geometry:			
Estimated Flow Events per year: 1 2-5 6-10	Surface Flow: Discrete Confined			
⊠11-20 □20 or >	Discrete and Confined Overland Sheet Flow			
Stream has:       Bed and Bank         OHWM:       OHWM has:         Image: leaf litter disturbed       Image: leaf litter disturbed         Image: leaf litter/debris       Image: leaf litter/debris         Image: leaf litter/debris       Image: leaf litter/debris         Image: leaf litter disturbed       Image: leaf litter/debris         Image: leaf litter/debris       Image: leaf litter/debris         Image: leaf litter disturbed       Image: leaf litter/debris         Image: leaf litter/debris       Image: leaf litter/debris         Image: leaf litter disturbed       Image: leaf litter/debris         Image: leaf litter/debris       Im				
Water Color/Quality: Clear Discolored Oily film				
Riparian Type: ⊠Forested □Herbaceous □Ag. field	Riparian Buffer Width: 20 ft.			
Buffer (adjacent bank) vegetation: Ulmus americana, Vites sp., Ambrosia astemisifolia, Juglans nigra, Salix nigra, Populus deltoides, Elymus virginicum, Lonicera maackii, Symphoricarpos orbiculatus,				

## Adjacent and Abutting Wetland/Netec/Drowing

l l l l l l l l l l l l l l l l l l l	Adjacent and Abutting Wetland/Notes/Drawing
Adjacent Wetlands (list and draw): F	PEM-3
☐Abutting Wetlands (list and draw):	
Bed is muddy with spots of standing wa	ater after 2+ weeks of no rain and 90°+ temperatures.
	Report Photolog #:

Feature ID: E-1			Unique Site ID: E-1-1		
Project Name and #: Botts Road JDR 2007-107		Daily Photo #: Photo Direction:		Photo Direction:	
Date: 8-15-07	State: MO	County: Jackson		Delineat	ors: Chris Thomas

Stream Ch	aracteristics			
Stream Type:	Stream Classification:			
Perennial Intermittent Ephemeral Drainage	TNW Relatively Permanent Water Non-RPW			
Stream Characteristics: Natural Artificial Manipulate	ed OHWM width: 2 ft. OHWM depth: .5 ft.			
Hydrology: □Flowing □Standing ⊠None	Approximate water velocity (fps):			
Top of bank to top of bank width: 3 ft.	Top of Bank height: 1.5 ft.			
Side Slopes: □1:1 □2:1 □3:1 ⊠4:1 or >	Stream Bottom Composition: Silt Sand gravel Cobble bedrock concrete muck other: vegetation (% cover, type):			
Stream Condition/Stability:       □erosion       □bank collapse         □cut-off channels       □riffles/runs       □ steep side slopes	Tributary Geometry: Relatively Straight Meandering			
Estimated Flow Events per year: 1 2-5 6-10	Surface Flow: Discrete Confined			
⊠11-20 □20 or >	☐Discrete and Confined ☐Overland Sheet Flow			
Stream has:       Bed and Bank         OHWM:       OHWM has:         Ileaf litter disturbed       Ishelving         Ileaf litter disturbed       Ishelving         Ilitter/debris       Ino terrestrial veg.         Isediment sorting       Iscour         Ichange in plant community       Other:				
Water Color/Quality: Clear Discolored Oily film				
Riparian Type: Forested Herbaceous Ag. field Riparian Buffer Width: 50 ft. ag field				
Buffer (adjacent bank) vegetation: soy beans				

## Adjacent and Abutting Wetland/Notes/Drawing

	Adjacent and Abutting Wetland/Notes/Drawing				
Adjacent Wetlands (list and draw):					
Abutting Wetlands (list and draw):					
	Report Photolog #:				
Feature ID: E-2a			Unique Site ID: E-2a-1		
---	--	--	---------------------------------	-------------------	------------------
Project Name and #: Botts Road JDR 2007-107			Daily Photo #: Photo Direction:		Photo Direction:
Date: 8-15-07 State: MO County: Jackson			Delineat	ors: Chris Thomas	

Stream Ch	aracteristics
Stream Type:	Stream Classification:
Perennial Intermittent Ephemeral Drainage	TNW Relatively Permanent Water Non-RPW
Stream Characteristics: Natural Artificial Manipulate	ed OHWM width: .5 ft. OHWM depth: .25 ft.
Hydrology: □Flowing □Standing ⊠None	Approximate water velocity (fps):
Top of bank to top of bank width: 1.5 ft.	Top of Bank height: .75 ft.
Side Slopes: □1:1 □2:1 □3:1 ⊠4:1 or >	Stream Bottom Composition: Silt Sand gravel Cobble bedrock Concrete muck Other: Vegetation (% cover, type):
Stream Condition/Stability:       □erosion       □bank collapse         ☑cut-off channels       □riffles/runs       □ steep side slopes	Tributary Geometry: Relatively Straight Meandering
Estimated Flow Events per year: 1 2-5 6-10	Surface Flow: Discrete Confined
□11-20 □20 or >	☐Discrete and Confined ☐Overland Sheet Flow
Stream has: Bed and Bank OHWM: OHWM has: Clear, natural line or leaf litter disturbed litter/debris sediment sorting change in plant com	bank shelving veg. matted down or absent sediment deposits water staining no terrestrial veg. wrack line scour multiple flow events munity other:
Water Color/Quality: Clear Discolored Oily film	
Riparian Type: ⊠Forested ⊠Herbaceous □Ag. field	Riparian Buffer Width: Fo – 50 ft. He – 50 ft
Buffer (adjacent bank) vegetation: Forested – Celtis occidenta Elymus virginicum	alis, Fraxinus pennsylvanica, Gleditsia triacanthos, Vites sp,
Herbaceous – Phalaris arundinacea	

# Adjacent and Abutting Wetland/Notes/Drawing

	Aujacent and Abutting Wetland/Notes/Drawing
Adjacent Wetlands (list and draw):	
Abutting Wetlands (list and draw):	
	Report Photolog #:

Feature ID: E-2b			Unique Site ID: E-2b-1		
Project Name and #: Botts Road JDR 2007-107			Daily Photo #: Photo Direction:		Photo Direction:
Date: 8-15-07 State: MO County: Jackson			Delineat	ors: Chris Thomas	

Stream Ch	aracteristics
Stream Type:	Stream Classification:
Perennial Intermittent Ephemeral Drainage	TNW Relatively Permanent Water Non-RPW
Stream Characteristics:  Natural  Artificial  Manipulate	OHWM width: 1 ft. OHWM depth: .5 ft.
Hydrology: □Flowing □Standing ⊠None	Approximate water velocity (fps):
Top of bank to top of bank width: 2 ft.	Top of Bank height: 1 ft.
Side Slopes: □1:1 □2:1 ⊠3:1 □4:1 or >	Stream Bottom Composition: Silt Sand gravel Cobble bedrock concrete muck other: vegetation (% cover, type):
Stream Condition/Stability:       □erosion       □bank collapse         ☑cut-off channels       □riffles/runs       □ steep side slopes	Tributary Geometry: KRelatively Straight Meandering
Estimated Flow Events per year: 1 12-5 86-10	Surface Flow: Discrete Confined
□11-20 □20 or >	Discrete and Confined
Stream has: Bed and Bank OHWM: OHWM has: clear, natural line or leaf litter disturbed litter/debris sediment sorting change in plant com	bank shelving veg. matted down or absent sediment deposits water staining no terrestrial veg. wrack line scour multiple flow events munity other:
Water Color/Quality: Clear Discolored Oily film	
Riparian Type: Forested Herbaceous Ag. field	Riparian Buffer Width: 20 ft.
Buffer (adjacent bank) vegetation: Sorghum halepense, Daucus of	carota, Sericea lespedeza, Ambrosia artemisifolia

### Adjacent and Abutting Wetland/Notes/Drawing

I
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Feature ID: E-3			Unique Site ID: E-3-1		
Project Name and #: Botts Road JDR 2007-107			Daily Photo #: Photo Direction:		Photo Direction:
Date: 8-15-07 State: MO County: Jackson			Delineat	ors: Chris Thomas	

Stream Ch	aracteristics		
Stream Type:	Stream Classification:		
Perennial Intermittent Ephemeral Drainage	TNW Relatively Permanent Water Non-RPW		
Stream Characteristics: Natural Artificial Manipulate	ed OHWM width: 1 ft. OHWM depth: .5 ft.		
Hydrology: □Flowing □Standing ⊠None	Approximate water velocity (fps):		
Top of bank to top of bank width: 3 ft.	Top of Bank height: 2 ft.		
	Stream Bottom Composition: Silt Sand Gravel		
	□cobble □bedrock □concrete □muck		
Side Slopes: □1:1 □2:1 ⊠3:1 □4:1 or >	□other:		
	Vegetation (% cover. type):		
Stroom Condition/Stability: Derasion Dhank colleges			
	Tributary Geometry:  Relatively Straight  Meandering		
☐cut-off channels ☐riffles/runs ☐ steep side slopes			
Estimated Flow Events per year: 1 2-5 6-10	Surface Flow: Discrete Confined		
□11-20 □20 or >	Discrete and Confined Overland Sheet Flow		
Stream has: Bed and Bank OHWM: OHWM has: Clear, natural line or leaf litter disturbed litter/debris sediment sorting change in plant com	a bank ☐shelving     ⊠veg. matted down or absent		
Water Color/Quality: Clear Discolored Oily film			
Riparian Type: ⊠Forested □Herbaceous □Ag. field	Riparian Buffer Width: 15 ft.		
Buffer (adjacent bank) vegetation: Ulmus americana, Vites s deltoides, Elymus virginicum, Lonicera maackii, Symphoricarp	o., Ambrosia astemisifolia, Juglans nigra, Salix nigra, Populus os orbiculatus, Phalaris arundinacea		

## Adjacent and Abutting Wetland/Notes/Drawing

Aujacent and Abutting Wetland/Notes/Drawing
Adjacent Wetlands (list and draw):
MAbutting Wetlands (list and draw): PEM-1
Report Photolog #:

Feature ID: E-4			Unique Site ID: E-4-1		
Project Name and #: Botts Road JDR 2007-107			Daily Photo #: Photo Direction:		Photo Direction:
Date: 8-15-07 State: MO County: Jackson			Delineat	ors: Chris Thomas	

Stream Ch	aracteristics
Stream Type:	Stream Classification:
Perennial Intermittent Ephemeral Drainage	TNW Relatively Permanent Water Non-RPW
Stream Characteristics: Natural Artificial Manipulate	OHWM width: 1.5 ft. OHWM depth: 1 ft.
Hydrology: □Flowing □Standing ⊠None	Approximate water velocity (fps):
Top of bank to top of bank width: 4 ft.	Top of Bank height: 3 ft.
Side Slopes: □1:1 □2:1 ⊠3:1 □4:1 or >	Stream Bottom Composition: Silt Sand Gravel Cobble bedrock Concrete muck other: vegetation (% cover, type):
Stream Condition/Stability:       □erosion       □bank collapse         □cut-off channels       □riffles/runs       □ steep side slopes	Tributary Geometry: Relatively Straight Meandering
Estimated Flow Events per year: 1 2-5 6-10	Surface Flow: Discrete Confined
□11-20 □20 or >	☐Discrete and Confined ☐Overland Sheet Flow
Stream has: Bed and Bank OHWM: OHWM has: clear, natural line or leaf litter disturbed Mitter/debris sediment sorting change in plant cor	bank shelving veg. matted down or absent sediment deposits water staining no terrestrial veg. wrack line scour multiple flow events munity other:
Water Color/Quality: Clear Discolored Oily film	
Riparian Type: ⊠Forested □Herbaceous □Ag. field	Riparian Buffer Width: 20 ft.
Buffer (adjacent bank) vegetation: Ulmus americana, Salix nig deltiodes, Elymus virginicum	gra, Gleditisia triacanthos, Acer saccharinum, Populus

# Adjacent and Abutting Wetland/Netec/Drowing

	Adjacent and Abutting Wetland/Notes/Drawing
Adjacent Wetlands (list and draw):	
Abutting Wetlands (list and draw):	
	Report Photolog #:

Wetland Data Sheets

Project See: Project See: Pr	1												
Application/Owner:	Pro	ject Site:	B	otts Road JDR					Date:	8-16-07			
Investigation:         Christian Construction:         State:         Mode           Denomination:         Denonin and internation:         Denomination:<	Ap	olicant/Ov	vner: Pi	iper-Wind Architects, Inc.					County:	Jackson			
Dr. Normal Circumstances used on the steP       Difference of the steP       Difference of the steP         Bin ball experiments       Difference of the steP       Difference of the steP         Bin ball experiments       Difference of the steP       Difference of the steP         Vector       Difference of the steP       Difference of the steP         Is All experiments       Difference of the steP       Difference of the steP         Is All experiments       Difference of the steP       Difference of the steP         Is All experiments       Difference of the steP       Difference of the steP         Is All experiments       Difference of the steP       Difference of the steP         Is All experiments       Difference of the steP       Difference of the steP         Is All experiments       Difference of the steP       Difference of the steP         Is All experiments       Difference of the steP       Difference of the steP         Is All experiments       Difference of the steP       Difference of the steP         Is All experiments       Difference of the steP       Difference of the steP         Is All experiments       Difference of the steP       Difference of the steP         Is All experiments       Difference of the steP       Difference of the steP         Difference of the steP       Difference of the steP	Inv	estigator:	С	hris Thomas & Kevin Slates	;				State:	MO			
in the sing spiniturity disturbed (kspical Statutor))        Yes <td <td="" <td<="" td=""><td>Do</td><td>Normal Cir</td><td></td><td>exist on the site?</td><td></td><td></td><td></td><td>No</td><td>Community ID:</td><td>DEM 1 1</td><td></td><td></td></td>	<td>Do</td> <td>Normal Cir</td> <td></td> <td>exist on the site?</td> <td></td> <td></td> <td></td> <td>No</td> <td>Community ID:</td> <td>DEM 1 1</td> <td></td> <td></td>	Do	Normal Cir		exist on the site?				No	Community ID:	DEM 1 1		
is Area a Protection Problem Areas? (if medded, applian on rowers)       i       Yee       i       No       Port ID:       Image: Control Problem Areas?         VECETATION         VECETATION <td colspan<="" td=""><td>le th</td><td></td><td>ificantly dist</td><td>urbed (Atypical Situation)?</td><td>-</td><td></td><td></td><td>No</td><td>Transact ID:</td><td></td><td></td><td></td></td>	<td>le th</td> <td></td> <td>ificantly dist</td> <td>urbed (Atypical Situation)?</td> <td>-</td> <td></td> <td></td> <td>No</td> <td>Transact ID:</td> <td></td> <td></td> <td></td>	le th		ificantly dist	urbed (Atypical Situation)?	-			No	Transact ID:			
	ls A	rea a Pote	ntial Problem	Area? (if needed explain on r	everse)			No	Plot ID:	DP# 1 - In			
VEGETATION         Denotes the scarefures       is an indicator         is provide the scarefure       is provide the scarefure         is provide the scarefure       is provid	137				000130)				TIOUD.				
Dommer Plus Species       Braum       Industry       Devines Plant Species       Braum       Industry         Implementations       H       H       H ACM       0       H       H       H ACM       H	VE	GETATIC	N										
Image: services         Image: services         Image: services         Image: services           1         Open a services         1	Dorr	inant Plant 9	Snecies		Stratum	Indicator	Domina	nt Plant Sner	ries		Stratum	Indicator	
a       b       FAC       10         construction       b       FAC       10         construction       b       FAC       10         b       FAC       10       11       11         construction       b       FAC       10       11         construction       b       FAC       10       11       11         construction       b       FAC       10       11 <t< td=""><td>1</td><td>Phalaris ar</td><td>undinacea</td><td></td><td>H</td><td>FACW+</td><td>8</td><td></td><td></td><td></td><td>otratam</td><td>indicator</td></t<>	1	Phalaris ar	undinacea		H	FACW+	8				otratam	indicator	
a)       TAC       10       Image: Control of Data (decode in Remarks)         Percent of Dominant Species that are OBL_FACW of FAC (excluding FAC-):       67%         Rumarks:       Image: Control of Data (decode in Remarks)       Image: Control of Data (decode in Remarks)         Image: Control of Data (decode in Remarks)       Image: Control of Data (decode in Remarks)       Image: Control of Data (decode in Remarks)         Image: Control of Data (decode in Remarks)       Image: Control of Data (decode in Remarks)       Image: Control of Data (decode in Remarks)       Image: Control of Data (decode in Remarks)         Image: Control of Data (decode in Remarks)       Image: Control of Data (decode in Remarks)       Image: Control of Data (decode in Remarks)       Image: Control of Data (decode in Remarks)         Image: Control of Data (decode in Remarks)       Image: Control of Data (decode in Remarks)       Image: Control of Data (decode in Remarks)       Image: Control of Data (decode in Remarks)         Image: Control of Data (decode in Remarks)       Image: Control of Data (decode in Remarks)       Image: Control of Data (decode in Remarks)       Image: Control of Data (decode in Remarks)         Open to Free Verter in Remarks       Image: Control of Remarks       Image: Control of Remarks)       Image: Control of Remarks)       Image: Control of Remarks)         Open to Free Verter in Remarks       Image: Control of Remarks)       Image: Control of Remarks) <thimage: control="" of="" remarks)<="" th=""> <thi< td=""><td>2</td><td>Polygonum</td><td>pensylvanicun</td><td>n</td><td>Н</td><td>FACW</td><td>9</td><td></td><td></td><td></td><td></td><td></td></thi<></thimage:>	2	Polygonum	pensylvanicun	n	Н	FACW	9						
************************************	3	Cornus dru	mmondii		S	FAC	10						
a       14       14       14         Purcent of Dominant Species that are OBL_FACW of FAC (excluding FAC):       67%         Remarks:       FMCDOLOSY         Image: Construction of Data (decades in Remarks)       Image: Construction of Data (decades in Remarks)         Image: Construction of Data (decades in Remarks)       Image: Construction of Data (decades in Remarks)         Image: Construction of Data (decades in Remarks)       Image: Construction of Data (decades in Construction of	4						11						
r       14	6						13						
Percent 10 Dominant Species that are OBL_FACW or FAC (excluding FAC-):       67%         Remarks:       PhyRotLocsY         Important Species that are OBL_FACW or FAC (excluding FAC-):       67%         Prover the State of Take Cauge       Important Species that are OBL_FACW or FAC (excluding FAC-):       67%         Important Species that are OBL_FACW or FAC (excluding FAC-):       67%       Secondary Indicators:       Important Species that are OBL_FACW or FAC (excluding FAC-):         Important Species that are OBL_FACW or FAC (excluding FAC-):       Important Species that are OBL_FACW or FAC (excluding FAC-):       Secondary Indicators:       Important Species Transmitty Caby Insert       Important S	7						14						
Remarks:         HVDROLOGY         Image: Data (describe in Remarks)         Remarks         Image: Data (describe in Remarks)         Remarks         Image: Data (describe in Remarks)         Image: Data (describe in Remarks)         Remarks         Image: Data (describe in Remarks)         Image: Data (describe in Remarks)         Remarks         Image: Data (describe in Remarks)         Image: Data (describe in Remarks)         Remarks:         Image: Data (describe in Remarks)         Remarks:         Image: Data (describe in Remarks)         Remarks: <td< td=""><td>Per</td><td>cent of Dor</td><td>minant Speci</td><td>es that are OBL, FACW or FAC</td><td>(excluding l</td><td>FAC-): 67</td><td>7%</td><td></td><td></td><td></td><td></td><td></td></td<>	Per	cent of Dor	minant Speci	es that are OBL, FACW or FAC	(excluding l	FAC-): 67	7%						
HYDROLOGY	Rer	narks:											
HVRCLOGY         Herean Lake, or Table Gauge Aerial Photographs         Benerotiation: Brain Depart of Marine anvillable Field Clearwaterize: Depart of Suface Water: In Marine I, More Depart of Suface I Derown In Depart Of Suface I Derown I Depart Of Suface I Deformed I Deform I Depart Of Suface I Deform I Depart Of Suface I Deform I Depart Of Suface I Deform I Defor Deform I Deform I Deform I Defore Deform I													
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Image Determines       Aske, or lobe Gauge         Image Determines       Image Determines         Image Determines <td></td> <td>Recorde</td> <td>ed Data (deso</td> <td>cribe in Remarks)</td> <td>Wetla</td> <td>nd Hydrolog</td> <td>y Indicato</td> <td>ors:</td> <td></td> <td>Ossessed - 1 /</td> <td></td> <td></td>		Recorde	ed Data (deso	cribe in Remarks)	Wetla	nd Hydrolog	y Indicato	ors:		Ossessed - 1 /			
Perform       Product Production       Note:		_ <u>_</u>	Stream, La	ke, or Tide Gauge	Pi	rimary Indica	ators:		i L	Secondary Indicators (2	or more requ	lired):	
In the monetal data available       Image: Constraint of the Marks "provide data available         Pitel Observations:       Image: Constraint of the Marks "provide data available         Depth to Face Water in Pit:       None         Depth to Saturated Soil:       Nina         Depth to Face Water in Pit:       None         Marks       Image: Constraint of the Marks "provide data available         Map Unit Name (Series and Phase):       Greenton silly day loam, 5 to 9 percent         Taxonomy (Subgroup):       Price Description         Price Description:       Price Description:         Price Description:       Mater Kasel         Price Description:       Mater Color         Meg Unit Name (Series and Phase):       Greenton silly day loam, 5 to 9 percent       Drainage Class: somewhat poorly         Price Description:       Mater Kasel       Vialer Abundance'         Price Description:       Mater Kasel       State Contrast         Texture, etc.       10 VR 4/2       10 VR 4/8       5%         Intel Colors       Molte Abundance'       State Contrast         Texture, State and those in the State and those in t			Other	ographs			rated in L	Inner 12 ind	ches	Water-Stained		Jpper 12	
Field Observations:       None       (In)       Diff Lines:			rded data av	ailable		U Satur	r Marks				Leaves vev Data		
Depth of Surface Water       Nene       (n)       Image Patterns in Wetlands       Image Patterns in Wetlands         Depth to Saturated Soli:       NA       (n)       Image Patterns in Wetlands       Image Patterns in Wetlands         Remarks       Image Patterns in Wetlands       Image Patterns in Wetlands       Image Patterns in Wetlands         Soli       Mater color is [clear _ brown _ olity         Soli National Mosci Patterns       Image Patterns in Wetlands       Image Patterns in Wetlands         Profile Description       Image Patterns in Wetlands       Image Patterns in Wetlands       Image Patterns in Wetlands         Profile Description       Image Patterns in Wetlands       Image Patterns in Wetlands       Image Patterns in Wetlands         Profile Description       Image Patterns in Wetlands       Image Patterns in Wetlands       Image Patterns in Wetlands         Image Patterns in Wetland Motels       Image Patterns in Wetlands       Image Patterns in Wetlands       Image Patterns in Wetlands         Profile Description       Image Patterns in Wetlands       Image Patterns in Wetlands       Image Patterns in Wetlands       Image Patterns in Wetlands         Profile Description       Image Patterns in Wetlands       Image Patterns in Wetlands       Image Patterns in Wetlands       Image Patterns in Wetlands         Hydric Soli Indicators:       Image Patterns in Wetlands	Fiel	d Observat	tions:			Drift	Lines		-	FAC-Neutral T	est		
Depth to Free Water in Nt:       None       (n.)       Drainage Patterns in Wetlands         Depth to Saturated Sol:       NA       (in.)       Image Patterns in Wetlands         Remarks       Water color is clear       brown cloity         SolLS       SolLs       Drainage Class: somewhat poorly       Circle         Profile Description:       Field Observations Confirm Mapped Type?       Yes       No         Profile Description:       Matter Colors       Mottle Abundance/       Texture, Concretions, Structure, etc.         10       2.5 YR 4/2       10 YR 4/6       5%       SCL       10.1         10.14       10 YR 3/2       10 YR 4/6       5%       SCL       10.1         Hydric Soll Indicators:       High Conditions       High Content in Surface Layer in Sandy Soils       Surface Odor       No       Is this Sampling Point Within a Wetland?       Yes       No         Remarks:       Yes       No       Is this Sampling Point Within a Wetland?       Yes       No         Wetland Hydric Soils List       No       Is this Sampling Point Within a Wetland?       Yes       No         Remarks:       Yes       No	[	Depth of Su	urface Water:	None (In.)		Sedir	ment Dep	osits		Other (explain	in remarks)		
Depth to Saturated Soli:       NA       (n.)         Remarks	[	Depth to Fr	ee Water in I	Pit: None (In.)		Drair	nage Patt	erns in Wet	tlands				
Remarks       Water color is _clear _ brown _oliy         Suls       Map Unit Name (Series and Phase):	0	Depth to Sa	aturated Soil:	<u>N/A</u> (In.)									
Autor color is        image	Rer	narks											
Subset         Map Unit Name (Series and Phase):       Greenton silty clay baam, 5 to 9 percent       Drainage Class: somewhat poorly       Circle         Profile Description:       Beatry Confirm Mapped Type?       Yes       No         Profile Description:       Matrix Color       Matrix Color       Motile Colors         Depth (inches)       Horizon       Matrix Color       Motile Colors       Size/contrast       Texture, Concretions, Structure, etc.         10       1.2.5 YR 4/2       Intervention       Size/contrast       Texture, Concretions, Structure, etc.         10-14       10 YR 3/2       10 YR 4/6       5%       SCL         Intervention       Size/contrast       Texture, Concretions, Structure, etc.       Size/contrast         Hydric Soil Indicators:       Beatry Conditions       Elseted notational Hydric Soils List       Size/contrast         Hydric Soil Indicators:       Beatry Conditions       Beatry Concretions       Size/contrast       Size/contrast       Size/contrast         Aquic Moisture Regime       Organic Streaking in Sandy Soils       Size/contrast       Size/contrast       Size/contrast       Size/contrast       No       Is this Sampling Point Within a Wetland?       Yes       No         Hydric Soils Present?       Yes       No       Is this Sampling Point Within a Wetland?	1101	namo											
Water color is													
Soll S         Map Unit Name (Series and Phase):										Water color in Del	oor Dhrow		
Map Unit Name (Series and Phase):       Greenton silty clay loam, 5 to 9 percent       Drainage Class: somewhat poorly       Circle         Frolite Description:       Field Observations Confirm Mapped Type?       Yes       No         Prolite Description:       Matrix Color       Mottle Abundance/       Texture, Concretions, Structure, etc.       0         10       2.5 YR 4/2       10 YR 4/6       5%       SCL       10         10-14       10 YR 3/2       10 YR 4/6       5%       SCL         Hydric Soil Indicators:										Water color is Cl	ear ⊡brow	n ⊟oily	
	so	ILS								Water color is C	ear ⊡brow	n <u>∏</u> oily	
Profile Description:       Including Contrast       Texture, Concretions, Structure, etc.         Profile Description:       Matrix Color       Matrix Color         Depth (inchee)       Horizon       (Munsell Molesi)       Size/Contrast       Texture, Concretions, Structure, etc.         10       2.5 YR 4/2       10 YR 4/6       5%       SCL         10-14       10 YR 3/2       10 YR 4/6       5%       SCL         Histosol       Experime       Size/Contrast       Texture, Concretions, Structure, etc.         Hydric Soil Indicators:       Experime       Experime       Size/Contrast         Histosol       Experime       Gleyed or Low-Chroma Colors       Experime         Suffidic Odor       Experime       Organic Streaking in Sandy Soils       Experime         Julifidic Odor       Organic Streaking in Sandy Soils       Other (explain in remarks)         Remarks:       Organic Streaking in Sandy Soils       Other (explain in remarks)         Wetland Hydrology Present?       Yes       No       Is this Sampling Point Within a Wetland?       Yes       No         Remarks/Explain significant nexus (pollution filtration, flood water retention, feeding/nesting/spawning ground for TNW species, other biological, physical or chemical relationships:       Metand (Sabuts is Cological connection (explain):         Becologicis shown	SO	ILS	o (Cariaa an			0 percent			Desinges Classe	Water color is Ch	ear ⊡brow	n _oily	
Profile Description:       Image: Contrast of Monte Abundance/ (Munsell Moist)       Monte Colors         Depth (incres)       Horizon       (Munsell Moist)       Monte Colors       Texture, Concretions, Structure, etc.         10       2.5 YR 4/2       Increase       Increase       Increase       Increase         10-14       10 YR 3/2       10 YR 4/6       5%       SCL         Increase       Increase       Increase       Increase       Increase         Hydric Soil Indicators:       Increase       Increase       Increase       Increase         Histic Epiedon       Increase       Increase       Increase       Increase       Increase         Sufficio Odor       Increase	SO Map	ILS D Unit Nam	ie (Series an	d Phase): Greenton silty cla	y loam, 5 to	9 percent			Drainage Class:	Water color is Color	ear brow	n ⊡oily Circle	
Depth (inches)       Horizon       Matrix Color (Munsell Moist)       Mottle Colors (Winsell Moist)       Mottle Abundance/ Size/Contrast       Texture, Concretions, Structure, etc.         10       2.5 YR 4/2       0       SCL       0         10-14       10 YR 3/2       10 YR 4/6       5%       SCL         10-14       10 YR 3/2       10 YR 4/6       5%       SCL         10-14       10 YR 3/2       10 YR 4/6       5%       SCL         10-14       10 YR 3/2       10 YR 4/6       5%       SCL         10-14       10 YR 3/2       10 YR 4/6       5%       SCL         10-14       10 YR 3/2       10 YR 4/6       5%       SCL         10-14       10 YR 4/6       5%       SCL       SCL         10       Iside on coal Hydric Solis List       Iside on National Hydric Solis List       Iside on Local Hydric Solis List         10-14       Stificic Odor       Organic Streaking in Sandy Solis       Other (explain in remarks)         Remarks:       Vestore Present?       Yes       No       No         Wetland Hydrology Present?       Yes       No       No       Yes       No         Remarks/Explain significant nexus (pollution filtration, flood water retention, feeding/nesting/spawning ground for TNW species, o	SO Mar Tax	ILS o Unit Nam onomy (Su	ie (Series an Ibgroup):	d Phase): Greenton silty cla	y loam, 5 to	9 percent			Drainage Class: Field Observat	Water color is Cl	ear ⊡brow	n ⊡oily <i>Circle</i> <u>No</u>	
Director       2.5 YR 4/2       10       10       10 YR 3/2       10 YR 4/6       5%       SCL         10-14       10 YR 3/2       10 YR 4/6       5%       SCL       10         Hittosol       Indicators:       Image: participation of the start of the	SO Mar Tax Prof	ILS o Unit Nam onomy (Su ile Descriptic	e (Series an Ibgroup):	d Phase): Greenton silty cla	y loam, 5 to	9 percent			Drainage Class: Field Observat	Water color is Cl	ear ⊡brow - ype? Yes	n ⊡oily Circle : <u>No</u>	
10-14       10 YR 3/2       10 YR 4/6       5%       SCL         Histo       Sulfidocators:	SO Mar Tax Prof	ILS o Unit Nam onomy (Su ile Descriptio	e (Series and Ibgroup): m:	d Phase): Greenton silty cla	y loam, 5 to	9 percent		Motti	Drainage Class: Field Observat e Abundance/	Water color is Cl	ear ⊡brow	n ⊡oily Circle No	
Hydric Soil Indicators:	SO Mar Tax Prof Dep	ILS o Unit Nam onomy (Su ile Descriptic th (inches)	ie (Series and Ibgroup): on: Horizon	d Phase): <u>Greenton silty cla</u> Matrix Color (Munsell Moist)	y loam, 5 to	9 percent Mottle Colors Munsell Moist)		Mottl Si:	Drainage Class: Field Observat e Abundance/ ze/Contrast	Water color is Cl somewhat poorly ions Confirm Mapped T Texture, Concret	ear ⊡brow <sup>-</sup> ype? Yes ions, Structure,	n □oily Circle S No etc.	
Hydric Soil Indicators:	SO Mar Tax Prof Dep 10	ILS o Unit Nam onomy (Su ile Descriptic th (inches) 14	le (Series and Ibgroup): on: Horizon	d Phase): <u>Greenton silty cla</u> Matrix Color (Munsell Moist) 2.5 YR 4/2 10 YR 3/2	y loam, 5 to	9 percent Mottle Colors Munsell Moist) 6		Mottl Si: 5%	Drainage Class: Field Observat e Abundance/ ze/Contrast	Water color is Cl somewhat poorly ions Confirm Mapped T Texture, Concret	ear Dbrow	n □oily Circle 5 <u>No</u> etc.	
Hydric Soil Indicators:	SO Mar Tax Prof Dep 10	ILS o Unit Nam onomy (Su ile Descriptic th (inches) 14	ie (Series an Ibgroup): on: Horizon	d Phase): Greenton silty cla Matrix Color (Munsell Moist) 2.5 YR 4/2 10 YR 3/2	y loam, 5 to	9 percent Mottle Colors Munsell Moist) 6		Mottl Siz 5%	Drainage Class: Field Observat e Abundance/ ze/Contrast	Water color is Cl somewhat poorly ions Confirm Mapped T Texture, Concret	ear ⊡brow	Circle S <u>No</u> etc.	
Hydric Soil Indicators:	SO Mar Tax Prof Dep 10	ILS o Unit Nam onomy (Su ile Descriptic th (inches)	ie (Series an Ibgroup): on: Horizon	d Phase): Greenton silty cla Matrix Color (Munsell Moist) 2.5 YR 4/2 10 YR 3/2	y loam, 5 to (N 10 YR 4/	9 percent Mottle Colors Munsell Moist) 6		Mottl Siz 5%	Drainage Class: Field Observat e Abundance/ ze/Contrast	Water color is Cl somewhat poorly ions Confirm Mapped T Texture, Concret	ear ⊡brow	Circle <u>No</u> etc.	
Histosol       Image: Reducing Conditions       High Organic Content in Surface Layer in Sandy Soils         Histo Epipedon       Image: Sulfidic Odor       Image: Sulfidic Odor       Image: Sulfidic Odor         Aquic Moisture Regime       Organic Streaking in Sandy Soils       Image: Sulfidic Odor       Image: Sulfidic Odor         Aquic Moisture Regime       Organic Streaking in Sandy Soils       Image: Sulfidic Odor       Image: Sulfidic Odor         Remarks:       Organic Streaking in Sandy Soils       Other (explain in remarks)         WETLAND DETERMINATION         Hydrophytic Vegetation Present?       Image: Sulfidic Odor       Image: Sulfidic Odor         Wetland Hydrology Present?       Image: Sulfidic Odor       No       Is this Sampling Point Within a Wetland?       Yes       No         Remarks/Explain significant nexus (pollution filtration, flood water retention, feeding/nesting/spawning ground for TNW species, other biological, physical or chemical relationships:         Wetland (Image: Sulfacent to) tributary:E-3         Adjacency is shown by	SO Map Tax Prof Dep 10 10-	ILS o Unit Nam onomy (Su ile Descriptic th (inches)	ie (Series an Ibgroup): on: Horizon	d Phase): Greenton silty cla Matrix Color (Munsell Moist) 2.5 YR 4/2 10 YR 3/2	y loam, 5 to (N 10 YR 4/	9 percent Mottle Colors Munsell Moist) 6		Mottl Siz 5%	Drainage Class: Field Observat e Abundance/ ze/Contrast	Water color is Cl somewhat poorly ions Confirm Mapped T Texture, Concret	ear ⊡brow	Circle <u>No</u> etc.	
Inside Epipedon Inside Epipedon Sufficio Odor Aquic Moisture Regime Organic Streaking in Sandy Soils Isted on National Hydric Soils List Listed on National Hydric Soils List Used on Local Hydric Soils List Other (explain in remarks) WETLAND DETERMINATION Hydrophytic Vegetation Present? Wetland Hydrology Present? Yes No Is this Sampling Point Within a Wetland? Yes No No Remarks/Explain significant nexus (pollution filtration, flood water retention, feeding/nesting/spawning ground for TNW species, other biological, physical or chemical relationships: Wetland (Sabuts is adjacent to) tributary:E-3 Adjacency is shown by discrete hydrologic connection (explain): Beparated by berm/Sarrier (explain):	SO Mar Tax Prof Dep 10 10- 10- Hyd	ILS o Unit Nam onomy (Su ile Descriptic th (inches) 14 Iric Soil Ind	e (Series an Ibgroup): n: Horizon Licators:	d Phase): Greenton silty cla Matrix Color (Munsell Moist) 2.5 YR 4/2 10 YR 3/2	y loam, 5 to	9 percent Mottle Colors Munsell Moist) 6		Mottl Si: 5%	Drainage Class: Field Observat e Abundance/ ze/Contrast	Water color is Cl somewhat poorly ions Confirm Mapped T Texture, Concret SCL	ear ⊡brow	Circle No etc.	
Suitate Out Count regime   Granic Streaking in Sandy Soils     Aquic Moisture Regime     Organic Streaking in Sandy Soils     Other (explain in remarks)     WETLAND DETERMINATION     Hydrophytic Vegetation Present?   Wetland Hydrology Present?   Hydric Soils Present?     Yes   No     Is this Sampling Point Within a Wetland?   Yes No   No     Remarks/Explain significant nexus (pollution filtration, flood water retention, feeding/nesting/spawning ground for TNW species, other biological, physical or chemical relationships:   Wetland (Sabuts is adjacent to) tributary:E-3   Adjacency is shown by discrete hydrologic connection (explain):   Beoparated by berm/Datapain):	SO Mar Tax Prof 10 10- 10- Hyc	ILS o Unit Nam onomy (Su ile Descriptic th (inches) 14 Iric Soil Ind	ie (Series an ubgroup): on: Horizon Licators:	d Phase): Greenton silty cla Matrix Color (Munsell Moist) 2.5 YR 4/2 10 YR 3/2	y loam, 5 to	9 percent Mottle Colors Munsell Moist) 6		Mottl Siz	Drainage Class: Field Observat e Abundance/ ze/Contrast	Water color is Cl somewhat poorly ions Confirm Mapped T Texture, Concret SCL	ear ⊡brow	Circle No etc.	
Wetland (Mabuts is adjacent to) tributary:E-3         Adjacency is shown by discrete hydrologic connection (explain):	SO Ma <sub>I</sub> Tax Prof 10 10- 10- 10- Hyc	ILS o Unit Nam onomy (Su ile Descriptic th (inches) 14 Iric Soil Ind Histosol Histic Eg Sufficie	ie (Series ani Ibgroup): on: Horizon Horizon licators: bipedon	d Phase): Greenton silty cla Matrix Color (Munsell Moist) 2.5 YR 4/2 10 YR 3/2 R R R C C	y loam, 5 to	9 percent Mottle Colors Munsell Moist) 6 nditions w-Chroma C	Colors	Mottl Siz	Drainage Class: Field Observat e Abundance/ ze/Contrast High Organic Con Listed on Nationa	Water color is Cl somewhat poorly ions Confirm Mapped T Texture, Concret SCL	vype? Yes	n ⊡oily Circle : <u>No</u> etc.	
Remarks:         WETLAND DETERMINATION         Hydrophytic Vegetation Present?       Image: Comparison of the system of	SO Maa Tax Prof Dep 10 10	ILS D Unit Nam onomy (Su ile Descriptic th (inches) 14 Tric Soil Ind Histosol Histic Ep Sulfidic Q Aquic M	e (Series an ubgroup): on: Horizon licators: bipedon Odor oisture Renir	d Phase): Greenton silty cla Matrix Color (Munsell Moist) 2.5 YR 4/2 10 YR 3/2 R R C C C C C C C	y loam, 5 to	9 percent Mottle Colors Munsell Moist) 6 nditions w-Chroma C aking in San	Colors	Mottl Siz	Drainage Class: Field Observat e Abundance/ ze/Contrast      High Organic Con Listed on Nationa Listed on Local H Other (explain in 0	Water color is Cl somewhat poorly ions Confirm Mapped T Texture, Concret SCL SCL	zar □brow	n ⊡oily Circle : <u>No</u> etc.	
WETLAND DETERMINATION         Hydrophytic Vegetation Present?       Image: Stress of the s	SO Maµ Tax Prof Dep 10 10- 10- 10- Hycc	ILS D Unit Nam onomy (Su ile Descriptic th (inches) 14 Tric Soil Ind Histosol Histic Ep Sulfidic ( Aquic M	ie (Series an ubgroup): on: Horizon licators: oipedon Odor oisture Regir	d Phase): Greenton silty cla Matrix Color (Munsell Moist) 2.5 YR 4/2 10 YR 3/2 R R C C C C C	y loam, 5 to	9 percent Mottle Colors Munsell Moist) 6 nditions w-Chroma C aking in San	Colors	Mottl Si: 5%	Drainage Class: Field Observat e Abundance/ ze/Contrast High Organic Con Listed on Nationa Listed on Local H Other (explain in	Water color is □Cl somewhat poorly ions Confirm Mapped <sup>¬</sup> Texture, Concret SCL SCL SCL I Hydric Soils List ydric Soils List ydric Soils List remarks)	zar □brow	n ⊡oily Circle : <u>No</u> etc.	
WETLAND DETERMINATION         Hydrophytic Vegetation Present?       Image: Constraint of the system of t	SO Maµ Tax Prof Dep 10 10- 10- 10- Hycc B B B Rer	ILS D Unit Nam onomy (Su ile Descriptic th (inches) 14 Tric Soil Ind Histosol Histosol Histic Ep Sulfidic ( Aquic M marks:	e (Series an ubgroup): on: Horizon licators: oipedon Odor oisture Regir	d Phase): Greenton silty cla Matrix Color (Munsell Moist) 2.5 YR 4/2 10 YR 3/2 R R C C C C C	y loam, 5 to	9 percent Mottle Colors Munsell Moist) 6 nditions w-Chroma C aking in San	Colors	Mottl Si: 5%	Drainage Class: Field Observat e Abundance/ ze/Contrast High Organic Con Listed on Nationa Listed on Local H Other (explain in r	Water color is □Cl somewhat poorly ions Confirm Mapped <sup>¬</sup> Texture, Concret SCL SCL SCL tent in Surface Layer ir I Hydric Soils List ydric Soils List remarks)	zar □brow	n ⊡oily Circle Mo etc.	
WETLAND DETERMINATION         Hydrophytic Vegetation Present?       Image: Yes image: Ye	SO Maµ Tax Prof 10 10- 10- 10- Hycc B B B Rer	ILS D Unit Nam onomy (Su ile Descriptic th (inches) 14 Tric Soil Ind Histosol Histosol Histic Ep Sulfidic ( Aquic M marks:	e (Series an ubgroup): on: Horizon licators: oipedon Odor oisture Regir	d Phase): Greenton silty cla Matrix Color (Munsell Moist) 2.5 YR 4/2 10 YR 3/2 R R C C C C C	y loam, 5 to	9 percent Mottle Colors Munsell Moist) 6 nditions w-Chroma C aking in San	Colors	Mottl Si: 5%	Drainage Class: Field Observat e Abundance/ ze/Contrast High Organic Con Listed on Nationa Listed on Local H Other (explain in t	Water color is □Cl somewhat poorly ions Confirm Mapped <sup>¬</sup> Texture, Concret SCL SCL SCL I Hydric Soils List ydric Soils List ydric Soils List remarks)	zar □brow	n ⊡oily Circle Mo etc.	
Hydrophytic Vegetation Present?       Image: Yes	SO Mar Tax Prof 10 10- 10- 10- Hycc B B Rer	ILS D Unit Nam onomy (Su ile Descriptic th (inches) 14 Tric Soil Ind Histosol Histosol Histic Eg Sulfidic ( Aquic M marks:	e (Series an ubgroup): on: Horizon licators: bipedon Odor oisture Regir	d Phase): Greenton silty cla Matrix Color (Munsell Moist) 2.5 YR 4/2 10 YR 3/2 R R C C C C	y loam, 5 to	9 percent Mottle Colors Munsell Moist) 6 nditions w-Chroma C aking in San	Colors	Mottl Siz 5%	Drainage Class: Field Observat	Water color is Cl somewhat poorly ions Confirm Mapped T Texture, Concret SCL SCL SCL tent in Surface Layer ir I Hydric Soils List ydric Soils List remarks)	zar ⊡brow	n ⊡oily Circle : <u>No</u> etc.	
Hydrophytic Vegetation Present?       Image: Yes	SO Maµ Tax Prof 10 10- 10- 10- Hycc B B B Rer	ILS D Unit Nam onomy (Su ile Descriptic th (inches) 14 Iric Soil Ind Histosol Histic Eg Sulfidic ( Aquic M marks:	e (Series an ubgroup): on: Horizon licators: oipedon Odor oisture Regir	d Phase): Greenton silty cla Matrix Color (Munsell Moist) 2.5 YR 4/2 10 YR 3/2 R R C C C C C ATION	y loam, 5 to	9 percent Mottle Colors Munsell Moist) 6 nditions w-Chroma C aking in San	Colors dy Soils	Mottl Si: 5%	Drainage Class: Field Observat	Water color is Ch somewhat poorly tions Confirm Mapped T Texture, Concret SCL SCL SCL SCL SCL SCL SCL SCL SCL SCL	zar □brow	n ⊡oily Circle : <u>No</u> etc.	
Wetland Hydrology Present?       Yes       No         Hydric Soils Present?       Yes       No         Remarks/Explain significant nexus (pollution filtration, flood water retention, feeding/nesting/spawning ground for TNW species, other biological, physical or chemical relationships:         Wetland (⊠abuts is □adjacent to) tributary:E-3         Adjacency is shown by □discrete hydrologic connection (explain):         □ecological connection (explain):         □ecological connection (explain):	SO Maµ Tax Prof Dep Dep 10 10-1 10-1 10-1 10 10-1 10 10 10 10 10 10 10 10 10 10 10 10 10	ILS D Unit Nam onomy (Su ile Descriptic th (inches) 14 Iric Soil Ind Histosol Histic Eg Sulfidic ( Aquic M marks: ETLAND I	e (Series and Ibgroup): Dn: Horizon licators: Dipedon Odor oisture Regir	d Phase): Greenton silty cla Matrix Color (Munsell Moist) 2.5 YR 4/2 10 YR 3/2 ne R G C C ATION	y loam, 5 to	9 percent Mottle Colors Munsell Moist) 6 nditions w-Chroma C aking in San	Colors		Drainage Class: Field Observat	Water color is □Cl somewhat poorly tions Confirm Mapped T Texture, Concret SCL SCL SCL SCL SCL SCL SCL SCL SCL SCL	zar □brow	n ⊡oily Circle = <u>No</u> etc.	
Hydric Soils Present?       Yes       No         Remarks/Explain significant nexus (pollution filtration, flood water retention, feeding/nesting/spawning ground for TNW species, other biological, physical or chemical relationships:         Wetland (⊠abuts is □adjacent to) tributary:E-3         Adjacency is shown by □discrete hydrologic connection (explain):         □ecological connection (explain):         □separated by berm/barrier (explain):	SO Maµ Tax Prof 10 10- 10- 10- Rer Rer WE	ILS D Unit Nam onomy (Su ile Descriptic th (inches) 14 tric Soil Ind Histosol Histic Ep Sulfidic ( Aquic M marks: TLAND I drophytic Vo	e (Series and Ibgroup): In: Horizon Iicators: Dipedon Odor oisture Regir	d Phase): Greenton silty cla Matrix Color (Munsell Moist) 2.5 YR 4/2 10 YR 3/2 ne R C C C C C C C C C C C C C	y loam, 5 to	9 percent Wottle Colors Munsell Moist) 6 nditions w-Chroma C aking in San No Is th	Colors dy Soils his Samp	5%	Drainage Class: Field Observat	Water color is Ch somewhat poorly tions Confirm Mapped T Texture, Concret SCL SCL SCL tent in Surface Layer in I Hydric Soils List ydric Soils List remarks)	ear □brow	n ⊡oily Circle etc.	
Remarks/Explain significant nexus (pollution filtration, flood water retention, feeding/nesting/spawning ground for TNW species, other biological, physical or chemical relationships: Wetland (⊠abuts is □adjacent to) tributary:E-3 Adjacency is shown by □discrete hydrologic connection (explain): □ecological connection (explain): □separated by berm/barrier (explain):	SO Maµ Tax Prof 10 10- 10- 10- 10- 10- 10- 10- 10- 10-	ILS D Unit Nam onomy (Su ile Descriptic th (inches) I4 Iric Soil Ind Histosol Histic Ep Sulfidic ( Aquic M marks: ETLAND I drophytic Ve tland Hydro	e (Series and ubgroup): n: Horizon licators: bipedon Odor oisture Regir	d Phase): Greenton silty cla Matrix Color (Munsell Moist) 2.5 YR 4/2 10 YR 3/2  ne R R R R R R R R R R R R R R R R R R	y loam, 5 to	9 percent Mottle Colors Munsell Moist) 6 nditions w-Chroma C aking in San No Is th No Is th	Colors dy Soils	Mottl Siz 5%	Drainage Class: Field Observat	Water color is Ch somewhat poorly tions Confirm Mapped T Texture, Concret SCL SCL SCL tent in Surface Layer in I Hydric Soils List ydric Soils List remarks)	ear □brow	n ⊡oily Circle etc.	
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Wetland (⊠abuts is □adjacent to) tributary:E-3 Adjacency is shown by □discrete hydrologic connection (explain): □ecological connection (explain): □separated by berm/barrier (explain):	SO Ma <sub>i</sub> Tax Prof 10 10- 10- 10- 10- 10- 10- 10- Rer Rer WE Hycc We' Hycc	ILS D Unit Nam onomy (Su ile Descriptic th (inches) 14 Iric Soil Ind Histosol Histic Ep Sulfidic ( Aquic M marks: ETLAND I Iric Soils Pi marks/Expl	e (Series and ubgroup): n: Horizon licators: bipedon Odor oisture Regir DETERMIN egetation Pre- blogy Presen resent? tain significar	d Phase):       Greenton silty cla         Matrix Color (Munsell Moist)         2.5 YR 4/2         10 YR 3/2         IO Y 3/2	y loam, 5 to	9 percent Mottle Colors Munsell Moist) 6 nditions w-Chroma C aking in San No Is th No Is th No No	Colors dy Soils his Samp	Mottl Siz 5%	Drainage Class: Field Observat	Water color is Cl	ear □brow	n ⊡oily Circle etc. etc.	
Wetland (⊠abuts is □adjacent to) tributary:E-3 Adjacency is shown by □discrete hydrologic connection (explain): □ecological connection (explain): □separated by berm/barrier (explain):	SO Ma <sub>1</sub> Tax Prof 10 10- 10- 10- 10- 10- 10- 10- Rer Rer WE Hycc We Hycc	ILS D Unit Nam onomy (Su ile Descriptic th (inches) 14 Iric Soil Ind Histosol Histic Ep Sulfidic ( Aquic M marks: ETLAND I Iric Soils Pi marks/Explitionships:	e (Series and ubgroup): n: Horizon Licators: bipedon Odor oisture Regin DETERMIN egetation Pre- blogy Presen resent? ain significar.	d Phase):       Greenton silty cla         Matrix Color (Munsell Moist)         2.5 YR 4/2         10 YR 3/2         IO YR 3/2	y loam, 5 to	9 percent Mottle Colors Munsell Moist) 6 nditions w-Chroma C aking in San No Is th No Is th No No	Colors dy Soils his Samp	Iing Point V	Drainage Class: Field Observat	Water color is Ch somewhat poorly tions Confirm Mapped T Texture, Concret SCL SCL tent in Surface Layer in I Hydric Soils List ydric Soils List remarks) Yes C	ear □brow	n ⊡oily Circle etc. etc.	
Wetland (⊠abuts is □adjacent to) tributary:E-3 Adjacency is shown by □discrete hydrologic connection (explain): □ecological connection (explain): □separated by berm/barrier (explain):	SO Ma <sub>1</sub> Tax Prof 10 10- 10- 10- 10- 10- 10- Rer Rer Rer Hycc Hycc Hycc	ILS D Unit Nam onomy (Su ile Descriptic th (inches) 14 Iric Soil Ind Histosol Histic Ep Sulfidic ( Aquic M marks: ETLAND I I trophytic Ve thand Hydro Histosols Pl marks/Explet tionships:	e (Series and ubgroup): n: Horizon Horizon licators: bipedon Odor oisture Regin DETERMIN egetation Pre- blogy Presen resent? ain significar.	d Phase):       Greenton silty cla         Matrix Color       (Munsell Moist)         2.5 YR 4/2       10 YR 3/2         10 YR 3/2       Image: Second stress of the second stress	y loam, 5 to	9 percent Mottle Colors Munsell Moist) 6 nditions w-Chroma C aking in San No Is th No Is th No No	Colors dy Soils his Samp	Iing Point V	Drainage Class: Field Observat	Water color is Ch somewhat poorly tions Confirm Mapped T Texture, Concret SCL SCL tent in Surface Layer in I Hydric Soils List ydric Soils List remarks) Yes C	ear □brow	n ⊡oily Circle etc. etc.	
Wetland (⊠abuts is □adjacent to) tributary:E-3 Adjacency is shown by □discrete hydrologic connection (explain): □ecological connection (explain): □separated by berm/barrier (explain):	SO Ma <sub>1</sub> Tax Prof Dep 10 10 10- 10- Rer Rer Rer Hycc Hycc Hycc	ILS D Unit Nam onomy (Su ile Descriptic th (inches) 14 Iric Soil Ind Histosol Histic Ep Sulfidic 0 Aquic M marks: TLAND I Irophytic Ve thand Hydro Iric Soils Pl marks/Explo	e (Series and ubgroup): n: Horizon licators: bipedon Odor oisture Regir DETERMIN egetation Pre blogy Presen resent?	d Phase):       Greenton silty cla         Matrix Color       (Munsell Moist)         2.5 YR 4/2       10 YR 3/2         10 YR 3/2       Image: Color silty cla         me       Image: Color silty cla         Matrix Color       Image: Color silty cla         Matrix Color       Image: Color silty cla         Image: Color silty cla       Image: Color silty cla         Image: Color silty cla <td< td=""><td>y loam, 5 to</td><td>9 percent Mottle Colors Munsell Moist) 6 nditions w-Chroma C aking in Sand No Is the No Is the No Is the No Is the second</td><td>Colors dy Soils his Samp</td><td>Mottl Siz 5%</td><td>Drainage Class: Field Observat</td><td>Water color is Ch somewhat poorly tions Confirm Mapped T Texture, Concret SCL SCL teent in Surface Layer in I Hydric Soils List ydric Soils List remarks) Yes C</td><td>ear □brow</td><td>n ⊡oily Circle etc. etc.</td></td<>	y loam, 5 to	9 percent Mottle Colors Munsell Moist) 6 nditions w-Chroma C aking in Sand No Is the No Is the No Is the No Is the second	Colors dy Soils his Samp	Mottl Siz 5%	Drainage Class: Field Observat	Water color is Ch somewhat poorly tions Confirm Mapped T Texture, Concret SCL SCL teent in Surface Layer in I Hydric Soils List ydric Soils List remarks) Yes C	ear □brow	n ⊡oily Circle etc. etc.	
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	SO Ma <sub>1</sub> Tax Prof Dep 10 10 10- 10 10- Rer Rer Rer Rer rela	ILS D Unit Nam onomy (Su ile Descriptic th (inches) 14 Iric Soil Ind Histosol Histic Ep Sulfidic 4 Aquic M marks: ETLAND I Iric Soils Pl marks/Expl tionships:	e (Series an ubgroup): n: Horizon licators: bipedon Odor oisture Regir DETERMIN egetation Pre- blogy Presen resent?	d Phase):       Greenton silty cla         Matrix Color       (Munsell Moist)         2.5 YR 4/2       10 YR 3/2         10 YR 3/2       Image: Color silty cla         me       Image: Color silty cla         Attion       Color silty cla         Seent?       Image: Color silty cla         at nexus (pollution filtration, flood	y loam, 5 to	9 percent Mottle Colors Munsell Moist) 6 nditions w-Chroma C aking in San No Is th No Is th No	Colors dy Soils his Samp	Mottl Si 5%	Drainage Class: Field Observat	Water color is Ch	ear □brow	noily	
Separated by berm/barrier (explain):	SO Ma <sub>1</sub> Tax Prof Dep 10 10 10- 10 10- Rer Rer Rer Rer Rer rela	ILS D Unit Nam onomy (Su ile Descriptic th (inches) 14 Iric Soil Ind Histosol Histic Ep Sulfidic G Aquic M marks: ETLAND I Iric Soils Pi marks/Expli tionships: tland ([X]at	e (Series an ubgroup): n: Horizon Horizon dicators: bipedon Odor oisture Regir DETERMIN egetation Pre- blogy Presen resent? lain significant	d Phase):       Greenton silty cla         Matrix Color       (Munsell Moist)         2.5 YR 4/2       10 YR 3/2         10 YR 3/2       Image: Color silty cla         me       Image: Color silty cla         Atton       Image: Color silty cla         me       Image: Color silty cla         Atton       Image: Color silty cla         Image: Color silty cla       Image: Color silty cla     <	y loam, 5 to	9 percent Mottle Colors Munsell Moist) 6 nditions w-Chroma C aking in San No Is th No No No	Colors dy Soils his Samp	Mottl 5%	Drainage Class: Field Observat     e Abundance/ ze/Contrast     High Organic Con Listed on Nationa Listed on Local H Other (explain in Other (explain in	Water color is Chi	ear □brow	noily	
	SO Maş Tax Prof Dep 10 10- 10- 10- 10- 10- 10- 10- Rer Rer Rer Rer Rer Rer Rer Rer Rer So So So So So So So So So So So So So	ILS D Unit Nam onomy (Su ile Descriptic th (inches) 14 Iric Soil Ind Histosol Histosol Histosol Sulfidic G Sulfidic G Aquic M marks: TLAND I tric Soils Pi marks/Expl. tionships: tland (⊠at acency is s	e (Series anu ubgroup): n: Horizon Horizon ticators: bipedon Odor oisture Regir DETERMIN egetation Pre- blogy Presen resent? ain significant buts is □adja bhown by □c	d Phase):       Greenton silty cla         Matrix Color       (Munsell Moist)         2.5 YR 4/2       10 YR 3/2         10 YR 3/2       Image: Color of the second connection (explain):         me       Image: Color of the second secon	y loam, 5 to	9 percent Mottle Colors Munsell Moist) 6 6 nditions w-Chroma C aking in Sand No Is th No No No Is the No	Colors dy Soils his Samp	Mottl 5%	Drainage Class: Field Observat	Water color is Chi	ear □brow	noily	

te: Botts Road JDR Date: 8-16-07 Owner: Piper-Wind Architects, Inc. County: Jackson Or: Chris Thomas & Kevin States MO	
or: Chris Thomas & Kevin Slates MO	
Circumstances exist on the site?	
ignificantly disturbed (Atypical Situation)?	
otential Problem Area? ( <i>if needed, explain on reverse</i> )	
anudianase H EACW 9	icator
s arunomacea n PACVV- o	
cca Americana H FAC- 10	
um pennsylvanicum H FACW 11 diumondi S FAC 12	
a triacanthos T FAC 13	
14	
Dominant Species that are OBL, FACW or FAC (excluding FAC-): 83%	
DGY	
rded Data (describe in Remarks) Wetland Hydrology Indicators	
Stream, Lake, or Tide Gauge Primary Indicators: Secondary Indicators (2 or more required):	
Aerial Photographs Inundated Oxidized Root Channels in Upper	12"
Other Saturated in Upper 12 inches Water-Stained Leaves	
<u>corded data available</u>	
Valuotis.	
Pree Water in Pit: N/A (III.) Drainage Patterns in Wetlands	
Saturated Soil: N/A (In.)	
	101111
	Joliy
lame (Series and Phase): Greenton silty clay loam, 5 to 9 percent Drainage Class: somewhat poorly Circle Field Observations Confirm Mapped Type? Yes	e No
lame (Series and Phase): Greenton silty clay loam, 5 to 9 percent Drainage Class: somewhat poorly Circle Field Observations Confirm Mapped Type? Yes	e <u>No</u>
Iame (Series and Phase):     Greenton silty clay loam, 5 to 9 percent     Drainage Class: somewhat poorly     Circle       Iguidation:     Image Class:     Somewhat poorly     Circle       Iption:     Image Class:     Matrix Color     Mottle Colors       Image Class:     Image Class:     Somewhat poorly     Circle       Iption:     Image Class:     Image Class:     Somewhat poorly       Image Class:     Image Class:     Image Class:     Image Class:	e No
Image Class:     Greenton silty clay loam, 5 to 9 percent     Drainage Class:     somewhat poorly     Circle       iption:     iption:     Size/Contrast     Texture, Concretions, Structure, etc.	e No
Image Class:     I	e <u>No</u>
Image Class:     Somewhat poorly     Circle       (Subgroup):	e <u>No</u>
Image Class:       Somewhat poorly       Circle         Image Series and Phase):	
Image Class:       Somewhat poorly       Circle         Image Class:       Somewhat poorly       Circle         Signification       Image Class:       Somewhat poorly       Circle         Signification       Matrix Color       Mottle Colors       Mottle Abundance/       Size/Contrast       Texture, Concretions, Structure, etc.         Image Class:       10 YR 3/2       Image Class:       Size/Contrast       Texture, Concretions, Structure, etc.	e <u>No</u>
Iame (Series and Phase):       Greenton silty clay loam, 5 to 9 percent       Drainage Class: somewhat poorly       Circle         (Subgroup):       Field Observations Confirm Mapped Type?       Yes         iption:       Matrix Color       Mottle Colors       Mottle Abundance/         s)       Horizon       (Munsell Moist)       Size/Contrast       Texture, Concretions, Structure, etc.         10 YR 3/2       10 YR 3/2       10       Indicators:       Indicators:	e No
Image Class:       Greenton silty clay loam, 5 to 9 percent       Drainage Class:       Somewhat poorly       Circle         Index code       Greenton silty clay loam, 5 to 9 percent       Drainage Class:       Somewhat poorly       Circle         Index code       Greenton silty clay loam, 5 to 9 percent       Field Observations Confirm Mapped Type?       Yes         Index code       Matrix Color       Mottle Colors       Mottle Abundance/       Size/Contrast       Texture, Concretions, Structure, etc.         Indicators:       Indicators:       Indicators:       Image Class:       Size/Contrast       Image Class:       Size/Contrast         Indicators:       Image Class:       Im	e No
Image Class:       Somewhat poorly       Circle         Substruction is Listed in Sile Class:       Somewhat poorly       Circle         Sile Contrast       Field Observations Confirm Mapped Type?       Yes         Sile Contrast       Texture, Concretions, Structure, etc.       Sile Contrast         Indicators:       Sol       Reducing Conditions       High Organic Content in Surface Layer in Sandy Soils         Sile Contrast       Sile Contrast       Listed on National Hydric Soils List	
Image: Control Conteret (exclere Control Control Control Contro	
Iame (Series and Phase):       Greenton silty clay loam, 5 to 9 percent       Drainage Class: somewhat poorly       Circle         (Subgroup):       Field Observations Confirm Mapped Type? Yes         iption:       Matrix Color       Mottle Colors         y       Horizon       (Munsell Moist)       Size/Contrast         10 YR 3/2       10 YR 3/2       10 YR 3/2         Indicators:       sol       Gleyed or Low-Chroma Colors       High Organic Content in Surface Layer in Sandy Soils         Solor       Gleyed or Low-Chroma Colors       Listed on National Hydric Soils List       Listed on Local Hydric Soils List         Y Moisture Regime       Organic Streaking in Sandy Soils       Other (explain in remarks)	
Iame (Series and Phase):       Greenton silty clay loam, 5 to 9 percent       Drainage Class: somewhat poorly       Circle         (Subgroup):       Field Observations Confirm Mapped Type?       Yes         iption:       Matrix Color       Mottle Colors       Mottle Abundance/         S       Horizon       Munsell Moist)       Size/Contrast       Texture, Concretions, Structure, etc.         1       2.5 YR 4/2       Image Class:       Texture, Concretions, Structure, etc.         10 YR 3/2       Image Class:       Texture, Concretions, Structure, etc.         Indicators:       Size/Contrast       Texture, Concretions, Structure, etc.         sol       Reducing Conditions       Size/Contrast       Image Class:         Indicators:       Sol       Size/Contrast       Size/Contrast         Sol       Reducing Conditions       Size/Contrast       Size/Contrast         Indicators:       Sol       Size/Contrast       Size/Contrast         Sol       Size/Contrast       Size/Contrast       Size/Contrast         Indicators:       Sol       Size/Contrast       Size/Contrast         Sol       Size/Contrast       Size/Contrast       Size/Contrast         Size/Contrast       Size/Contrast       Size/Contrast         Sol       Size/Co	
Iame (Series and Phase):	
Iame (Series and Phase):       Greenton silty clay loam, 5 to 9 percent       Drainage Class: somewhat poorly       Circle         iption:       Matrix Color       Mottle Colors       Mottle Abundance/       Field Observations Confirm Mapped Type?       Yes         s)       Horizon       Matrix Color       Mottle Colors       Mottle Abundance/       Size/Contrast       Texture, Concretions, Structure, etc.         10 YR 3/2         Indicators:       Sol       Gleved or Low-Chroma Colors       High Organic Content in Surface Layer in Sandy Soils       Sandy Soils List         iscodor       Organic Streaking in Sandy Soils       Other (explain in remarks)       Other (explain in remarks)	ie <u>No</u>
Iame (Series and Phase):       Greenton silty clay loam, 5 to 9 percent       Drainage Class: somewhat poorly       Circle         Iption:       Matrix Color       Mottle Colors       Mottle Abundance/       Size/Contrast       Texture, Concretions, Structure, etc.         1       2.5 YR 4/2       10 YR 3/2       10 YR 3/2       10 YR 3/2       10 YR 3/2         Indicators:       Sol       Reducing Conditions       Listed on National Hydric Soils List       Listed on National Hydric Soils List         2 Epipedon       Organic Streaking in Sandy Soils       Other (explain in remarks)       No mottles	
Iame (Series and Phase):       Greenton silty clay loam, 5 to 9 percent       Drainage Class: somewhat poorly       Circle         iption:       Matrix Color       Field Observations Confirm Mapped Type?       Yes         s)       Horizon       (Munseil Moist)       Mottle Colors       Mottle Abundance/         s)       Horizon       (Munseil Moist)       (Munseil Moist)       Size/Contrast       Texture, Concretions, Structure, etc.         10 YR 3/2       10 YR 3/2       10       10       Reducing Conditions       10         Sel pipedon       Gleyed or Low-Chroma Colors       High Organic Content in Surface Layer in Sandy Soils       Listed on National Hydric Soils List         2 Moisture Regime       Organic Streaking in Sandy Soils       Other (explain in remarks)         D DETERMINATION       Deteremination	
Iame (Series and Phase):       Greenton silty clay loam, 5 to 9 percent       Drainage Class: somewhat poorly       Circle         iption:       Field Observations Confirm Mapped Type?       Yes         s)       Horizon       Matrix Color       Mottle Colors         s)       Horizon       Matrix Color       Size/Contrast       Texture, Concretions, Structure, etc.         10 YR 3/2         Indicators:       Size/Contrast       Size/Contrast       Surface Layer in Sandy Soils         Seleved or Low-Chroma Colors       Eleved or Low-Chroma Colors       Listed on National Hydric Soils List         Codor       Organic Streaking in Sandy Soils       Detreminks)       Other (explain in remarks)         No mottles       Yes       No       Is this Sampling Point Within a Wetland?       Yes       No	
Iame (Series and Phase):       Greenton silty clay loam, 5 to 9 percent       Drainage Class: somewhat poorly       Circle         iplion:       Field Observations Confirm Mapped Type?       Yes         s)       Horizon       (Munsell Moist)       Mottle Abundance/         2.5 YR 4/2       Image Class: somewhat poorly       Texture, Concretions, Structure, etc.         10 YR 3/2       Image Class:       Texture, Concretions, Structure, etc.         Indicators:       Size/Contrast       Texture, Concretions, Structure, etc.         Septedon       Sleyed or Low-Chroma Colors       Image Class: Soils List         Corcertions       Beyed or Low-Chroma Colors       Image Class: Soils List         Soils Corcertions       Size/Contrast       Soils List         Moisture Regime       Organic Streaking in Sandy Soils       Soils List         No mottles       Yes       No       Is this Sampling Point Within a Wetland?       Yes       No	
Iame (Series and Phase):       Greenton silty clay loam, 5 to 9 percent       Drainage Class: somewhat poorly       Circle         iption:       Matrix Color       Mottle Colors       Mottle Abundance/       Size/Contrast       Texture, Concretions, Structure, etc.         2.5 YR 4/2       10 YR 3/2       10 YR 3/2       10 YR 3/2       10 YR 3/2         Indicators:       Sol       Reducing Conditions       High Organic Content in Surface Layer in Sandy Soils         Sol       Concretions       Concretions       Concretions         Organic Streaking in Sandy Soils       Other (explain in remarks)       Other (explain in remarks)         No mottles       Yes       No       Is this Sampling Point Within a Wetland?       Yes       No         2 Vegetation Present?       Yes       No       Is this Sampling Point Within a Wetland?       Yes       No	
Iame (Series and Phase):       Greenton silty clay loam, 5 to 9 percent       Drainage Class: somewhat poorly       Circle         iption:       Matrix Color       Matrix Color       Mottle Colors       Mottle Abundance/         spino:       Matrix Color       Mottle Colors       Mottle Abundance/         10 YR 3/2       Image Class: somewhat poorly       Texture, Concretions, Structure, etc.         Indicators:       Reducing Conditions       Image Class:       Texture, Concretions, Structure, etc.         Spipedon       Gleyed or Low-Chroma Colors       Isted on National Hydric Soils List       Listed on National Hydric Soils List         ic Odor       Organic Streaking in Sandy Soils       Usted on Local Hydric Soils List       Other (explain in remarks)         No mottles       Yes       No       Is this Sampling Point Within a Wetland?       Yes       No         vegetation Present?       Yes       No       No       Is this Sampling Point Within a Wetland?       Yes       No         vegetation Present?       Yes       No       No       Is this Sampling Point Within a Wetland?       Yes       No         vegetation Present?       Yes       No       No       No       No       Stational present?       No         spresent?       Yes       No       No       No	<u>ie</u> <u>No</u>
Iame (Series and Phase):       Greenton silty clay loam, 5 to 9 percent       Drainage Class: somewhat poorly       Circle         (Subgroup):       Matrix Color       Matrix Colors       Mottle Colors       Mottle Abundance/         s)       Horizon       10 YR 3/2       Texture, Concretions, Structure, etc.         Indicators:       Indicators:       Size/Contrast       Texture, Concretions, Structure, etc.         sol       Reducing Conditions       Ister down Ational Hydric Soils List       Size/Contrast         Indicators:       Sol       Reducing Conditions       Ister down Ational Hydric Soils List         Sol       Reducing Conditions       Size/Contrast       Size down Layer in Sandy Soils         Sol       Reducing Conditions       Ister down Colors       Ister down Colors         Sol       Reducing Conditions       Size down Colors       Ister down Colors         Sol       Reducing Conditions       Ister down Colors       Ister down Colors         Sol       Reducing Conditions       Size down Colors       Ister down Colors         Sol       Reducing Conditions       Size down Colors       Ister down Colors         Sol       Reducing Conditions       Size down Colors       Size down Colors         Matrix Regime       Organic Streaking in Sandy Soils       Size down Col	<u>e</u> <u>No</u>
Iame (Series and Phase):       Greenton silty clay loam, 5 to 9 percent       Drainage Class: somewhat poorly       Circle         iplion:       Matrix Color       Mottle Colors       Mottle Abundance/       Size/Contrast       Texture, Concretions, Structure, etc.         a       10 YR 3/2       Image Class:       Texture, Concretions, Structure, etc.         Indicators:       Size/Contrast       Texture, Concretions, Structure, etc.         Selpipedon       Gleyed or Low-Chroma Colors       High Organic Content in Surface Layer in Sandy Soils         Selpipedon       Gleyed or Low-Chroma Colors       Listed on National Hydric Soils List         Moisture Regime       Organic Streaking in Sandy Soils       Other (explain in remarks)         No mottles       Yes       No         Stagestaion Present?       Yes       No         Yes       No       Is this Sampling Point Within a Wetland?       Yes         Yes       No       No       Staficant nexus (pollution filtration, flood water retention, feeding/nesting/spawning ground for TNW species, other biological, physical or chemicals:	<u>e</u> <u>No</u>
Itame (Series and Phase):       Greenton silty clay loam, 5 to 9 percent       Drainage Class: somewhat poorly       Circle         iption:       Field Observations Confirm Mapped Type?       Yes         s)       Horizon       (Munsell Moist)       Size/Contrast       Texture, Concretions, Structure, etc.         10 YR 3/2       Image Class:       Image Class:       Image Class:       Somewhat poorly       Yes         Indicators:       Size/Contrast       Texture, Concretions, Structure, etc.       Image Class:	e <u>No</u>
Iame (Series and Phase):       Greenton silty clay loam, 5 to 9 percent       Drainage Class: somewhat poorly       Circle         iplion:       Natrix Color       Mottle Colors       Mottle Abundance/       Texture, Concretions, Structure, etc.         s)       Horizon       (Munsell Moist)       Size/Contrast       Texture, Concretions, Structure, etc.         a       10 YR 3/2       Image: Class:       Texture, Concretions, Structure, etc.         b       Indicators:       Image: Class:       Size/Contrast       Texture, Concretions, Structure, etc.         sol       Image: Class:       Reducing Conditions       Image: Class:       Image: Class:       Texture, Concretions, Structure, etc.         Indicators:       Selped on       Image: Class:       Image: Class:       Image: Class:       Image: Class:         Sol       Image: Class:       Reducing Conditions       Image: Class:       Image: Class:       Image: Class:         Sol       Image: Class:       Sol       Image: Class:       Sol       Image: Class:         Sol       Image: Class:       Image: Class:       Sol       Image: Class:       Texture, Concretions, Structure, etc.         Sol       Image: Class:       Sol       Image: Class:       Sol       Image: Class:       Sol         Sol       Organi	e <u>No</u>
Iame (Series and Phase):       Greenton silly clay loam, 5 to 9 percent       Drainage Class: somewhat poorly       Circle         (Subgroup):       Matrix Color       Mottle Colors       Mottle Abundance/       Field Observations Confirm Mapped Type? Yes         s)       Horizon       Matrix Color       Mottle Colors       Mottle Abundance/         s)       Horizon       Kunsell Moist)       Size/Contrast       Texture, Concretions, Structure, etc.         indicators:       indicators:       Sol       Image Class: Sol       Image Class: Sol       Image Class: Sol         Sol       Image Conditions       Gleyed or Low-Chroma Colors       Image Class: Solis List       Solis List         Sol       Image Class: Solis Concretions       Image Class: Solis List       Solis Concretions       Image Class: Solis List         Sol       Image Class: Solis Concretions       Image Class: Solis List       Solis List       Solis Concretions         Sol       Image Class: Solis Concretions       Image Class: Solis List       Solis List       Solis List         Mottle Regime       Organic Streaking in Sandy Solis       Other (explain in remarks)       No         No mottles       Yes       No       Is this Sampling Point Within a Wetland?       Yes       No         Splain significant nexus (pollution filtration, flood water reten	e <u>No</u>
Iame (Series and Phase):       Greenton silly clay loam, 5 to 9 percent       Drainage Class: somewhat poorly       Circle         (Subgroup):       Field Observations Confirm Mapped Type?       Yes         iption:       Matrix Color       Mottle Colors       Mottle Abundance/         s)       Horizon       (Munsell Moist)       Mottle Colors       Texture, Concretions, Structure, etc.         i       10 YR 3/2       image Class:       Texture, Concretions, Structure, etc.         indicators:       Sol       Gleyed or Low-Chroma Colors       isted on National Hydric Soils List         Spipedon       Gleyed or Low-Chroma Colors       Listed on Local Hydric Soils List       Listed on Local Hydric Soils List         Vogranic Streaking in Sandy Soils       Organic Streaking in Sandy Soils       Other (explain in remarks)       No         No mottles       Yes       No       Is this Sampling Point Within a Wetland?       Yes       No         spresent?       Yes       No       Is this Sampling Point Within a Wetland?       Yes       No         spresent?       Yes       No       Is this Sampling Point Within a Wetland?       Yes       No         spresent?       Yes       No       Is this Sampling Point Within a Wetland?       Yes       No         spresent?       Yes       No<	e <u>No</u>
lame (Series and Phase):       Greenton silty clay loam, 5 to 9 percent       Drainage Class: somewhat poorly       Circle         (Subgroup):       Matrix Color       Motifie Colors       Field Observations Confirm Mapped Type? Yes         s)       Horizon       2.5 YR 4/2       Size/Contrast       Texture, Concretions, Structure, etc.         1       10 YR 3/2       Image Class:       Texture, Concretions, Structure, etc.       Size/Contrast         Indicators:       Image Class:       Texture, Concretions, Structure, etc.       Image Class:       Structure, etc.         Indicators:       Image Class:       Texture, Concretions, Structure, etc.       Image Class:       Texture, Concretions, Structure, etc.         Sol       Image Class:       Reducing Conditions       Image Class:       Texture, Concretions, Structure, etc.         Sol       Image Class:       Concretions       Image Class:       Structure, etc.         Sol       Image Class:       Concretions       Image Class:       Structure, etc.         Sol       Image Class:       Sol       Image Class:       Structure, etc.         Sol       Image Class:       Sol       Image Class:       Structure, etc.         Sol       Image Class:       Sol       Image Class:       Sol         Detereminnation       <	e <u>No</u>

Proj App Inve	ject Site: blicant/Ov estigator:	vner: <u>Pi</u> Cl	otts Road JDR per-Wind Architects, Inc. nris Thomas & Kevin Slates					Date: County: State:	8-16-07 Jackson MO		
Do N	Normal Cir	cumstances	exist on the site?		Yes		No	Community ID:	PEM 2-1		
Is th	ie site sign rea a Pote	ificantly distu	rbed (Atypical Situation)? Area? (if needed, explain on re	verse)			No	Transect ID: Plot ID:	DP# 1-In		
10 7 1								TIOCID.			
VEC	GETATIO	<u>N</u>		<b>0</b> . 1						0.1	
Dom 1	Cyperus es	culentus		Stratum H	FACW	Domin 8	ant Plant Spec	cies		Stratum	Indicator
2	Abutilon the	eophrasti		Н	FACU-	9					
4	Polygonum	pensylvanicum	1	H	FACU	11					
5 6	Carex lupul Ammania c	ina occinea		H H	OBL	12 13					
7						14					
Ren	narks:				AC-). 61	70					
HYI	DROLOG	iΥ									
Field D D	Recorde	d Data (desc Stream, Lal Aerial Phote Other rded data ava tions: urface Water: ee Water in F aturated Soil:	ribe in Remarks) ke, or Tide Gauge ographs ailable Pit: <u>N/A</u> (In.) <u>N/A</u> (In.)	Wetlan Pri	d Hydrolog imary Indica Inun Satu Wate Drift Sedi Drair	y Indicat ators: dated rated in ar Marks Lines ment De nage Pat	ors: Upper 12 inc posits terns in Wet	ches	Secondary Indicators (2 d Oxidized Root C Water-Stained L Local Soil Surve FAC-Neutral Te Other (explain in	or more requ Channels in U Leaves Ly Data St n remarks)	iired): Jpper 12"
Ren	narks	Farmed							Water color is ⊟cle	ar ∏brow	n ∏oily
SO	ILS										
Мар Тахо	o Unit Nam onomy (Su	e (Series and bgroup):	d Phase): Greenton silty clay	loam, 5 to 9	9 percent			Drainage Class: Field Observat	somewhat poorly tions Confirm Mapped Ty	/pe? Yes	Circle <u>No</u>
Profi	le Descriptio	n:	Matrix Color	M	Inttle Colors		Mottle	a Abundance/			
Dept	h (inches)	Horizon	(Munsell Moist)	(M	lunsell Moist)		Siz	ze/Contrast	Texture, Concretio	ns, Structure,	etc.
0-20	)		7.5 YR 3/1	10 YR 4/6	5		5%		SCL		
Hyd	ric Soil Ind Histosol Histic Ep Sulfidic ( Aquic Mo marks:	licators: Dipedon Odor Oisture Regin No mottles	ne Or	educing Con eyed or Low ncretions ganic Streal	iditions <i>i-</i> Chroma C king in San	colors dy Soils		High Organic Cor Listed on Nationa Listed on Local H Other (explain in	ntent in Surface Layer in I Hydric Soils List ydric Soils List remarks)	Sandy Soils	
WE		DETERMIN	ATION								
Hyd Wet Hyd	rophytic Ve land Hydro ric Soils Pi	egetation Pre blogy Present resent?	sent? Xe ? Xe Xe Xe		No Is ti No No	his Sam	oling Point W	Vithin a Wetland?	Yes 🔲 N	0	
Ren relat Wett Adja	narks/Expla tionships: land (⊟ab acency is s	ain significan buts is □adja hown by □d □ec □se	t nexus (pollution filtration, flood cent to) tributary: iscrete hydrologic connection (e. cological connection (explain): eparated by berm/barrier (explain)	water reten: xplain): 1):	tion, feedin	g/nestin	g/spawning g	ground for TNW sp	ecies, other biological, p	hysical or ch	emical

## DATA FORM **ROUTINE WETLAND DETERMINATION**

(1987 COE Wetlands Delineation Manual)

Project Site: Applicant/Owner: Investigator:	Bo Pi Cł	otts Road JDR per-Wind Architects, Inc. nris Thomas & Keving Slates	3				Date: County: State:	8-16-07 Jackson MO		
Do Normal Circumsta	nces	exist on the site?		Yes		No	Community ID:	PEM 2-2		
Is the site significantly Is Area a Potential Pr	/ distu oblem	rbed (Atypical Situation)? Area? (if needed, explain on re	verse)	□ Yes □ Yes		No No	Transect ID: Plot ID:	DP# 2-Out		
VEGETATION										
Dominant Plant Species			Stratum	Indicator	Domin	ant Plant Spec	ies		Stratum	Indicator
Phalaris arundinace     Setaria virdis	a		H H	FACW- UPL	8 9					
Andropogon virginio     Bromus tectorum	us		H	FAC-	10					
5				012	12				-	
7					13					
Percent of Dominant	Specie	es that are OBL, FACW or FAC	excluding F	AC-): 25	%					
Remarks:										
HYDROLOGY										]
Recorded Data     Strea     Aeria     Other     No recorded da	(desc m, Lal I Photo ta ava	ribe in Remarks) ke, or Tide Gauge ographs illable	Wetlar Pri	id Hydrology imary Indica Inund Satur Wate	y Indica <i>tors:</i> lated ated in r Marks	tors: Upper 12 inc	hes	ondary Indicators (2 o Oxidized Root C Water-Stained L Local Soil Surve	or more requ hannels in L eaves y Data	<i>iired):</i> Jpper 12"
Field Observations: Depth of Surface V Depth to Free Wat Depth to Saturated	Vater: er in F I Soil:	N/A         (In.)           N/A         (In.)           N/A         (In.)		Drift L Sedir Drain	₋ines nent De age Pat	posits terns in Wetl	ands	FAC-Neutral Tes Other (explain in	st remarks)	
Remarks										
							,	Nater color is □clea	ar Πbrow	n ⊟oilv
SOILS										
Map Unit Name (Seri Taxonomy (Subgroup	es and ):	Phase): Greenton silty clay	loam, 5 to	9 percent			Drainage Class: sor Field Observations	newhat poorly Confirm Mapped Ty	pe? Yes	Circle <u>No</u>
Profile Description:		Matrix Color	N	lottle Colors		Mottle	Abundance/			
Depth (inches) Hori	zon	(Munsell Moist)	(N	lunsell Moist)		Siz	e/Contrast	Texture, Concretion	ns, Structure,	etc.
Hydric Soil Indicators Histosol Histic Epipedor Sulfidic Odor Aquic Moisture	Regin	ne Re	educing Cor eyed or Low oncretions ganic Strea	nditions v-Chroma C king in Sano	olors dy Soils		High Organic Content Listed on National Hyd Listed on Local Hydric Other (explain in rema	in Surface Layer in S dric Soils List Soils List arks)	Sandy Soils	
Remarks: Refosa	al @ 8'									
WETLAND DETER	RMIN	ATION								
Hydrophytic Vegetatio Wetland Hydrology P Hydric Soils Present?	on Pre resent	sent?	es 🛛 es 🖾 es 🖾	No Is th No No	iis Sam	oling Point W	/ithin a Wetland?	]Yes 🛛 N	D	
Remarks/Explain sigr relationships:	nifican	t nexus (pollution filtration, flood	water reten	tion, feeding	g/nestin	g/spawning g	round for TNW specie.	s, other biological, pl	nysical or ch	emical
Wetland (⊟abuts is [ Adjacency is shown b	]adja by []d []eo []se	cent to) tributary: iscrete hydrologic connection (e: cological connection (explain): parated by berm/barrier (explain	xplain): n):							

		1								
Proiect Site:	В	otts Road JDR					Date:	8-16-07		
Applicant/Ow	vner: P	iper-Wind Architects, Inc.					County:	Jackson		
Investigator:	С	hris Thomas & Kevin Slates					State:	MO		
Do Normal Cire	cumstances	exist on the site?		X Yes		No	Community ID:	PEM – 3		
Is the site sign	ificantly dist	irbed (Atypical Situation)?		□ Yes		No	Transect ID:			
Is Area a Pote	ntial Problen	Area? (if needed, explain on re	verse)	□ Yes		No	Plot ID:	DP# 1 - In		
VEGETATIO	N		-							
Dominant Plant S	Species		Stratum	Indicator	Domin	nant Plant Spe	cies		Stratum	Indicator
1 Carex sp.	eule etue		Н	EACM/	8					
3 Polygonum:	s sp.		Н	FACW	10					
4 Amaranthus	s albus		Н	FACU	11					
6 Elymus virg	inicus		Н	FACU FACW-	12					
7 Acer saccha	arinum		Т	FACW	14					
Percent of Dor	minant Spec	es that are OBL, FACW or FAC	excluding F	FAC-): 60	1%					
Remarks:										
HYDROLOG	iΥ									
D Pocordo	d Data (dea	ribe in Remarks)	Wotlop		v Indica	atore:				
	Stream. La	ke. or Tide Gauge	Pri	imarv Indica	tors:	1015.		Secondary Indicators (2	? or more real	uired):
	Aerial Pho	ographs			lated			Oxidized Root	Channels in L	Jpper 12"
	Other			Satu	ated in	Upper 12 in	ches	Water-Stained	Leaves	
No recor	rded data av	ailable		Wate	r Marks	6		Local Soil Sur	vey Data	
Depth of Su	uons. urface Water	None (In)		Sedir	nent De	eposits		Other (explain	in remarks)	
Depth to Fre	ee Water in	Pit: None (In.)		Drain	age Pa	atterns in We	tlands	Presence of C	rayfish	
Depth to Sa	aturated Soil:	None (In.)								
Remarks										
riomanio										
								Water color is CC	ear ⊟brow	n ⊟oilv
SOILS							1			
Map Unit Nam	e (Series an	d Phase): Greenton silty clay	loam, 5-9 p	percent slop	es		Drainage Class	s: somewhat poorly		Circle
Taxonomy (Su	lbgroup):						Field Observa	ations Confirm Mapped	Гуре? Yes	s <u>No</u>
Profile Descriptio										
T Tome Descriptio		Matrix Color	N	lottle Colors		Mott	le Abundance/			
Depth (inches)	Horizon	(Munsell Moist)	(M	lunsell Moist)		Si	ze/Contrast	Texture, Concret	ions, Structure,	etc.
23-26		10 TR 2/1	10YR 4/4			5%				
20 20						0,0				
Hydric Soil Ind	icators:									
	vinodon		educing Con	ditions	olore		High Organic Co	ontent in Surface Layer in	n Sandy Soils	
	Odor		ncretions		01015		Listed on Local I	Hvdric Soils List		
Aquic Me	oisture Regi	ne 🗌 Ör	ganic Strea	king in San	dy Soils		Other (explain in	remarks)		
Pomorko:	0-12" soil fr	m Aa field 12"-below native asi	1							
THE COMPANY	J-12 SUI 110	an Agricia. 12 -Delow fiduve SOI								
Remarks.										
Remarks.										
Remarks.										
WETLAND D	DETERMIN	ATION								
WETLAND I	DETERMIN	ATION		No lett	nis Sam	nling Point V	Nithin a Wetland?		No	
WETLAND I Hydrophytic Ve Wetland Hydro	DETERMIN egetation Presen	ATION esent? Ye t? Ye	is 🔲	No Is th No	nis Sam	pling Point V	Vithin a Wetland?	Yes 🔲	No	
WETLAND E Hydrophytic Ve Wetland Hydro Hydric Soils Pr	DETERMIN egetation Pro- plogy Presen resent?	ATION esent? Xe t? Xe Xe Xe		No Is th No No	nis Sarr	npling Point V	Vithin a Wetland?	Yes 🔲	No	
WETLAND I Hydrophytic Ve Wetland Hydro Hydric Soils Pr Remarks/Evol	DETERMIN egetation Pro- plogy Presen resent?	ATION esent? Xe t? Xe t? Ye t nexus (pollution filtration flood		No Is th No No	nis Sam	Ipling Point V	Vithin a Wetland?		No	emical
WETLAND I Hydrophytic Ve Wetland Hydro Hydric Soils Pr Remarks/Expla relationships:	DETERMIN egetation Pre logy Presen resent? ain significar	ATION esent? t? t nexus (pollution filtration, flood	vs  water reten	No Is th No No tion, feeding	nis Sarr g/nestin	npling Point V ng/spawning	Vithin a Wetland? ground for TNW s	Yes D	No physical or ch	iemical
WETLAND I Hydrophytic Ve Wetland Hydro Hydric Soils Pr Remarks/Expla relationships:	DETERMIN egetation Pro logy Presen resent? ain significar	ATION esent? Xe t? Xe Xe t nexus (pollution filtration, flood	vs	No Is th No No tion, feeding	nis Sam g/nestir	npling Point V ng/spawning	Vithin a Wetland? ground for TNW s	Yes	No physical or ch	emical
WETLAND I Hydrophytic Ve Wetland Hydro Hydric Soils Pr Remarks/Expla relationships:	DETERMIN egetation Pro logy Presen resent? ain significar	ATION esent? Xe t? Xe Xe t nexus (pollution filtration, flood	vs D s D s D water reten	No Is th No No	nis Sam g/nestin	npling Point V	Vithin a Wetland? ground for TNW s	Yes	No physical or ch	iemical
WETLAND I Hydrophytic Ve Wetland Hydro Hydric Soils Pr Remarks/Expla relationships:	DETERMIN egetation Pro logy Presen resent? ain significar	ATION esent? Ye t? Xe Xet nexus (pollution filtration, flood	vs D s D water reten	No Is th No No tion, feeding	nis Sarr	npling Point V	Vithin a Wetland? ground for TNW s	Yes	No physical or ch	emical
WETLAND E Hydrophytic Ve Wetland Hydro Hydric Soils Pr Remarks/Expl relationships:	DETERMIN egetation Pro ology Presen resent? ain significar	ATION esent? I? IX Ye X Y	s D s D water reten	No Is th No No	nis Sam g/nestin	npling Point \	Nithin a Wetland? ground for TNW s	Yes	No physical or ch	emical
WETLAND E Hydrophytic Ve Wetland Hydro Hydric Soils Pr Remarks/Expla relationships:	DETERMIN egetation Pro ology Presen resent? ain significar	ATION  asent?  Ye  Ye  Ye  Ye  At nexus (pollution filtration, flood  acent to) tributary: I-3  liscrete hydrologic connection (e:	xplain):	No Is th No No	nis Sam	npling Point \	Nithin a Wetland? ground for TNW s	Yes	No physical or ch	emical
WETLAND E Hydrophytic Ve Wetland Hydro Hydric Soils Pr Remarks/Expla relationships:	DETERMIN egetation Pro logy Presen resent? ain significar ain significar buts is ⊠adji hown by □d	ATION  Asent?  Are as a contraction of the second content of the s	xplain):	No Is th No No	nis Sam	npling Point \	Nithin a Wetland? ground for TNW s	Yes	No physical or ch	emical

Pro	ject Site:	B	otts Road JDR					Date:	_	8-16-07		
Ap	olicant/Ow	/ner: Pi	per-Wind Architects, Inc					County:	_	Jackson		
Inv	estigator:	C	hris Thomas & Kevin Sla	ates				State:	-	MO		
Do	Normal Cire	cumstances	exist on the site?		Yes		No	Community ID:	-	PEM – 3		
Is th	ne site signi	ificantly distu	rbed (Atypical Situation)?		Yes		No	Transect ID:	_			
ls A	rea a Poter	ntial Problem	Area? (if needed, explain	on reverse)			No	Plot ID:	-	DP# 2 - Out		
VE	GETATIO	N										
Don	ninant Plant S	Species		Stratum	Indicator	Domina	ant Plant Spec	ies			Stratum	Indicator
1	Sorghum ha	alepense		Н	FACU	8						
2	Acer saccha	arinum		T	FACU-	10						
4	Acer negun	do		Т	FACW-	11						
5						12						
7						14						
Per	cent of Don	ninant Speci	es that are OBL, FACW or	FAC (excluding	FAC-): 50	)%						
Rei	marks:	Farmed										
HY	DROLOG	Y										
Fiel	Recorde	d Data (deso Stream, La Aerial Phot Other ded data ava ions: Inface Water: ee Water in F turated Soil:	vribe in Remarks) ke, or Tide Gauge ographs ailable Pit: <u>N/A</u>	(In.) (In.) (In.)	nd Hydrolog rimary Indica Inunc Satu Wate Drift Drift Drair	y Indicat ators: dated rated in I er Marks Lines ment De nage Pat	tors: Upper 12 inc posits terns in Wet	thes lands		dary Indicators (2 Oxidized Root Water-Stained Local Soil Surv FAC-Neutral Te Other (explain i	or more requ Channels in L Leaves ey Data est in remarks)	<i>uired):</i> Jpper 12"
Rei	narks											
												<b>—</b>
SO	ILS								W	ater color is <b>⊟cl</b> e	ear ⊡brow	rn ∏oily
<b>SO</b> Maj Tax	ILS o Unit Name onomy (Su	e (Series and bgroup):	d Phase): Greenston sil	ty clay loam, 5 t	o 9 percent			Drainage Class Field Observa	W s: some	ater color is Cle what poorly Confirm Mapped T	ear ⊡brow	rn ∏oily Circle s <u>No</u>
SO Maj Tax Prof	ILS o Unit Name onomy (Su ile Descriptio	e (Series and bgroup): n:	d Phase): <u>Greenston sil</u>	ty clay loam, 5 t	o 9 percent			Drainage Class Field Observa	W :: some ations (	ater color is ⊡Cle ewhat poorly Confirm Mapped T	ear ⊡brow	rn ⊡oily Circle s <u>No</u>
SO Maj Tax Prof	ILS D Unit Name onomy (Su ile Descriptio	e (Series and bgroup): n: Horizon	d Phase):Greenston sil	ty clay loam, 5 t	o 9 percent		Mottle	Drainage Class Field Observa	W s: some ations (	ater color is Cle ewhat poorly Confirm Mapped T	ype? Yes	rn □oily Circle S <u>No</u>
SO Maj Tax Prof Dep	ILS o Unit Name onomy (Su ile Descriptio th (inches) 2	e (Series and bgroup): n: Horizon	d Phase):Greenston sil 	ty clay loam, 5 t	o 9 percent Mottle Colors Munsell Moist)		Mottle	Drainage Class Field Observa e Abundance/ ze/Contrast	W ations C	ater color is Cle ewhat poorly Confirm Mapped T Texture, Concreti	ear Dbrow	rn ⊡oily Circle s <u>No</u> etc.
SO Maj Tax Prof Dep 0-1: 12-:	ILS o Unit Namo onomy (Su ile Descriptio th (inches) 2 24	e (Series and bgroup): n: Horizon	d Phase):Greenston sil Matrix Color (Munsell Moist) 10 YR 2/1 10 YR 2/1	ty clay loam, 5 t	o 9 percent Mottle Colors Munsell Moist) 4		Mottle Siz	Drainage Class Field Observa e Abundance/ ze/Contrast	W ations C SL SL	ater color is ⊡Cle ewhat poorly Confirm Mapped T Texture, Concreti	ear Dbrow ype? Yes	rn ⊡oily Circle s <u>No</u> etc.
SO Maj Tax Prof Dep 0-1: 12-:	ILS o Unit Name onomy (Su ile Descriptio th (inches) 2 24	e (Series and bgroup): n: Horizon	Matrix Color (Munsell Moist) 10 YR 2/1 10 YR 2/1	ty clay loam, 5 t	o 9 percent Nottle Colors Munsell Moist) 4		Mottle Siz	Drainage Class Field Observa e Abundance/ xe/Contrast	W ations ( SL SL	ater color is ⊡Cle ewhat poorly Confirm Mapped T Texture, Concreti	ear Dbrow	rn ⊡oily Circle s <u>No</u> etc.
SO Maj Tax Prof 0-1: 12-:	ILS o Unit Namo onomy (Su ile Descriptio th (inches) 2 24	e (Series and bgroup): n: Horizon	Matrix Color (Munsell Moist) 10 YR 2/1 10 YR 2/1	ty clay loam, 5 t (1 (1 10 YR 4/	o 9 percent Mottle Colors Munsell Moist) 4		Mottile Siz	Drainage Class Field Observa a Abundance/ ce/Contrast	W ations C SL SL	ater color is ⊡Cle ewhat poorly Confirm Mapped T Texture, Concreti	ear Dbrow	rn ⊡oily Circle S <u>No</u> etc.
SO Maµ Tax Dep 0-1: 12- Hyc	ILS D Unit Nam- onomy (Su ile Descriptio th (inches) 2 24 tric Soil Ind Histosol Histic Ep Sulfidic C Aquic Marks:	e (Series and bgroup): n: Horizon icators: iicators: iipedon Ddor Disture Regir	d Phase):Greenston sil 	ty clay loam, 5 t (I 10 YR 4/ Reducing Co Gleyed or Lo Concretions Organic Strea	0 9 percent Mottle Colors Munsell Moist) 4 4 nditions w-Chroma C aking in San	colors dy Soils	5%	Drainage Class Field Observa a Abundance/ te/Contrast High Organic Co Listed on Nationa Listed on Local H Other (explain in	SL SL SL Ntent ir al Hydric S remark	ater color is □Cle ewhat poorly Confirm Mapped T Texture, Concretion Texture, Concretion Surface Layer in ic Soils List Soils List Soils List (s)	ear Dbrow	n ⊡oily Circle s <u>No</u> etc.
SO May Tax Prof Dep 0-1: 12-: 12-: Hycc B B Rer WE	ILS D Unit Nam- onomy (Su ile Descriptio th (inches) 2 24 dric Soil Ind Histosol Histic Ep Sulfidic C Aquic Mo marks: TLAND E	e (Series and bgroup): n: Horizon icators: ipedon Ddor pisture Regir	d Phase): Greenston sil Matrix Color (Munsell Moist) 10 YR 2/1 10 YR 2/1 	ty clay loam, 5 t (I 10 YR 4/ Reducing Co Gleyed or Lo Concretions Organic Strea	o 9 percent Mottle Colors Munsell Moist) 4 additions w-Chroma C aking in San	Colors	Mottle Siz	Drainage Class Field Observa a Abundance/ te/Contrast High Organic Co Listed on Nationa Listed on Local H Other (explain in	SL SL SL Ntent ir al Hydric S remark	ater color is □Cle ewhat poorly Confirm Mapped T Texture, Concretion Texture, Concretion Surface Layer in ic Soils List Soils List Soils List (s)	ear Dbrow	rn □oily Circle s <u>No</u> etc.
SO Maj Tax Prof Dep 0-1: 12-: 12-: 12-: 12-: 12-: 12-: 12-: 1	ILS D Unit Namonomy (Su Dile Descriptio D (Suite Description D (Suite Description D (Suite Description) D (Sui	e (Series and bgroup): n: Horizon icators: bipedon Ddor bisture Regir DETERMIN egetation Pre- logy Present?	A Phase): Greenston sil	ty clay loam, 5 t (( 10 YR 4/ 10 YR 4/ Reducing Co Gleyed or Lo Concretions Organic Streat Organic Streat Yes X	o 9 percent Mottle Colors Munsell Moist) 4 4 aditions w-Chroma C aking in San No Is th No No	colors dy Soils	Mottll Siz	Drainage Class Field Observa e Abundance/ te/Contrast High Organic Co Listed on Nationa Listed on Local H Other (explain in	SL SL SL SL SL SL SL SL SL SL SL SL SL S	ater color is Cle ewhat poorly Confirm Mapped T Texture, Concreti Texture, Concreti Soils List Soils List Soils List (s)	ear Dbrow	rn □oily
SO Maı Tax Prof Depp 0-11 12-: 12-: Hyce Rer Rer Rer Rer Rer Rer Kur Kur Kur Kur Kur Kur Kur Kur Kur Ku	ILS D Unit Name onomy (Su ile Descriptio th (inches) 2 24 Iric Soil Ind Histosol Histic Ep Sulfidic C Aquic Mo marks: TLAND E Irophytic Ve tland Hydro Iric Soils Pr marks/Expla- tionships: tland (□ab acency is sl	e (Series and bgroup): n: Horizon icators: bipedon Ddor Disture Regir DETERMIN Degetation Pre- ain significant ain significant uts is adja hown by adja	A Phase): Greenston sil	ty clay loam, 5 t ((1) 10 YR 4/ 10 YR 4/ 1	o 9 percent Mottle Colors Munsell Moist) 4 anditions w-Chroma C aking in San No Is th No No	colors dy Soils	Mottle Siz	Drainage Class Field Observa	W	ater color is Cle ewhat poorly Confirm Mapped T Texture, Concreti Texture, Concreti Soils List Soils List Soils List Soils List Soils List Soils List Soils List	ear Dbrow	rnoily Circle etc.

## DATA FORM **ROUTINE WETLAND DETERMINATION**

(1987 COE Wetlands Delineation Manual)

Project Site: Applicant/Ow Investigator: Do Normal Cirr Is the site sign Is Area a Pote	vner: Pi C cumstances ificantly distuntial Problem	otts Road JDR per-Wind Architects, Inc. hris Thomas & Kevin Slate exist on the site? Irbed (Atypical Situation)? o Area? ( <i>if needed, explain on</i>	s reverse)	Yes		No No No	Date: County: State: Community ID: Transect ID: Plot ID:	- - -	8-16-07 Jackson MO PEM 4-1 DP# 1-In		
VECETATIO			, <u> </u>					-			
Dominant Plant S	Species		Stratum	Indicator	Domina	nt Plant Spec	ies			Stratum	Indicator
1 Ambrosia a	rtemisifolia		Н	FACU	8						
2 Polygonum 3 Carex lupul	nydropiper ina		H	OBL	9 10						
4 Cyperus es	culentus		H	FACW	11						
6 7	ocomea			ODE	13						
7 Percent of Dor	minant Speci	es that are OBL_EACW or EA	C (excluding )	FAC-)· 80	14						
Remarks:		,									
HYDROLOG	iΥ										
Recorde	d Data (desc Stream, La Aerial Phot Other rded data ava tions: urface Water: ee Water in P aturated Soil:	rribe in Remarks) ke, or Tide Gauge ographs ailable Pit:(In. (In.	)	hd Hydrolog rimary Indica Inunc Satu Wate Drift I Sedir Drain	y Indicato ators: dated rated in U r Marks Lines ment Dep lage Patte	ors: oper 12 inc osits erns in Wet	ches lands		dary Indicators (2 d Oxidized Root C Water-Stained L Local Soil Surve FAC-Neutral Te Other (explain ir	or more requ Channels in U Leaves Ly Data St n remarks)	<i>iired):</i> Jpper 12"
Remarks											
								W	ater color is □cle	ar ∏brow	n ∏oily
SOILS							T	W	′ater color is <b>⊟cle</b> a	ar ∏brow	n <b>⊟</b> oily
SOILS Map Unit Nam Taxonomy (Su	e (Series and bgroup):	d Phase):Sharpsburg silt   	oam, 5 to 9 p	ercent			Drainage Class Field Observa	W : mode ations (	erately well drained	ar ⊡brow I rpe? Yes	n ⊡oily <i>Circle</i> <u>No</u>
SOILS Map Unit Nam Taxonomy (Su Profile Descriptio	e (Series and Ibgroup):	d Phase): Sharpsburg silt   	oam, 5 to 9 p	ercent		Mottile	Drainage Class Field Observa	W : mode ations (	ater color is	ar ⊡brow I /pe? Yes	n _oily Circle <u>No</u>
SOILS Map Unit Nam Taxonomy (Su Profile Descriptio Depth (inches)	e (Series and bgroup): n: Horizon	d Phase): Sharpsburg silt	pam, 5 to 9 p	ercent Mottle Colors Aunsell Moist)		Mottle	Drainage Class Field Observa Abundance/ ze/Contrast	W ations (	ater color is □clea erately well drained Confirm Mapped Ty Texture, Concretio	ar ⊡brow d rpe? Yes ns, Structure,	n □oily Circle <u>No</u> etc.
SOILS Map Unit Nam Taxonomy (Su Profile Descriptio Depth (inches) 0-6 6-15	e (Series and bgroup): n: Horizon	d Phase): Sharpsburg silt I Matrix Color (Munsell Moist) 10YR 3/1 7 VR 2 5/1	pam, 5 to 9 p	ercent Mottle Colors Munsell Moist)		Mottle Siz	Drainage Class Field Observa Abundance/ e/Contrast	W ations C SL SI	ater color is □clea erately well drained Confirm Mapped Ty Texture, Concretio	ar Drow	n □oily Circle No etc.
SOILS Map Unit Nam Taxonomy (Su Profile Descriptio Depth (inches) 0-6 6-15	e (Series and Ibgroup): n: Horizon	d Phase): <u>Sharpsburg silt l</u> Matrix Color (Munsell Moist) 10YR 3/1 7 YR 2.5/1	pam, 5 to 9 p	ercent Nottle Colors Nunsell Moist) /2		Mottle Siz 5%	Drainage Class Field Observa e Abundance/ æ/Contrast	W ations ( SL SL	ater color is □clea erately well drained Confirm Mapped Ty Texture, Concretio	ar Drow	n □oily Circle No etc.
SOILS Map Unit Nam Taxonomy (Su Profile Descriptio Depth (inches) 0-6 6-15	e (Series and bgroup): n: Horizon	d Phase): Sharpsburg silt   Matrix Color (Munsell Moist) 10YR 3/1 7 YR 2.5/1	pam, 5 to 9 p	ercent Mottle Colors Munsell Moist) /2		Mottle Siz 5%	Drainage Class Field Observa Abundance/ e/Contrast	W ations ( SL SL	ater color is □clea erately well drained Confirm Mapped Ty Texture, Concretio	ar Drow	n □oily Circle No etc.
SOILS Map Unit Nam Taxonomy (Su Profile Descriptio Depth (inches) 0-6 6-15 Hydric Soil Ind Histosol Histosol Histosol Sulfidic ( Aquic Mathematic Ep Sulfidic ( Remarks:	e (Series and bgroup): n: Horizon icators: bipedon Odor oisture Regir	d Phase): Sharpsburg silt   Matrix Color (Munsell Moist) 10YR 3/1 7 YR 2.5/1 N N N N N N N N N N N N N	r (() 7.5 YR 3 7.5 YR 3 Reducing Coi Gleyed or Low Concretions Drganic Strea	ercent Mottle Colors Munsell Moist) /2 nditions w-Chroma C aking in Sand	olors dy Soils	Mottle Siz 5%	Drainage Class Field Observa Abundance/ e/Contrast High Organic Co Listed on Nation Listed on Local H Other (explain in	W ations ( SL SL SL Intent ir al Hydr Hydric S	ater color is ⊡clea erately well drained Confirm Mapped Ty Texture, Concretio Texture, Concretio n Surface Layer in ic Soils List Soils List Soils List ks)	ar Drow	n ⊡oily Circle No etc.
SOILS Map Unit Nam Taxonomy (Su Profile Descriptio Depth (inches) 0-6 6-15 Hydric Soil Ind Histic Ep Sulfidic ( Aquic Marks: WETLAND	e (Series and bgroup): n: Horizon iicators: bipedon Odor oisture Regir	d Phase): <u>Sharpsburg silt i</u> Matrix Color (Munsell Moist) 10YR 3/1 7 YR 2.5/1	Reducing Con Concretions Drganic Stree	ercent Mottle Colors Aunsell Moist) /2 /2 nditions w-Chroma C aking in Sand	olors	Mottle Siz 5%	Drainage Class Field Observa a Abundance/ te/Contrast High Organic Co Listed on Nation Listed on Local H Other (explain in	W ations ( SL SL Ntent in al Hydr tydric S remar	ater color is ⊡clea erately well drained Confirm Mapped Ty Texture, Concretio Texture, Concretio Soils List Soils List Soils List Soils List	ar Drow	n ⊡oily Circle No etc.
SOILS Map Unit Nam Taxonomy (Su Profile Descriptio Depth (inches) 0-6 6-15 Hydric Soil Ind Histosol Histic Eg Sulfidic ( Aquic Marks: WETLAND I Hydrophytic Va Wetland Hydrc Hydric Soils Pr	e (Series and bgroup): n: Horizon icators: bipedon Odor oisture Regir DETERMIN egetation Pre- blogy Present?	A Phase): Sharpsburg silt   Matrix Color (Munsell Moist) 10YR 3/1 7 YR 2.5/1 N N N N M M M M M M M M M M M M M	Parm, 5 to 9 p	ercent Mottle Colors Munsell Moist) /2 /2 nditions w-Chroma C aking in Sand aking in Sand	olors dy Soils	Mottle Siz 5%	Drainage Class Field Observa Abundance/ ze/Contrast High Organic Co Listed on Nation Listed on Local H Other (explain in	W i: modulations ( SL SL SL Intent in Intent in	erately well drained Confirm Mapped Ty Texture, Concretio Texture, Concretio Soils List Soils List Soils List Ks)	ar Drow	n ⊡oily Circle No etc.
SOILS Map Unit Nam Taxonomy (Su Profile Descriptio Depth (inches) 0-6 6-15 Hydric Soil Ind Histic Ep Sulfidic ( Aquic Mi Remarks: WETLAND I Hydrophytic Va Wetland Hydro Hydric Soils Pr Remarks/Expla	e (Series and bgroup): n: Horizon iicators: bipedon Odor oisture Regir DETERMIN egetation Pre- ology Present? ain significan	ATION	Parm, 5 to 9 p	ercent Mottle Colors Aunsell Moist) /2 /2 nditions w-Chroma C aking in Sand Aking in Sand No Is the No No	olors dy Soils his Sampl	Mottle Siz 5%	Drainage Class Field Observa a Abundance/ te/Contrast High Organic Co Listed on Nation Listed on Local H Other (explain in Vithin a Wetland?	W i: mod ations ( SL SL SL I I I I I I I I I I I I I	erately well drained Confirm Mapped Ty Texture, Concretio Texture, Concretio Soils List Soils List Soils List Soils List Soils List Soils List Soils List	ar Drow	n ⊡oily Circle No etc. et
SOILS Map Unit Nam Taxonomy (Su Profile Descriptio Depth (inches) 0-6 6-15 Hydric Soil Ind Histosol Histic Ep Sulfidic ( Aquic Me Remarks: WETLAND I Hydrophytic Ve Wetland Hydroc Hydric Soils Pr Remarks/Expla Remarks/Expla Adjacency is s	e (Series and bgroup): IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	ATION Attion Att	pam, 5 to 9 p	ercent Mottle Colors Munsell Moist) /2 nditions w-Chroma C aking in Sand No Is th No Is th No No	olors dy Soils	Mottle Siz 5%	Drainage Class Field Observa	W  i: modu ations (  SL SL SL I I I I I I I I I I I I I I I	erately well drained Confirm Mapped Ty Texture, Concretio	ar Drow	noily

Pro Ap	oject Site: plicant/Ow	ner: Pi	otts Road JDR per-Wind Architects, Inc.					Date: County:	8-16-07 Jackson		
	Normal Cire		evist on the site?			°   L					
ls ti	ne site signi	ficantly distu	rbed (Atypical Situation)?	-		s 🗵	No No	Transect ID:	F E IVI 4-2		
ls A	rea a Poter	ntial Problem	Area? (if needed, explain on re	verse)	□ Ye	s 🗵	No	Plot ID:	DP# 2-Out		
VF	GETATIO	N									
Don	ninant Plant S	pecies		Stratum	Indicator	Domi	nant Plant Spe	cies		Stratum	Indicator
1	Polygonum	pennsylvanicu	m	Н	FACW	8					
2	Cyperus es Ambrosia a	culentus temisifolia		Н Н	FACU	9					
4		termonolia			17.00	11					
5 6						12					
7						14					
Per	cent of Don	ninant Specie	es that are OBL, FACW or FAC	(excluding F	FAC-): 6	7%					
Rei	marks:										
HY	DROLOG	Y									
	Recorde	d Data (desc	ribe in Remarks)	Wetlan	nd Hydrolog	gy Indica	ators:				
		Stream, La	ke, or Tide Gauge	Pri	imary Indic	ators:			Secondary Indicators (2	or more requ	ired):
		Aerial Phot Other	ographs		Inun Satu	dated irated in	l Inner 12 in	ches	Oxidized Root C	channels in L	Jpper 12"
	No recor	ded data ava	ailable		Wate	er Mark	S	5105	Local Soil Surve	ey Data	
Fie	d Observat	ions:	<i>a</i> )		Drift	Lines			FAC-Neutral Te	st	
	Depth of Su	rface Water:	Pit: (In.)		Sedi	iment D	eposits	tlande	Other (explain in	n remarks)	
, I	Depth to Sa	turated Soil:	(III.) (III.)			nagere					
Rei	marks										
Nei	nains										
									Water color is Cle	ar ∐brow	n ⊟oily
SO	ILS							1			
Ma	p Unit Nam	e (Series and	d Phase):					Drainage Class			Circle
Тах	conomy (Su	bgroup):						Field Observa	ations Confirm Mapped Ty	/pe? Yes	No
Prof	ile Descriptio	n:									
Dep	th (inches)	Horizon	Matrix Color (Munsell Moist)	M (M	Iottle Colors Iunsell Moist	)	Mottl Si	e Abundance/ ze/Contrast	Texture, Concretio	ns. Structure.	etc.
0-1	0		10 YR 3-1			,			· · · · · · · · · · · · · · · · · · ·		
-			7 YR 2.5/1	7.5 YR 3.2	2		5%		SCL		
Hyd	dric Soil Ind	icators:									
	Histosol	inadan	Re Re	educing Con	ditions	Coloro	_ <u>_</u>	High Organic Co	ntent in Surface Layer in	Sandy Soils	
H	Sulfidic C	Ddor		oncretions	v-Chioma (	201015		Listed on Local H	Ivdric Soils List		
	Aquic Mo	oisture Regin	ne 🔲 Oi	rganic Strea	king in Sar	ndy Soils	s 🗌	Other (explain in	remarks)		
Rei	marks:										
WE		DETERMIN	ATION								
Hyd	drophytic Ve	egetation Pre	esent? Ye	es 🗌	No Is t	his San	npling Point V	Vithin a Wetland?	🔲 Yes 🖾 N	lo	
We	tland Hydro	logy Present		es 🛛	No						
Нус	and Solis Pr	esent?	<u>K</u> Ye	±s 🔟	INO						
Rei	marks/Expla	ain significan	t nexus (pollution filtration, flood	water reten	tion, feedir	ng/nestir	ng/spawning	ground for TNW s	pecies, other biological, p	hysical or ch	emical
La	uonsnips: cks sedimi	entation as	compared to IN-point. Pote	ntially cror	oped durir	na drv v	vears.				
					1.2.2. 0.011	J,	,				
\A/-	tland (Det	uto io 🗖 or"-	agent ta) tributor: "								
Adj	acency is sl	hown by 🗌 d	liscrete hydrologic connection (e	xplain):							
			cological connection (explain):	u).							
		1 156	parated by Derrivodiner (explain								

Ap Inv	oject Site: plicant/Owner estigator:	r: <u>Pi</u> C	otts Road JDR per-Wind Architects, Inc. pris Thomas & Kevin Slates	3				Date: County: State:	8-15-07 Jackson MO		
Do	Normal Circum	nstances	exist on the site?	,	X Yes		No	Community ID:	 		
ls t	ne site significa	antly distu	rbed (Atypical Situation)?	-	□ Yes		No	Transect ID:	1001-1		
ls A	rea a Potential	I Problem	Area? (if needed, explain on r	everse)	□ Yes	$\boxtimes$	No	Plot ID:	DP# 1-In		
VF	GETATION										
Don	ninant Plant Speci	ies		Stratum	Indicator	Domina	ant Plant Spec	ies		Stratum	Indicator
1	Salix nigra			S	OBL	8	•				
2	Populus deltoide Typha latifolia	es		S H	FAC+ OBL	9 10					
4	Cyperus esculer	ntus		Н	FACW	11					
5 6						12					
7						14					
Per Re	marks:	ant Speci	es that are OBL, FACW or FAC	(excluding I	-AC-): 75	9%					
1101	narks.										
HY	DROLOGY										
	Recorded Da	ata (desc	ribe in Remarks)	Wetlar	nd Hydrolog	y Indicat	ors:				
		ream, La	ke, or Tide Gauge	Pr	imary Indica	ntors:		t i i i i i i i i i i i i i i i i i i i	Secondary Indicators (2 c	or more requ	lired):
		ther	ographs		Satur	ated in I	Upper 12 inc	hes	Water-Stained L	eaves	
l	No recorded	d data ava	ilable		Wate	r Marks			Local Soil Surve	y Data	
Fie	ld Observations	s: ce Water:	2 (ln)		_ Drift   Sedir	Lines nent Dei	nosits	-	FAC-Neutral Les     Other (explain in	st remarks)	
	Depth to Free V	Nater in F	Pit: 5 (In.)	Ť	Drain	age Pat	terns in Wet	lands		Tomarkoj	
	Depth to Satura	ated Soil:	(In.)								
Re	marks										
									Water color is Dclea	ar Dhrow	n Doily
SO	II S										
SC								Desire en Olasse			
SC Ma Tax	PILS p Unit Name (S conomy (Subarc	Series and oup):	d Phase): Sharpsburg silt k	oam, 5 to 9 p	ercent slope	S		Drainage Class: Field Observat	moderately well	pe? Yes	Circle
SC Ma Tax	PILS p Unit Name (S conomy (Subgro	Series and oup):	d Phase): <u>Sharpsburg silt k</u>	oam, 5 to 9 p	ercent slope	S		Drainage Class: Field Observat	moderately well ions Confirm Mapped Ty	pe? Yes	Circle
SC Ma Tax Prot	Unit Name (S conomy (Subgro ile Description:	Series and oup):	d Phase):Sharpsburg silt lo	oam, 5 to 9 pr	ercent slope	S	Mottle	Drainage Class: Field Observat	moderately well ions Confirm Mapped Ty	pe? Yes	Circle <u>No</u>
SC Ma Tax Prot	Unit Name (S conomy (Subgro ille Description: th (inches)	Series and oup): Horizon	Phase): Sharpsburg silt lo Matrix Color (Munsell Moist)	pam, 5 to 9 pr	ercent slope fottle Colors funsell Moist)	25	Mottle	Drainage Class: Field Observat e Abundance/ te/Contrast	moderately well ions Confirm Mapped Ty Texture, Concretion	pe? Yes	Circle
Ma Tax Prof Dep 0-1	ILS p Unit Name (S conomy (Subgro ille Description: th (inches)   F 0   -	Series and oup): Horizon	d Phase): Sharpsburg silt k Matrix Color (Munsell Moist) 10YR 2/1 10 YR 3/2	0am, 5 to 9 pr (N 10 YR 4/4	ercent slope fottle Colors lunsell Moist)	2S	Mottle Siz	Drainage Class: Field Observat e Abundance/ re/Contrast	moderately well ions Confirm Mapped Ty Texture, Concretion	pe? Yes	Circle No
SC Ma Tax Prof Dep 0-1 10-1	ILS p Unit Name (S conomy (Subgro ile Description: th (inches)   + 0   - -	Series and oup): Horizon	Matrix Color (Munsell Moist) 10YR 2/1 10 YR 3/2	Nam, 5 to 9 pr N (N 10 YR 4/4	ercent slope fottle Colors funsell Moist)	S	Mottle Siz	Drainage Class: Field Observat e Abundance/ ce/Contrast	moderately well ions Confirm Mapped Ty Texture, Concretion	pe? Yes	Circle
SC Ma Tax Prof Dep 0-1 10-1	PUnit Name (S conomy (Subgro ille Description: th (inches) + 0 -	Series and oup): Horizon	Matrix Color (Munsell Moist) 10 YR 2/1 10 YR 3/2	nam, 5 to 9 pr (N (N 10 YR 4/4	ercent slope fottle Colors lunsell Moist)	IS	Mottle Siz	Drainage Class: Field Observat a Abundance/ te/Contrast	moderately well ions Confirm Mapped Ty Texture, Concretion	pe? Yes	Circle No
SC Ma Tax Prot Dep 0-1 10-1 Hyd	PLS p Unit Name (S conomy (Subgro ile Description: th (inches) + 0 - - - - - - - - - - - - -	Series and oup): Horizon	Matrix Color (Munsell Moist) 10 YR 2/1 10 YR 3/2	nam, 5 to 9 pr	ercent slope fottle Colors lunsell Moist)	S	Mottle Siz	Drainage Class: Field Observat e Abundance/ ce/Contrast	moderately well ions Confirm Mapped Ty Texture, Concretion	pe? Yes	Circle
SC Ma Ta> Prof 0-1 10-1 Hyo	PULS p Unit Name (S conomy (Subgro ile Description: th (inches) + 0 - - - - - - - - - - - - -	Geries and oup): Horizon	A Phase): Sharpsburg silt lo Matrix Color (Munsell Moist) 10 YR 2/1 10 YR 3/2 	nam, 5 to 9 pr (M 10 YR 4/4 Reducing Cor	Antie Colors Iunsell Moist)	S	Mottle Siz	Drainage Class: Field Observat	moderately well ions Confirm Mapped Ty Texture, Concretion	pe? Yes	Circle
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SC Ma Ta> Prol 0-11 10-1 Hyc U U U U U U U U U U U U U U U U U U U	ILS p Unit Name (S conomy (Subgro ile Description: th (inches)   + 0 tric Soil Indicate Histosol Histosol Histosol Aquic Moistu marks: ETLAND DET drophytic Veget tland Hydrology	Series and oup): Horizon cors: don or ure Regir FERMIN tation Pre y Presen	A Phase): Sharpsburg silt le Matrix Color (Munsell Moist) 10 YR 2/1 10 YR 3/2 ne ATION Sent? ?	Ann, 5 to 9 pr	Additions v-Chroma C king in Sand	olors dy Soils	Mottle Siz	Drainage Class: Field Observat	moderately well tions Confirm Mapped Ty Texture, Concretion Texture, Concretion ttent in Surface Layer in S I Hydric Soils List ydric Soils List remarks) Yes	pe? Yes	
SC Ma Tay Prod 0-11 10-1 10-1 10-1 10-1 10-1 10-1 10-	PULS p Unit Name (S conomy (Subgro ile Description: th (inches)   + 0	Series and oup): Horizon ors: don or ure Regir FERMIN tation Presen ont?	A Phase): Sharpsburg silt le Matrix Color (Munsell Moist) 10 YR 2/1 10 YR 3/2 Matrix Color (Munsell Moist) 10 YR 3/2 Matrix Color (Munsell Moist) 10 YR 2/1 10 YR 3/2 Matrix Color (Munsell Moist) 10 YR 3/2 Matrix Color (Munsell Moist) Matrix Color (Munsell Moist) (Munsell Moist) (Munsel	Arrow Store	Antile Colors Iunsell Moist) Additions y-Chroma C king in Sand No Is th No No	olors dy Soils	Mottle Siz	Drainage Class: Field Observat	moderately well ions Confirm Mapped Ty Texture, Concretion Texture, Concretion I Hydric Soils List ydric Soils List remarks) Yes	pe? Yes	
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SC Ma Tax Prot 0-1 10-1 10-1 Hyd B B B Hyd We Hyd We Hyd We Reiz rela	PULS p Unit Name (S conomy (Subgro ile Description: th (inches) b 0 conomy (Subgro th (inches) conomy (Subgro th (inches) conomy (Subfridic Odo Aquic Moistumarks: conomy (Subfridic Odo and the state of the state o	Series and oup): Horizon fors: don or ure Regir <b>TERMIN</b> tation Pre y Presen ent? significan	A Phase): Sharpsburg silt lo Matrix Color (Munsell Moist) 10 YR 2/1 10 YR 3/2	A A A A A A A A A A A A A A A A A A A	Additions v-Chroma C king in Sand No Is th No No	olors dy Soils	Mottle Siz	Drainage Class: Field Observat	moderately well ions Confirm Mapped Ty Texture, Concretion Texture, Concretion I Hydric Soils List ydric Soils List ydric Soils List remarks) Yes \_ No ecies, other biological, pf	pe? Yes	Circle No etc.
SC Ma Tax Prot 0-1 104 Hyc Hyc Hyc Hyc Hyc Rea rela	ILS p Unit Name (S conomy (Subgro ile Description: th (inches)   + 0	Series and oup): Horizon tors: don or ure Regir r tation Pre y Presen ent?	A Phase): Sharpsburg silt lo Matrix Color (Munsell Moist) 10 YR 2/1 10 YR 3/2 ne ATION sent? ? Matrix Color (Munsell Moist) 0 YR 3/2 C C C C C C C C C C C C	Arrow Store Provide Arrow Store Provide Arrow Store Provide Arrow Store Arrow	Anditicons V-Chroma C king in Sand No Is th No No	olors dy Soils	Mottle Siz	Drainage Class: Field Observat	moderately well ions Confirm Mapped Ty Texture, Concretion Texture, Concretion itent in Surface Layer in S I Hydric Soils List ydric Soils List remarks) Yes \ No ecies, other biological, pl	pe? Yes	Circle <u>No</u> etc. etc. etc. etc.
SC Ma Tax Prot 0-1 10-1 10-1 10-1 Hy(C C C Ref Ref Ref Ref Ref Ref Ref Ref SC SC SC SC SC SC SC SC SC SC SC SC SC	ILS p Unit Name (S conomy (Subgro ile Description: th (inches)   0	Series and oup): Horizon cors: don or ure Regir reremin tation Pre y Presen ant?	A Phase): Sharpsburg silt lo Matrix Color (Munsell Moist) 10 YR 3/2 10 YR 3/2 ne ATION sent? ? Matrix Color (Munsell Moist) 10 YR 3/2 C C C C C C C C C C C C C	Area and a second secon	Additions v-Chroma C king in Sand No Is th No No	olors dy Soils	Mottle Siz	Drainage Class: Field Observat	moderately well ions Confirm Mapped Ty Texture, Concretion Texture, Concretion Texture, Concretion tent in Surface Layer in S Hydric Soils List ydric Soils List remarks) Yes \_ No ecies, other biological, pl	pe? Yes	Circle <u>No</u> etc. etc. etc. etc.
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SC Ma Tay Prol 0-1 10-1 10-1 10-1 Hy(c) Ref Hy(c) Ref Hy(c) Ref Hy(c) Ref Hy(c) Ref Hy(c) Ref Hy(c) Hy	ILS p Unit Name (S conomy (Subgro ile Description: th (inches)   0 dric Soil Indicate Histosol Histic Epipee Sulfidic Odo Aquic Moistu marks: ETLAND DET Tophytic Veget thand Hydrology dric Soils Prese marks/Explain s ationships: tland (⊠abuts acency is show	Series and oup): Horizon Cors: don or ure Regir TERMIN tation Pre y Presen ent? significant significant	A Phase): Sharpsburg silt le Matrix Color (Munsell Moist) 10YR 2/1 10 YR 3/2 ne ATION Sent? ? Matrix Color (Munsell Moist) 10YR 2/1 10 YR 3/2 ATION Sent? ? Matrix Color (Munsell Moist) C C C C C C C C C C C C C	Arrow Sector Stream Sector Str	Actile Colors Iunsell Moist)	olors dy Soils	Mottle Siz	Drainage Class: Field Observat	moderately well ions Confirm Mapped Ty Texture, Concretion Texture, Concretion tent in Surface Layer in S Hydric Soils List ydric Soils List remarks) Yes \[ Noise Noi	pe? Yes	Circle No etc.
SC Ma Tay Prol 0-1 10-1 10-1 10-1 Rea Rea Hyo WE Hyo We Hyo We Adj	ILS p Unit Name (S conomy (Subgro ile Description: th (inches)   + 0 dric Soil Indicate Histosol Histic Epipee Sulfidic Odo Aquic Moistu marks: ETLAND DET trophytic Veget tland Hydrology dric Soils Prese marks/Explain s stionships: tland (⊠abuts acency is show	Series and oup): Horizon Cors: don or ure Regir FERMIN tation Pre y Presen y Presen significan	ATION Sent?	Array Sto 9 pr (No. 10 YR 4/4 10 YR 4/4 Reducing Corr Beyed or Low Concretions Organic Stread (es (es) d water retern explain):	Actile Colors funsell Moist) funditions v-Chroma C king in Sand No Is the No No	olors dy Soils	Mottle Siz	Drainage Class: Field Observat	moderately well ions Confirm Mapped Ty Texture, Concretion Texture, Concretion itent in Surface Layer in S Hydric Soils List ydric Soils List remarks) Ves  Ne ecies, other biological, pl	pe? Yes	Circle No etc.

## DATA FORM **ROUTINE WETLAND DETERMINATION**

(1987 COE Wetlands Delineation Manual)

Project Site: Applicant/Owner: Investigator:	Bot Pipe Chr	ts Road JDR er-Wind Architects, Inc. is Thomas & Kevin Slates					Date: County: State:	8-16-07 Jackson MO		
Do Normal Circumstan Is the site significantly	nces ex disturb	kist on the site? bed (Atypical Situation)?		Yes		No No	Community ID: Transect ID:	PSS 1 -2		
Is Area a Potential Pro	blem A	Area? (if needed, explain on re	verse)	Yes	$\boxtimes$	No	Plot ID:	DP# 2-Out		
VEGETATION										· · · · · · · · · · · · · · · · · · ·
Dominant Plant Species			Stratum H	Indicator	Dominar 8	nt Plant Speci	es		Stratum	Indicator
2 Bromus tectorum	onioum		H		9					
4 Cyperus esculentus	anicum		H	FACW	10					
6					12					
7 Percent of Dominant 9	Snecies	that are OBL_EACW or EAC (	excluding F	AC-): 50	14 %					
Remarks: Excava	ted hills	side		- ,						
HYDROLOGY										
Recorded Data     Strear     Aerial     Other     No recorded da     Field Observations:     Depth of Surface W     Depth to Free Wate     Depth to Saturated	(descril n, Lake Photog a availa /ater: er in Pit Soil:	be in Remarks) e, or Tide Gauge graphs able ::: <u>N/A (In.)</u> <u>N/A (In.)</u>	Wetlan Pri	d Hydrology imary Indica Inund Satur Wate Drift L Sedin Drain	/ Indicato tors: ated ated in U Marks ines nent Dep age Patte	rs: pper 12 inc osits erns in Wetl	hes [	Secondary Indicators ( CXI Oxidized Roo Water-Stainee Local Soil Sui FAC-Neutral Other (explain	2 or more requ t Channels in U d Leaves rvey Data Test n in remarks)	<i>iired):</i> Jpper 12"
<i>Remarks</i> No hyd	rology							Water color is □c	lear ⊡brow	n ∏oily
SOILS										
Map Unit Name (Serie Taxonomy (Subgroup	es and F	Phase): Sharpsburg silt loa	m, 5 to 9 pe	ercent slope	S		Drainage Class: Field Observat	moderately well tions Confirm Mapped	Type? Yes	Circle <u>No</u>
Profile Description:		Matrix Color	N	lottle Colors		Mottle	Abundance/			
Depth (inches) Horiz	on	(Munsell Moist)	(M	lunsell Moist)		Siz	e/Contrast	Texture, Concre	etions, Structure,	etc.
2-12		10 YR ¾						SL		
Hydric Soil Indicators: Histosol Histic Epipedon Sulfidic Odor Aquic Moisture Remarks: Excava	Regime ted hills	e Re Side, unusual soil	educing Con eyed or Low oncretions ganic Strea	nditions v-Chroma Co king in Sanc	olors ly Soils		High Organic Con Listed on Nationa Listed on Local H Other (explain in r	atent in Surface Layer I Hydric Soils List ydric Soils List remarks)	in Sandy Soils	
WETLAND DETER	MINA	TION								
Hydrophytic Vegetatio Wetland Hydrology Pr Hydric Soils Present?	n Prese esent?	ent?	s 🛛 s 🖾 s 🗆	No Is th No No	is Sampl	ing Point W	ithin a Wetland?	Yes 🛛	No	
Remarks/Explain sign relationships: Wetland (∏abuts is [ Adjacency is shown b	]adjace / □dis	nexus (pollution filtration, flood ent to) tributary: crete hydrologic connection (ex logical connection (explain):	water reten kplain):	tion, feeding	√nesting/	ispawning g	round for TNW sp	ecies, other biological,	physical or ch	emical

_		_						_				
Pro	oject Site:	<u>Bo</u>	otts Road JDR					Date:		<u>8-16-07</u>		
Ap	plicant/Ow	ner: PI	per-wind Architects, Inc.					State:	<u> </u>			
IIIV	esilyalui.			>			1	Siale.		VIO		
Do	Normal Circ	cumstances	exist on the site?	_	Yes		No	Community ID:		PSS/PEM-1-1		
IS the	ne site signif	ricantly distu	rbed (Atypical Situation)?				NO	Plot ID:	_			
15 P	liea a Foleli		Alea? (Il needed, explain on i	everse)			INU	FIOLID.		DP# 1-In		
VE	GETATIO	N										
Dom	ninant Plant Sp	pecies		Stratum	Indicator	Dominar	nt Plant Spec	cies			Stratum	Indicator
1	Salix nigra			S	OBL	8						
2	Populus delt	ioids Ienense		S H	FAC+	9						
4	Typha latifoli	ia		H	OBL	11						
5						12						
7						14						
Per	cent of Dom	ninant Specie	es that are OBL, FACW or FAC	(excluding F	AC-): 75	%						
Rei	marks:											
HY	DROLOG	Y										
_			with a line Denser (LLA)	147 -1		a la Porte						
Fiel	No record	Stream, La Stream, La Aerial Phot Other <u>ded data ava</u> ons:	ride in Kemarks) ke, or Tide Gauge ographs ailable		imary Indica	y Indicato itors: lated rated in U r Marks ∟ines	pper 12 inc	ches		ary Indicators (2 c Oxidized Root C Water-Stained L Local Soil Surve FAC-Neutral Tes Other (explain in	or more requ Channels in L Leaves ey Data st premarks)	<i>iired):</i> Jpper 12"
	Depth to Fre Depth to Sat	e Water in F turated Soil:	Pit: (In.)		Drain	age Patte	erns in Wet	lands			i leinaiks)	
Rei	marks			I								
									Wat	ter color is <b>⊡cle</b> a	ar ∏brow	n <b>⊟</b> oily
SO	ILS							1	Wa	ter color is	ar ⊡brow	n <u></u> oily
<b>SO</b> Maj Tax	P <b>ILS</b> p Unit Name conomy (Sub	e (Series and ogroup):	d Phase): Greenton silty cla	iy loam, 5 to	9 percent			Drainage Class Field Observa	Wa somev stions Co	ter color is Clea what poorly nfirm Mapped Ty	ar ⊡brow rpe? Yes	n _oily Circle <u>No</u>
SO Maj Tax Prof	ULS p Unit Name conomy (Sub	e (Series and ogroup): n:	d Phase): Greenton silty cla	iy loam, 5 to	9 percent			Drainage Class Field Observa	Wa : somev ations Co	ter color is □clea what poorly whfirm Mapped Ty	ar ⊡brow rpe? Yes	n □oily Circle <u>No</u>
SO Maj Tax Prof	ULS p Unit Name conomy (Sub ile Description th (inches)	e (Series and ogroup): n: Horizon	d Phase): Greenton silty cla 	y loam, 5 to	9 percent 9 percent 10ttle Colors 1unsell Moist)		Mottik	Drainage Class Field Observa e Abundance/ ze/Contrast	Wat somewations Co	ter color is Clear what poorly onfirm Mapped Ty Texture, Concretio	ar ⊡brow rpe? Yes ns, Structure, (	n □oily Circle No etc.
SO Maj Tax Prof Dep 0-6	Unit Name conomy (Sub ile Description th (inches)	e (Series and ogroup): n: Horizon	d Phase): Greenton silty cla 	y loam, 5 to (M (M 10 YR 4/3	9 percent fottle Colors lunsell Moist) 8, 5 YR 4/6		Mottle Siz 40%, 109	Drainage Class Field Observa e Abundance/ ze/Contrast %	Wa : somew ations Co	ter color is □clea what poorly nfirm Mapped Ty Texture, Concretio	ar ∐brow rpe? Yes ns, Structure,	n ⊡oily Circle No etc.
SO Maj Tax Prof Dep 0-6 6-1	ULS p Unit Name conomy (Sub ile Description th (inches) 2	e (Series and ogroup): n: Horizon	d Phase): Greenton silty cla Matrix Color (Munsell Moist) 10 YR 2/1 10 YR 2/1	IV Ioam, 5 to (M 10 YR 4/3	9 percent Nottle Colors Iunsell Moist) 3, 5 YR 4/6		Mottle Siz 40%, 109	Drainage Class Field Observa e Abundance/ ze/Contrast %	War : somew ations Co SCL SCL	ter color is □clea what poorly nfirm Mapped Ty Texture, Concretio	ar Dbrow	n ⊡oily Circle No etc.
SO Maj Tax Prof Dep 0-6 6-1	ILS p Unit Name conomy (Sub ille Description th (inches) 2	e (Series and ogroup): n: Horizon	d Phase): Greenton silty cla Matrix Color (Munsell Moist) 10 YR 2/1 10 YR 2/1	IV Ioam, 5 to (N 10 YR 4/3	9 percent Nottle Colors Junsell Moist) 3, 5 YR 4/6		Mottle Siz 40%, 109	Drainage Class Field Observa e Abundance/ te/Contrast	Wattions Constructions Constru	ter color is □clea what poorly onfirm Mapped Ty Texture, Concretio	ar ⊡brow rpe? Yes ns, Structure, (	n ⊡oily Circle No etc.
SO Maj Tax Prof 0-6 6-1	ILS p Unit Name conomy (Sub ile Description th (inches) 2	e (Series and ogroup): n: Horizon	d Phase): Greenton silty cla Matrix Color (Munsell Moist) 10 YR 2/1 10 YR 2/1	IV loam, 5 to (M 10 YR 4/3	9 percent Aottle Colors Iunsell Moist) 3, 5 YR 4/6		Mottle Siz 40%, 109	Drainage Class Field Observa e Abundance/ ze/Contrast %	Wattions Co	ter color is ⊡clea what poorly onfirm Mapped Ty Texture, Concretio	ar Dbrow	noily
SO           Mal           Tax           Prof           0-6           6-11           Hycc           Hycc	ILS p Unit Name conomy (Sub ile Description th (inches) 2 dric Soil India Histosol Histic Epi Sulfidic C Aquic Mo	e (Series and ogroup): 1: Horizon cators: ipedon Jdor oisture Regin	d Phase): Greenton silty cla Matrix Color (Munsell Moist) 10 YR 2/1 10 YR 2/1 10 YR 2/1 EXAMPLE OF CONTRACTOR Matrix Color (Munsell Moist) 10 YR 2/1 0 YR 2	Ny loam, 5 to (N) (N) (N) (N) (N) (N) (N) (N) (N) (N)	9 percent fottle Colors tunsell Moist) 3, 5 YR 4/6 additions v-Chroma C king in Sand	olors	Mottil Siz 40%, 109	Drainage Class Field Observa	Wattions Constructions Constru	ter color is Clear what poorly onfirm Mapped Ty Texture, Concretio Surface Layer in S Soils List bils List	ar Dbrow	n ⊡oily Circle No etc.
SO Ma <sub>1</sub> Tax Prof 0-6 6-1: Hyo	PLLS p Unit Name conomy (Sub ile Description th (inches) 2 Tric Soil India Histosol Histosol Histic Epi Sulfidic C Aquic Mo marks:	e (Series and ogroup): : Horizon cators: ipedon odor oisture Regin	d Phase): Greenton silty cla Matrix Color (Munsell Moist) 10 YR 2/1 10 YR 2/1 10 YR 2/1 ne	Ny loam, 5 to	9 percent Mottle Colors Junsell Moist) 3, 5 YR 4/6 aditions v-Chroma C king in Sand	olors	Mottli Siz 40%, 109	High Organic Con Listed on Nationa Listed on Local H Other (explain in	Wa : somev titions Co SCL SCL SCL All Hydric Hydric So remarks	ter color is Clear what poorly onfirm Mapped Ty Texture, Concretio Surface Layer in S Soils List bils List	ar □brow	Circle No etc.
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## DATA FORM **ROUTINE WETLAND DETERMINATION**

(1987 COE Wetlands Delineation Manual)

Project Sit Applicant/	e: Dwner:	Botts Road JDR Piper-Wind Architects, Inc.					Date: County: State:	8-16-07 Jackson		
Do Normal	Circumstance	es exist on the site?		Yes		No	Community ID:	PSS/PEM 1-2		
Is the site si Is Area a Po	gnificantly di tential Probl	sturbed (Atypical Situation)? em Area? <i>(if needed, explain on re</i>	verse)	Yes     Yes		No No	Transect ID: Plot ID:	DP# 2-Out		
VEGETAT	ION									
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3 Convolv 4	Ilus arvensis		V	UPL	10 11					
5 6					12 13					
7 Dereent of F	aminant Cn.	voice that are ODL EACW as EAC	(oveluding F		14					
Remarks:				//o/).						
HYDROLO	GY									]
Record Record No red Field Obserd Depth of Depth to Depth to	ded Data (di Stream, Aerial PI Other corded data vations: Surface Wat Free Water i Saturated Si	escribe in Remarks) Lake, or Tide Gauge lootographs available er: (In.) n Pit: (In.) bil: (In.)		d Hydrology mary Indica Inund Satur Wate Drift L Sedin Drain	y Indicato tors: lated ated in L r Marks Lines nent Dep age Patt	ors: lpper 12 inc osits erns in Wet	hes C	Condary Indicators (2 Oxidized Root (2 Water-Stained L Local Soil Surve FAC-Neutral Te Other (explain in	or more requ Channels in L Leaves ey Data st n remarks)	<i>iired):</i> Jpper 12"
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Depth (inches	Horizon	(Munsell Moist)	(M	unsell Moist)		Siz	e/Contrast	Texture, Concretio	ns, Structure,	etc.
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WETLAN	DETERM	INATION								U
Hydrophytic Wetland Hy Hydric Soils	Vegetation I drology Pres Present?	Present?	es 🛛 es 🖾 es 🗖	No Is th No No	iis Samp	ling Point W	/ithin a Wetland?	Yes 🔲 N	0	
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Project Site:     Botts Road JDR       Applicant/Owner:     Piper-Wind Architects, Inc.       Investigator:     Chris Thomas & Kevin Slates					Date: County: State:	Date:     8-16-07       County:     Jackson       State:     MO				
Do Normal C	rcumstances	exist on the site?		Yes		No	Community ID:	PSS/PEM 2-1		
Is the site sig	nificantly distu ential Problem	urbed (Atypical Situation)? Area? <i>(if needed, explain on re</i>	verse)	Yes		No	Transect ID: Plot ID:	DP# 1-In		
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5 6					12 13					
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5-12		7/5 YR 2.5/1	7.5 YR 4/	6		5%		SCL		
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WETLAND DETERMINATION										
Hydrophytic Vegetation Present?       Image: Sector S										
Remarks/Exp relationships:	lain significar	nt nexus (pollution filtration, flood	water reten	tion, feeding	nesting	/spawning g	pround for TNW sp	pecies, other biological, p	ohysical or ch	emical
wetland (□abuts is □adjacent to) tributary:         Adjacency is shown by □discrete hydrologic connection (explain):         □ecological connection (explain):         □separated by berm/barrier (explain):										

Project Site:     Botts Road JDR       Applicant/Owner:     Piper-Wind Architects, Inc.       Investigator:     Chris Thomas & Kevin Slates					Date: County: State:	8-16-07 Jackson MO	8-16-07 Jackson MO				
Do	Normal Cire	cumstances	exist on the site?		X Yes		No	Community ID:	PSS/PEM 2	-2	
ls th	ne site signi	ificantly distu	rbed (Atypical Situation)?	, E	Yes		No	Transect ID:			
Is A	rea a Potei	ntial Problem	Area? (if needed, explain on re	everse)			No	Plot ID:	DP# 2-Out		
VE	GETATIO	N									
Dom	inant Plant S	Species		Stratum	Indicator	Domin	ant Plant Spec	ties		Stratum	Indicator
1	Setaria fabe Ambrosia a	erii rtemisifolia		H	FACU+ FACU	8 9					
3	Abutilon the	eophrasti		H	FACU-	10					
4 5	Xanthium st	trumarium		H	FACW	12					
6						13					
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Fiel	Recorde	d Data (desc Stream, La Aerial Phot Other ded data ava ions: urface Water: ee Water in F turated Soil:	ribe in Remarks) ke, or Tide Gauge ographs ailable Pit:(In.) (In.)	Wetlan Pri	d Hydrolog mary Indica Inuno Satu Wate Drift Sedi Drair	y Indica ators: dated rated in er Marks Lines Lines ment De nage Pa	tors: Upper 12 inc posits tterns in Wet	thes lands	Secondary Indicators Oxidized Ro Water-Stain Local Soil S FAC-Neutra Other (expla	s (2 or more requ toot Channels in L ed Leaves urvey Data I Test ain in remarks)	<i>uired):</i> Jpper 12"
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# Appendix D Jurisdictional Determination Forms

#### 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

**REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): 8-22-07 I-1** A.

#### DISTRICT OFFICE, FILE NAME, AND NUMBER: Kansas City, Mo; Botts Road JDR; 2007-107 В.

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

State: Mo County/parish/borough: Jackson City: Grandview Center coordinates of site (lat/long in degree decimal format): Lat. 94° N, Long. 34° W. Universal Transverse Mercator:

Name of nearest waterbody:

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Missouri River Name of watershed or Hydrologic Unit Code (HUC): 10300101

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

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: 8-15,16-2007

 $\square$ Field Determination. Date(s): 8-14-2007

#### 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: 8,541linear feet: width (ft) and/or 0.26 acres. Wetlands: 0.39 acres.

- c. Limits (boundaries) of jurisdiction based on: 1987 Delineation Manual 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: PEM-2, PEM-4, PSS/PEM-2 do not have significant nexus to TNW.

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

<sup>&</sup>lt;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).

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: 432 acres Drainage area: 80 acres Average annual rainfall: 15.85 inches Average annual snowfall: 19.9 inches

#### (ii) Physical Characteristics:

(a) <u>Relationship with TNW:</u>

 ☐ Tributary flows directly into TNW.
 ☑ Tributary flows through 2 tributaries before entering TNW.

Project waters are 30 (or more) river miles from TNW.
Project waters are Project waters are 1 (or less) river miles from RPW.
Project waters are 1 (straight) miles from TNW.
Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW<sup>5</sup>: Unnamed tributary, Little Blue River. Tributary stream order, if known:

<sup>&</sup>lt;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>&</sup>lt;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.

(b)	General Tributary Characteristics (check all that apply):         Tributary is: <ul> <li>Natural</li> <li>Artificial (man-made). Explain:</li> <li>Manipulated (man-altered). Explain: Channelized tributary to drain ag fields.</li> </ul>
	Tributary properties with respect to top of bank (estimate): Average width: 10 feet Average depth: 3 feet Average side slopes: <b>3:1</b> .
	Primary tributary substrate composition (check all that apply): Silts Sands Concrete Cobbles Gravel Muck Bedrock Vegetation. Type/% cover: Other. Explain: Boulders.
	Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: . Presence of run/riffle/pool complexes. Explain: . Tributary geometry: <b>Relatively straight</b> Tributary gradient (approximate average slope): %
(c)	<u>Flow:</u> Tributary provides for: Seasonal flow Estimate average number of flow events in review area/year: 11-20 Describe flow regime: Other information on duration and volume:
	Surface flow is: <b>Confined.</b> Characteristics:
i	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 changes in the character of soil shelving vegetation matted down, bent, or absent leaf litter disturbed or washed away sediment deposition water staining 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): <ul> <li>High Tide Line indicated by:</li> <li>oil or scum line along shore objects</li> <li>fine shell or debris deposits (foreshore)</li> <li>physical markings/characteristics</li> <li>tidal gauges</li> <li>other (list):</li> </ul> Mean High Water Mark indicated by: <ul> <li>Physical markings/characteristics</li> <li>Physical markings/characteristics</li> </ul>
(iii) Cher	nical Characteristics:

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

Identify specific pollutants, if known:

<sup>&</sup>lt;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.

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

- Riparian corridor. Characteristics (type, average width): Forested and herbaceous corridor.
- Wetland fringe. Characteristics: Scrub shrub wetland frings.
- 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) <u>General Wetland Characteristics:</u> Properties: Wetland size: 0.179 acres Wetland type. Explain: Palustrine Scrub shrub/Palustrine emergent wetland. Wetland quality. Explain: Project wetlands cross or serve as state boundaries. Explain:
- (b) <u>General Flow Relationship with Non-TNW</u>: Flow is: **No Flow**. Explain: No flow. Hydrology from I-1 fuels wetland.

Surface flow is: Not present Characteristics: .

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

- (c) <u>Wetland Adjacency Determination with Non-TNW:</u>
  - 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 **30 (or more)** river miles from TNW. Project waters are **15-20** aerial (straight) miles from TNW. Flow is from: **No Flow.** Estimate approximate location of wetland as within the **500-year or greater** floodplain.

#### (ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:

Identify specific pollutants, if known:

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

- Riparian buffer. Characteristics (type, average width): narrow fringe to I-1.
- Vegetation type/percent cover. Explain: Salix nigra, Polulus deltoides, typha latifolia.
- 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: **1** Approximately (0.65) acres in total are being considered in the cumulative analysis. Summarize overall biological, chemical and physical functions being performed: Flood storage, buffer to ag runoff.

#### 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:

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

- 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. <u>RPWs that flow directly or indirectly into TNWs.</u>
  - 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:

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

Tributary waters: **1313** linear feet **1.5** width (ft). acres.

- Other non-wetland waters:
  - Identify type(s) of waters:
- 3. Non-RPWs<sup>8</sup> 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):

acres.

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

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

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:
- Ketlands 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: PSS/PEM-1=0.179 acres.

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

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: acres.

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

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.

- 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).

#### 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:

<sup>&</sup>lt;sup>8</sup>See Footnote # 3.

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

<sup>&</sup>lt;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.

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 <u>solely</u> 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 <u>sole</u> 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 v	vaters (i.e., rive	rs, streams):	linear feet	width (ft).
Lakes/ponds:	acres.			
Other non-wet	land waters:	acres. List t	ype of aquatic re	source: .
Wetlands:	acres.			
	Non-wetland v Lakes/ponds: Other non-wet Wetlands:	Non-wetland waters (i.e., rive Lakes/ponds: acres. Other non-wetland waters: Wetlands: acres.	Non-wetland waters (i.e., rivers, streams): Lakes/ponds: acres. Other non-wetland waters: acres. List t Wetlands: acres.	Non-wetland waters (i.e., rivers, streams): linear feet Lakes/ponds: acres. Other non-wetland waters: acres. List type of aquatic re- 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	nt apply -	- checked items shall	be included in	n case file and	, where	checked
	and requested, appropria	ately reference sources below):						

Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:

$\boxtimes$	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.

|--|

- 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:Belton, Missouri 7.5' Quad.
- USDA Natural Resources Conservation Service Soil Survey. Citation: Jackson County, MO.
- National wetlands inventory map(s). Cite name: Belton, Missouir 7.5' Quad.
- State/Local wetland inventory map(s):
- FEMA/FIRM maps:
- 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)

Photographs: Aerial (Name & Date): Figure 5.

- or  $\overline{\boxtimes}$  Other (Name & Date): Appendix B.
- Previous determination(s). File no. and date of response letter:
- Applicable/supporting case law:

Applicable/supporting scientific literature:

Other information (please specify):

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

#### 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

**REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): 8-22-07 I-2** A.

#### DISTRICT OFFICE, FILE NAME, AND NUMBER: Kansas City, Mo; Botts Road JDR; 2007-107 В.

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

State: Mo County/parish/borough: Jackson City: Grandview Center coordinates of site (lat/long in degree decimal format): Lat. 94° N, Long. 34° W. Universal Transverse Mercator:

Name of nearest waterbody:

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Missouri River Name of watershed or Hydrologic Unit Code (HUC): 10300101

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

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: 8-15,16-2007

 $\square$ Field Determination. Date(s): 8-14-2007

#### 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: 8,541linear feet: width (ft) and/or 0.26 acres. Wetlands: 0.39 acres.

- c. Limits (boundaries) of jurisdiction based on: 1987 Delineation Manual 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: PEM-2, PEM-4, PSS/PEM-2 do not have significant nexus to TNW.

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

<sup>&</sup>lt;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).

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: 432 acres Drainage area: 311 acres Average annual rainfall: 15.85 inches Average annual snowfall: 19.9 inches

#### (ii) Physical Characteristics:

(a) <u>Relationship with TNW:</u>

 ☐ Tributary flows directly into TNW.
 ☑ Tributary flows through 3 tributaries before entering TNW.

Project waters are 30 (or more) river miles from TNW.
Project waters are Project waters are 1 (or less) river miles from RPW.
Project waters are 1 (or less) aerial (straight) miles from TNW.
Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW<sup>5</sup>: Unnamed tributary, unnamed tributary, Little Blue River. Tributary stream order, if known:

<sup>&</sup>lt;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>&</sup>lt;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.

(b)	General Tributary Characteristics (check all that apply):         Tributary is:       Natural         Artificial (man-made). Explain:       .         Manipulated (man-altered). Explain: Channelized tributary to drain ag fields.
	Tributary properties with respect to top of bank (estimate): Average width: 6 feet Average depth: 2 feet Average side slopes: <b>3:1</b> .
	Primary tributary substrate composition (check all that apply):          Silts       Sands       Concrete         Cobbles       Gravel       Muck         Bedrock       Vegetation. Type/% cover:       Muck         Other. Explain:       .
	Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain:       .         Presence of run/riffle/pool complexes. Explain:       .         Tributary geometry:       Relatively straight         Tributary gradient (approximate average slope):       %
(c)	Flow:         Tributary provides for:       Seasonal flow         Estimate average number of flow events in review area/year:       11-20         Describe flow regime:       .         Other information on duration and volume:       .
	Surface flow is: <b>Confined.</b> Characteristics:
	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         changes in the character of soil         changes in the character of soil         shelving         vegetation matted down, bent, or absent         leaf litter disturbed or washed away         sediment deposition         water staining         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/characteristics         tidal gauges       other (list):
ii) Che	emical Characteristics:

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

Identify specific pollutants, if known:

<sup>&</sup>lt;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.

### I-2

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

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

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) <u>General Wetland Characteristics:</u> Properties: Wetland size: 0.045 acres Wetland type. Explain: Palustrine Scrub shrub. Wetland quality. Explain: Project wetlands cross or serve as state boundaries. Explain:
- (b) <u>General Flow Relationship with Non-TNW</u>: Flow is: **No Flow**. Explain: No flow. Hydrology from I-2 fuels wetland.

Surface flow is: Not present Characteristics: .

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

- (c) <u>Wetland Adjacency Determination with Non-TNW:</u>
  - 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 **30 (or more)** river miles from TNW. Project waters are **15-20** aerial (straight) miles from TNW. Flow is from: **No Flow.** Estimate approximate location of wetland as within the **500-year or greater** floodplain.

#### (ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:

Identify specific pollutants, if known:

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

- Riparian buffer. Characteristics (type, average width): narrow fringe to I-2.
- Vegetation type/percent cover. Explain: Salix nigra, Polulus deltoides, typha latifolia.
- 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: **1** Approximately (0.65) acres in total are being considered in the cumulative analysis.

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
PSS-1 Y	0.045		

Summarize overall biological, chemical and physical functions being performed: Flood storage, buffer to ag runoff.

#### 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:

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

- 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. <u>RPWs that flow directly or indirectly into TNWs.</u>
  - 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:

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

Tributary waters: 2,342 linear feet 1.0 width (ft). acres.

- Other non-wetland waters:
- Identify type(s) of waters:
- 3. Non-RPWs<sup>8</sup> 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):

acres.

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

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

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:
- Ketlands 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: PSS-1=0.045 acres.

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

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

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.

- 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).

- 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:

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>

<sup>&</sup>lt;sup>8</sup>See Footnote # 3.

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

<sup>&</sup>lt;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.

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 <u>solely</u> 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 <u>sole</u> 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., rive	rs, streams):	linear feet	width (ft).
Lakes/ponds:	acres.			
Other non-we	tland waters:	acres. List t	ype of aquatic re	source: .
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	nt apply -	- checked items shall	be included in	n case file and	, where	checked
	and requested, appropria	ately reference sources below):						

Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:

$\boxtimes$	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.
$\boxtimes$	U.S. Geological Survey map(s). Cite scale & quad name:Belton, Missouri 7.5' Quad.
$\bowtie$	USDA Natural Resources Conservation Service Soil Survey. Citation: Jackson County, MO.
	National wetlands inventory map(s). Cite name: Belton, Missouir 7.5' Quad.
	State/Local wetland inventory map(s):
	FEMA/FIRM maps: .
	100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
$\boxtimes$	Photographs: 🛛 Aerial (Name & Date): Figure 5.
	or $\boxtimes$ Other (Name & Date): Appendix B.
	Previous determination(s). File no. and date of response letter:
	Applicable/supporting case law:
	Applicable/supporting scientific literature:
	Other information (please specify):

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

#### 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

**REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): 8-22-07 I-3** A.

#### DISTRICT OFFICE, FILE NAME, AND NUMBER: Kansas City, Mo; Botts Road JDR; 2007-107 В.

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

State: Mo County/parish/borough: Jackson City: Grandview Center coordinates of site (lat/long in degree decimal format): Lat. 94° N, Long. 34° W. Universal Transverse Mercator:

Name of nearest waterbody:

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Missouri River Name of watershed or Hydrologic Unit Code (HUC): 10300101

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

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: 8-15,16-2007

 $\square$ Field Determination. Date(s): 8-14-2007

#### 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: 8,541linear feet: width (ft) and/or 0.26 acres. Wetlands: 0.39 acres.

- c. Limits (boundaries) of jurisdiction based on: 1987 Delineation Manual 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: PEM-2, PEM-4, PSS/PEM-2 do not have significant nexus to TNW.

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

<sup>&</sup>lt;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).

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: 432 acres Drainage area: 121 acres Average annual rainfall: 15.85 inches Average annual snowfall: 19.9 inches

#### (ii) Physical Characteristics:

(a) <u>Relationship with TNW:</u>

 ☐ Tributary flows directly into TNW.
 ☑ Tributary flows through 3 tributaries before entering TNW.

Project waters are 30 (or more) river miles from TNW.
Project waters are Project waters are 1 (or less) river miles from RPW.
Project waters are 1 (or less) aerial (straight) miles from TNW.
Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW<sup>5</sup>: Unnamed tributary, unnamed tributary, Little Blue River. Tributary stream order, if known:

<sup>&</sup>lt;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>&</sup>lt;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.
(b)	General Tributary Characteristics (check all that apply):         Tributary is:
	Tributary properties with respect to top of bank (estimate): Average width: 6 feet Average depth: 3 feet Average side slopes: <b>3:1</b> .
	Primary tributary substrate composition (check all that apply):
	Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: . Presence of run/riffle/pool complexes. Explain: . Tributary geometry: <b>Meandering</b> Tributary gradient (approximate average slope): %
(c)	<u>Flow:</u> Tributary provides for: <b>Seasonal flow</b> Estimate average number of flow events in review area/year: <b>11-20</b> Describe flow regime: Other information on duration and volume:
	Surface flow is: <b>Confined.</b> Characteristics:
	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 sediment sorting 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 bar other (list):
	Discontinuous OHWM. 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;         physical markings/characteristics       physical markings;         tidal gauges       other (list):
(iii) Ch	emical Characteristics: aracterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.

Chemical Characteristics: Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.). Explain: Water is stagnant and discolored. Identify specific pollutants, if known: .

<sup>&</sup>lt;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.

# I-3

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

- Riparian corridor. Characteristics (type, average width): Forested corridor, 20' wide.
- 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) <u>General Wetland Characteristics:</u> Properties: Wetland size: 0.14 acres Wetland type. Explain: Palustrine Emergent-3. Wetland quality. Explain: Project wetlands cross or serve as state boundaries. Explain:
- (b) <u>General Flow Relationship with Non-TNW</u>: Flow is: Ephemeral flow. Explain: No flow. Flow connects features after rain events.

Surface flow is: Discrete Characteristics:

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

- (c) <u>Wetland Adjacency Determination with Non-TNW:</u>
  - Directly abutting
  - Not directly abutting
    - Discrete wetland hydrologic connection. Explain: drainages to I-3.
    - Ecological connection. Explain:
    - Separated by berm/barrier. Explain:

## (d) Proximity (Relationship) to TNW

Project wetlands are 30 (or more) river miles from TNW.
Project waters are 15-20 aerial (straight) miles from TNW.
Flow is from: Wetland to navigable waters.
Estimate approximate location of wetland as within the 500-year or greater floodplain.

# (ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:

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: Emergent vegetation.
- 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: **1** Approximately (0.65) acres in total are being considered in the cumulative analysis.

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
PEM-3 N	0.14		

Summarize overall biological, chemical and physical functions being performed: Flood storage, buffer to ag runoff.

### 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: PEM-3 acts as a buffer for I-3 from sediments and pollution from the surrounding agricultural field.

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

- 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. <u>RPWs that flow directly or indirectly into TNWs.</u>
  - 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:

Tributary waters: **952** linear feet **2.0** width (ft). acres.

- Other non-wetland waters:
  - Identify type(s) of waters:
- 3. Non-RPWs<sup>8</sup> 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):

acres.

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

Identify type(s) of waters:

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

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.

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

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: PEM-3 = 0.14 acres.

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

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.

- Impoundments of jurisdictional waters.<sup>9</sup> 7.
  - 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).

## 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:

<sup>&</sup>lt;sup>8</sup>See Footnote # 3.

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

<sup>&</sup>lt;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.

.

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 <u>solely</u> 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 <u>sole</u> 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., rive	rs, streams):	linear feet	width (ft).	
Lakes/ponds:	acres.				
Other non-we	tland waters:	acres. List t	ype of aquatic re	source:	•
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 c	ase file and,	where chec	cked
	and requested, appropria	ately reference sources I	below):					
		-						

Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:

$\boxtimes$	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.
$\boxtimes$	U.S. Geological Survey map(s). Cite scale & quad name:Belton, Missouri 7.5' Quad.
$\boxtimes$	USDA Natural Resources Conservation Service Soil Survey. Citation: Jackson County, MO.
	National wetlands inventory map(s). Cite name: Belton, Missouir 7.5' Quad.
	State/Local wetland inventory map(s):
	FEMA/FIRM maps: .
	100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
$\boxtimes$	Photographs: 🛛 Aerial (Name & Date): Figure 5.
	or $\boxtimes$ Other (Name & Date): Appendix B.
	Previous determination(s). File no. and date of response letter:
	Applicable/supporting case law:
	Applicable/supporting scientific literature:
	Other information (please specify):

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

### 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): 8-22-07 E-1

### B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Kansas City, Mo; Botts Road JDR; 2007-107

## C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: MoCounty/parish/borough: JacksonCity: GrandviewCenter coordinates of site (lat/long in degree decimal format):Lat. 94° N, Long. 34° W.Universal Transverse Mercator:

Name of nearest waterbody:

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Missouri River Name of watershed or Hydrologic Unit Code (HUC): 10300101

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: 8-15,16-2007

Field Determination. Date(s): 8-14-2007

### **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.

 $\mathbf{k}$ 

- 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: 8,541 linear feet: width (ft) and/or 0.26 acres.
   Wetlands: 0.39 acres.
- **c. Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual** 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: **PEM-2**, **PEM-4**, **PSS/PEM-2** do not have significant nexus to TNW.

<sup>&</sup>lt;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>&</sup>lt;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: 432 acres Drainage area: 44 acres Average annual rainfall: 15.85 inches Average annual snowfall: 19.9 inches

# (ii) Physical Characteristics:

(a) <u>Relationship with TNW:</u>

 □ Tributary flows directly into TNW.
 □ Tributary flows through 3 tributaries before entering TNW.

Project waters are 30 (or more) river miles from TNW.
Project waters are Project waters are 1 (or less) river miles from RPW.
Project waters are 1 (or less) aerial (straight) miles from TNW.
Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW<sup>5</sup>: Unnamed tributary, unnamed tributary, Little Blue River. Tributary stream order, if known:

<sup>&</sup>lt;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>&</sup>lt;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.

	(b)	General Tributary Characteristics (check all that apply):         Tributary is:       Image: Check all that apply):         Image: Check all that apply):       Image: Check all that apply):         Image: Check all that apply):       Image: Check all that apply):         Image: Check all that apply):       Image: Check all that apply):         Image: Check all that apply):       Image: Check all that apply):         Image: Check all that apply):       Image: Check all that apply):         Image: Check all that apply):       Image: Check all that apply):         Image: Check all that apply):       Image: Check all that apply):         Image: Check all that apply a
		<b>Tributary</b> properties with respect to top of bank (estimate): Average width: 3 feet Average depth: 1.5 feet Average side slopes: <b>4:1 (or greater)</b> .
		Primary tributary substrate composition (check all that apply):
		Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Highly eroded. Presence of run/riffle/pool complexes. Explain: Tributary geometry: Meandering Tributary gradient (approximate average slope): %
	(c)	<u>Flow:</u> Tributary provides for: <b>Ephemeral flow</b> Estimate average number of flow events in review area/year: <b>11-20</b> Describe flow regime: . Other information on duration and volume: .
		Surface flow is: <b>Discrete and confined.</b> Characteristics:
		Subsurface flow: Unknown. Explain findings: .
		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 changes in the character of soil shelving vegetation matted down, bent, or absent leaf litter disturbed or washed away sediment deposition water staining 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/characteristics         tidal gauges       other (list):
(iii)	Che Cha	emical Characteristics: racterize tributary (e.g., water color is clear, discolored, oily film, water quality, general watershed characteristics, et

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

Identify specific pollutants, if known:

E-1

<sup>&</sup>lt;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.

### (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) <u>General Wetland Characteristics:</u> Properties: Wetland size: acres Wetland type. Explain: Wetland quality. Explain: Project wetlands cross or serve as state boundaries. Explain:
- (b) <u>General Flow Relationship with Non-TNW</u>: Flow is: **Pick List**. Explain:

Surface flow is: Pick List Characteristics:

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

## (c) <u>Wetland Adjacency Determination with Non-TNW:</u>

- 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. 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: E-1 drains the surrounding agricultural fields and the pollutants and erosion associated with conventional agriculture. The transportation of pollution and erosion act as a significant nexus.
- 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:

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

- **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:

acres.

Tributary waters: linear feet width (ft).

- Other non-wetland waters:
  - Identify type(s) of waters:

### 3. Non-RPWs<sup>8</sup> 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: 1,026 linear feet 2.0 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 jurisidictional. 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.<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).
- 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:

<sup>&</sup>lt;sup>8</sup>See Footnote # 3.

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

<sup>&</sup>lt;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*.

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Identity	v water	body	and	summarize	rational	e sum	norting	determination	
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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 <u>solely</u> 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 <u>sole</u> 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. SUPPORT	<b>FING DATA.</b> Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked
and reque	ested, appropriately reference sources below):
🖾 Map	s, plans, plots or plat submitted by or on behalf of the applicant/consultant:
🛛 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: .
Corr	os navigable waters' study:
U.S.	Geological Survey Hydrologic Atlas:
U	JSGS NHD data.
<u>ן</u> נ	JSGS 8 and 12 digit HUC maps.
🛛 U.S.	Geological Survey map(s). Cite scale & quad name:Belton, Missouri 7.5' Quad.
🛛 USE	DA Natural Resources Conservation Service Soil Survey. Citation: Jackson County, MO.
🔲 Nati	onal wetlands inventory map(s). Cite name: Belton, Missouir 7.5' Quad.
State	e/Local wetland inventory map(s):
FEM	IA/FIRM maps: .
100-	year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
🛛 Phot	tographs: 🛛 Aerial (Name & Date): Figure 5.
	or 🖾 Other (Name & Date): Appendix B.
Prev Prev	rious determination(s). File no. and date of response letter:
App	licable/supporting case law:
App	licable/supporting scientific literature:
Othe	er information (please specify):

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

### 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

#### REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): 8-22-07 E-2a A.

## B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Kansas City, Mo; Botts Road JDR; 2007-107

### C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: Mo County/parish/borough: Jackson City: Grandview Center coordinates of site (lat/long in degree decimal format): Lat. 94° N, Long. 34° W.

Universal Transverse Mercator:

Name of nearest waterbody:

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Missouri River Name of watershed or Hydrologic Unit Code (HUC): 10300101

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):

- $\boxtimes$ Office (Desk) Determination. Date: 8-15.16-2007
- Field Determination. Date(s): 8-14-2007

# 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.

 $\overline{\boxtimes}$ 

- 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: 8,541 linear feet: width (ft) and/or 0.26 acres. Wetlands: 0.39 acres.
- c. Limits (boundaries) of jurisdiction based on: 1987 Delineation Manual Elevation of established OHWM (if known):
- 2. Non-regulated waters/wetlands (check if applicable):<sup>3</sup>

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

<sup>&</sup>lt;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).

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: **PEM-2**, **PEM-4**, **PSS/PEM-2** do not have significant nexus to 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 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: 432 acres Drainage area: 60 acres Average annual rainfall: 15.85 inches Average annual snowfall: 19.9 inches

# (ii) Physical Characteristics:

(a) <u>Relationship with TNW:</u>

 □ Tributary flows directly into TNW.
 □ Tributary flows through 3 tributaries before entering TNW.

Project waters are 30 (or more) river miles from TNW.
Project waters are Project waters are 1 (or less) river miles from RPW.
Project waters are 1 (or less) aerial (straight) miles from TNW.
Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW<sup>5</sup>: Unnamed tributary, unnamed tributary, Little Blue River. Tributary stream order, if known:

<sup>&</sup>lt;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>&</sup>lt;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.

	(b)	General Tributary Characteristics (check all that apply):         Tributary is:
		Tributary properties with respect to top of bank (estimate): Average width: 1.5 feet Average depth: 0.75 feet Average side slopes: 4:1 (or greater).
		Primary tributary substrate composition (check all that apply):
		Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: Highly eroded.         Presence of run/riffle/pool complexes. Explain:       .         Tributary geometry:       Meandering         Tributary gradient (approximate average slope):       %
	(c)	<ul> <li><u>Flow:</u></li> <li>Tributary provides for: Ephemeral flow</li> <li>Estimate average number of flow events in review area/year: 6-10</li> <li>Describe flow regime:</li> <li>Other information on duration and volume:</li> </ul>
		Surface flow is: <b>Discrete and confined.</b> Characteristics:
		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 leaf litter disturbed or washed away sediment deposition the presence of predicted flow events water staining abrupt change in plant community
		$\Box$ 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): <ul> <li>High Tide Line indicated by:</li> <li>Oil or scum line along shore objects</li> <li>fine shell or debris deposits (foreshore)</li> <li>physical markings/characteristics</li> <li>tidal gauges</li> <li>other (list):</li> </ul>
(iii)	<b>Che</b> Cha	emical Characteristics: racterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteris Explain:

.

Identify specific pollutants, if known:

<sup>&</sup>lt;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.

# E-2a

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

- Riparian corridor. Characteristics (type, average width): Riparian corridor, 50' wide.
- 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) <u>General Wetland Characteristics:</u> Properties: Wetland size: acres Wetland type. Explain: Wetland quality. Explain: Project wetlands cross or serve as state boundaries. Explain:
- (b) <u>General Flow Relationship with Non-TNW</u>: Flow is: **Pick List**. Explain:

Surface flow is: Pick List Characteristics:

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

- (c) <u>Wetland Adjacency Determination with Non-TNW:</u>
  - 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.

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: E-2a drains the surrounding agricultural fields and the pollutants and erosion associated with conventional agriculture. The transportation of pollution and erosion act as a significant nexus.
- 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:

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

- **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:

acres.

Tributary waters: linear feet width (ft).

- Other non-wetland waters:
  - Identify type(s) of waters:

### 3. Non-RPWs<sup>8</sup> 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: **372** linear feet **0.5** 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 jurisidictional. 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.<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).
- 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:

<sup>&</sup>lt;sup>8</sup>See Footnote # 3.

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

<sup>&</sup>lt;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*.

### 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.

acres. List type of aquatic resource:

- Prior to the Jan 2001 Supreme Court decision in "SWANCC," the review area would have been regulated based <u>solely</u> 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 <u>sole</u> 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:
  - Wetlands: acres.

### SECTION IV: DATA SOURCES.

A. SUP	<b>PORTING DATA.</b> 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):
$\boxtimes$	Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
$\bowtie$	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.
$\bowtie$	U.S. Geological Survey map(s). Cite scale & quad name:Belton, Missouri 7.5' Quad.
$\bowtie$	USDA Natural Resources Conservation Service Soil Survey. Citation: Jackson County, MO.
	National wetlands inventory map(s). Cite name: Belton, Missouir 7.5' Quad.
	State/Local wetland inventory map(s):
	FEMA/FIRM maps: .
	100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
$\boxtimes$	Photographs: 🛛 Aerial (Name & Date): Figure 5.
	or 🖾 Other (Name & Date): Appendix B.
	Previous determination(s). File no. and date of response letter:
	Applicable/supporting case law: .
	Applicable/supporting scientific literature:
	Other information (please specify):

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

### 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

#### REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): 8-22-07 E-2b A.

#### DISTRICT OFFICE, FILE NAME, AND NUMBER: Kansas City, Mo; Botts Road JDR; 2007-107 B.

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

State: Mo County/parish/borough: Jackson City: Grandview Center coordinates of site (lat/long in degree decimal format): Lat. 94° N, Long. 34° W. Universal Transverse Mercator:

Name of nearest waterbody:

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Missouri River Name of watershed or Hydrologic Unit Code (HUC): 10300101

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

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: 8-15,16-2007  $\boxtimes$ 

 $\square$ Field Determination. Date(s): 8-14-2007

### 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.

 $\mathbf{k}$ 

- 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: 8,541linear feet: width (ft) and/or 0.26 acres. Wetlands: 0.39 acres.
- c. Limits (boundaries) of jurisdiction based on: 1987 Delineation Manual Elevation of established OHWM (if known):
- Non-regulated waters/wetlands (check if applicable):<sup>3</sup> 2.
  - Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional. Explain: PEM-2, PEM-4, PSS/PEM-2 do not have significant nexus to TNW.

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

<sup>&</sup>lt;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).

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: 432 acres Drainage area: 60 acres Average annual rainfall: 15.85 inches Average annual snowfall: 19.9 inches

# (ii) Physical Characteristics:

(a) <u>Relationship with TNW:</u>

 □ Tributary flows directly into TNW.
 □ Tributary flows through 3 tributaries before entering TNW.

Project waters are 30 (or more) river miles from TNW.
Project waters are Project waters are 1 (or less) river miles from RPW.
Project waters are 1 (or less) aerial (straight) miles from TNW.
Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW<sup>5</sup>: Unnamed tributary, unnamed tributary, Little Blue River. Tributary stream order, if known:

<sup>&</sup>lt;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>&</sup>lt;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.

(b)	General Tributary Characteristics (check all that apply):         Tributary is:       In Natural         In Artificial (man-made).       Explain:         In Manipulated (man-altered).       Explain:
	Tributary properties with respect to top of bank (estimate): Average width: 2 feet Average depth: 1 feet Average side slopes: 3:1.
	Primary tributary substrate composition (check all that apply):          Silts       Sands       Concrete         Cobbles       Gravel       Muck         Bedrock       Vegetation. Type/% cover:       Muck         Other. Explain:       .
	Tributary condition/stability [e.g., highly eroding, sloughing banks].Explain: Cut-off channels.Presence of run/riffle/pool complexes.Explain:.Tributary geometry:Relatively straight.Tributary gradient (approximate average slope):%
(c)	Flow:         Tributary provides for:         Estimate average number of flow events in review area/year:         6-10         Describe flow regime:         .         Other information on duration and volume:
	Surface flow is: <b>Discrete and confined.</b> Characteristics:
	Subsurface flow: Unknown. Explain findings: .
	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 changes in the character of soil shelving vegetation matted down, bent, or absent leaf litter disturbed or washed away sediment deposition water staining other (list):
	$\Box$ 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/characteristics         physical markings/characteristics       vegetation lines/changes in vegetation types.         other (list):       other (list):
Che Cha	emical Characteristics:

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

Identify specific pollutants, if known:

(iii)

<sup>&</sup>lt;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.

### (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) <u>General Wetland Characteristics:</u> Properties: Wetland size: acres Wetland type. Explain: Wetland quality. Explain: Project wetlands cross or serve as state boundaries. Explain:
- (b) <u>General Flow Relationship with Non-TNW</u>: Flow is: **Pick List**. Explain:

Surface flow is: Pick List Characteristics:

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

- (c) <u>Wetland Adjacency Determination with Non-TNW:</u>
  - 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.

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: E-2b drains the surrounding agricultural fields and the pollutants and erosion associated with conventional agriculture. The transportation of pollution and erosion act as a significant nexus.
- 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:

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

- **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:

acres.

Tributary waters: linear feet width (ft).

- Other non-wetland waters:
  - Identify type(s) of waters:

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

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: **989** linear feet **1.0** 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 jurisidictional. 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.<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).
- 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:

<sup>&</sup>lt;sup>8</sup>See Footnote # 3.

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

<sup>&</sup>lt;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*.

### 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 <u>solely</u> 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 <u>sole</u> 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.

А.	SUP	PORTING 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):
	$\boxtimes$	Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
	$\boxtimes$	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.
	$\boxtimes$	U.S. Geological Survey map(s). Cite scale & quad name:Belton, Missouri 7.5' Quad.
	$\boxtimes$	USDA Natural Resources Conservation Service Soil Survey. Citation: Jackson County, MO.
		National wetlands inventory map(s). Cite name: Belton, Missouir 7.5' Quad.
		State/Local wetland inventory map(s):
		FEMA/FIRM maps: .
		100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
	$\boxtimes$	Photographs: 🛛 Aerial (Name & Date): Figure 5.
		or 🖾 Other (Name & Date): Appendix B.
		Previous determination(s). File no. and date of response letter:
		Applicable/supporting case law: .
		Applicable/supporting scientific literature:
		Other information (please specify):

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

### 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): 8-22-07 E-3

### B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Kansas City, Mo; Botts Road JDR; 2007-107

## C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: MoCounty/parish/borough: JacksonCity: GrandviewCenter coordinates of site (lat/long in degree decimal format):Lat. 94° N, Long. 34° W.Universal Transverse Mercator:

Name of nearest waterbody:

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Missouri River Name of watershed or Hydrologic Unit Code (HUC): 10300101

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: 8-15,16-2007

Field Determination. Date(s): 8-14-2007

### 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.

 $\mathbf{k}$ 

- 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: 8,541 linear feet: width (ft) and/or 0.26 acres.
   Wetlands: 0.39 acres.
- **c. Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual** 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: **PEM-2**, **PEM-4**, **PSS/PEM-2** do not have significant nexus to TNW.

<sup>&</sup>lt;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>&</sup>lt;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: 432 acres Drainage area: 59 acres Average annual rainfall: 15.85 inches Average annual snowfall: 19.9 inches

# (ii) Physical Characteristics:

(a) <u>Relationship with TNW:</u>

 ☐ Tributary flows directly into TNW.
 ☑ Tributary flows through 4 tributaries before entering TNW.

Project waters are 30 (or more) river miles from TNW.
Project waters are Project waters are 1 (or less) river miles from RPW.
Project waters are 1 (or less) aerial (straight) miles from TNW.
Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW<sup>5</sup>: Unnamed tributary, unnamed tributary, unnamed tributary, Little Blue River. Tributary stream order, if known:

<sup>&</sup>lt;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>&</sup>lt;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.

(b)	General Tributary Characteristics (check all that apply):         Tributary is:       Image: Characteristics (check all that apply):         Image: Characteristics (check all that apply):       Image: Characteristics (check all that apply):         Image: Characteristics (check all that apply):       Image: Characteristics (check all that apply):         Image: Characteristics (check all that apply):       Image: Characteristics (check all that apply):         Image: Characteristics (check all that apply):       Image: Characteristics (check all that apply):         Image: Characteristics (check all that apply):       Image: Characteristics (check all that apply):         Image: Characteristics (check all that apply):       Image: Characteristics (check all that apply):         Image: Characteristics (check all that apply):       Image: Characteristics (check all that apply):         Image: Characteristics (check all that apply):       Image: Characteristics (check all that apply):         Image: Characteristics (check all that apply):       Image: Characteristics (check all that apply):         Image: Characteristics (check all that apply):       Image: Characteristics (check all that apply):         Image: Characteristics (check all that apply):       Image: Characteristics (check all that apply):         Image: Characteristics (check all that apply):       Image: Check all that apply):         Image: Check all that apply (check all that apply):       Image: Check all that apply (check all that app
	Tributary properties with respect to top of bank (estimate): Average width: 3 feet Average depth: 2 feet Average side slopes: 3:1.
	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:MeanderingTributary gradient (approximate average slope):%
(c)	<u>Flow:</u> Tributary provides for: <b>Ephemeral flow</b> Estimate average number of flow events in review area/year: <b>6-10</b> Describe flow regime: Other information on duration and volume:
	Surface flow is: <b>Confined.</b> Characteristics:
	Subsurface flow: Unknown. Explain findings: .
	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 changes in the character of soil shelving vegetation matted down, bent, or absent leaf litter disturbed or washed away sediment deposition water staining 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.
(iii) Che	mical Characteristics:

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

Identify specific pollutants, if known:

.

E-3

<sup>&</sup>lt;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.

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

- Riparian corridor. Characteristics (type, average width): Riparian corridor, 15' wide.
- Wetland fringe. Characteristics: PEM-1.
- 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) <u>General Wetland Characteristics:</u> Properties: Wetland size: 0.03 acres Wetland type. Explain: Palustrine Emergent Wetland-1. Wetland quality. Explain: Project wetlands cross or serve as state boundaries. Explain:
- (b) <u>General Flow Relationship with Non-TNW</u>: Flow is: **No Flow**. Explain: E-6 fuels PEM-1 hydrology.

Surface flow is: Not present Characteristics: .

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

- (c) <u>Wetland Adjacency Determination with Non-TNW:</u>
  - 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 **30 (or more)** river miles from TNW. Project waters are **15-20** aerial (straight) miles from TNW. Flow is from: **No Flow.** Estimate approximate location of wetland as within the **500-year or greater** floodplain.

### (ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:

Identify specific pollutants, if known:

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

- Riparian buffer. Characteristics (type, average width): Emergent vegetation, 10' wide.
- Vegetation type/percent cover. Explain: Emergent vegetation.
- 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: **1** Approximately (0.65) acres in total are being considered in the cumulative analysis. Directly abuts? (Y/N)Size (in acres)Directly abuts? (Y/N)Size (in acres)PEM-1Y0.03

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: ). PEM-1 and E-3 drains the surrounding agricultural fields. The forested riparian corridor acts as a buffer from the pollutants and erosion associated with conventional agriculture. PEM-1 and E-3 has flood storage capabilities. Buffering of pollutants and erosion, and flood storage act as a significant nexus.
- 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:

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

- **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:

acres.

Tributary waters: linear feet width (ft).

- Other non-wetland waters:
  - Identify type(s) of waters:

### 3. Non-RPWs<sup>8</sup> 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: **1053** linear feet **1.0** 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 jurisidictional. 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: PEM-1=0.03 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).
- 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:

<sup>&</sup>lt;sup>8</sup>See Footnote # 3.

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

<sup>&</sup>lt;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*.

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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 <u>solely</u> 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 <u>sole</u> 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. SUPI	<b>PORTING DATA.</b> 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):
$\bowtie$	Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
$\bowtie$	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.
$\bowtie$	U.S. Geological Survey map(s). Cite scale & quad name:Belton, Missouri 7.5' Quad.
$\bowtie$	USDA Natural Resources Conservation Service Soil Survey. Citation: Jackson County, MO.
	National wetlands inventory map(s). Cite name: Belton, Missouir 7.5' Quad.
	State/Local wetland inventory map(s):
	FEMA/FIRM maps: .
	100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
$\bowtie$	Photographs: 🖾 Aerial (Name & Date): Figure 5.
	or 🖾 Other (Name & Date): Appendix B.
	Previous determination(s). File no. and date of response letter:
	Applicable/supporting case law:
	Applicable/supporting scientific literature: .
	Other information (please specify):

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

### 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

**REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): 8-22-07 E-4** A.

#### В. DISTRICT OFFICE, FILE NAME, AND NUMBER: Kansas City, Mo; Botts Road JDR; 2007-107

### C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: Mo County/parish/borough: Jackson City: Grandview Center coordinates of site (lat/long in degree decimal format): Lat. 94° N, Long. 34° W. Universal Transverse Mercator:

Name of nearest waterbody:

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Missouri River Name of watershed or Hydrologic Unit Code (HUC): 10300101

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

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: 8-15,16-2007

 $\square$ Field Determination. Date(s): 8-14-2007

### 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: 8,541linear feet: width (ft) and/or 0.26 acres. Wetlands: 0.39 acres.

- c. Limits (boundaries) of jurisdiction based on: 1987 Delineation Manual 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: PEM-2, PEM-4, PSS/PEM-2 do not have significant nexus to TNW.

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

<sup>&</sup>lt;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).

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: 432 acres Drainage area: 46 acres Average annual rainfall: 15.85 inches Average annual snowfall: 19.9 inches

# (ii) Physical Characteristics:

(a) <u>Relationship with TNW:</u>

 □ Tributary flows directly into TNW.
 □ Tributary flows through 4 tributaries before entering TNW.

Project waters are 30 (or more) river miles from TNW.
Project waters are Project waters are 1 (or less) river miles from RPW.
Project waters are 1 (or less) aerial (straight) miles from TNW.
Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW<sup>5</sup>: Unnamed tributary, unnamed tributary, unnamed tributary, Little Blue River. Tributary stream order, if known:

<sup>&</sup>lt;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>&</sup>lt;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.
	(b)	General Tributary Characteristics (check all that apply):         Tributary is:       Natural         Image: Artificial (man-made).       Explain:         Image: Manipulated (man-altered).       Explain:
		Tributary properties with respect to top of bank (estimate): Average width: 4 feet Average depth: 3 feet Average side slopes: <b>3:1</b> .
		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:MeanderingTributary gradient (approximate average slope):%
	(c)	Flow:         Tributary provides for: Ephemeral flow         Estimate average number of flow events in review area/year: 6-10         Describe flow regime:         .         Other information on duration and volume:
		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 OHWM <sup>6</sup> (check all indicators that apply): clear, natural line impressed on the bank changes in the character of soil shelving vegetation matted down, bent, or absent leaf litter disturbed or washed away sediment deposition water staining the presence of litter and debris destruction of terrestrial vegetation the presence of wrack line sediment sorting scour multiple observed or predicted flow events abrupt change in plant community
		Discontinuous OH w M. 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/characteristics         tidal gauges       other (list):
(iii)	Che	emical Characteristics:

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

Identify specific pollutants, if known:

.

<sup>&</sup>lt;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.

# E-4

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

Riparian corridor. Characteristics (type, average width): Riparian corridor, 20' wide.

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) <u>General Wetland Characteristics:</u> Properties: Wetland size: acres Wetland type. Explain: Wetland quality. Explain: Project wetlands cross or serve as state boundaries. Explain:
- (b) <u>General Flow Relationship with Non-TNW</u>: Flow is: **Pick List**. Explain:

Surface flow is: Pick List Characteristics:

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

# (c) <u>Wetland Adjacency Determination with Non-TNW:</u>

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. 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: The forested riparian corridor acts as a buffer from the pollutants and erosion associated with conventional agriculture. E-3 has flood storage capabilities. Buffering of pollutants and erosion, and flood storage act as a significant nexus.
- 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:

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

- **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:

acres.

Tributary waters: linear feet width (ft).

- Other non-wetland waters:
  - Identify type(s) of waters:

#### 3. Non-RPWs<sup>8</sup> 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: **494** linear feet **1.5** 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 jurisidictional. 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.<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).
- 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:

<sup>&</sup>lt;sup>8</sup>See Footnote # 3.

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

<sup>&</sup>lt;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*.

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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 <u>solely</u> 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 <u>sole</u> 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. SUPP	<b>CORTING DATA.</b> 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):
$\boxtimes$	Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
$\bowtie$	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.
$\bowtie$	U.S. Geological Survey map(s). Cite scale & quad name:Belton, Missouri 7.5' Quad.
$\boxtimes$	USDA Natural Resources Conservation Service Soil Survey. Citation: Jackson County, MO.
	National wetlands inventory map(s). Cite name: Belton, Missouir 7.5' Quad.
	State/Local wetland inventory map(s):
	FEMA/FIRM maps: .
	100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
$\bowtie$	Photographs: 🛛 Aerial (Name & Date): Figure 5.
	or 🖾 Other (Name & Date): Appendix B.
	Previous determination(s). File no. and date of response letter:
	Applicable/supporting case law:
	Applicable/supporting scientific literature:
	Other information (please specify):

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

### 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): 8-22-07 Isolated PEM-2, PEM-4, PSS/PEM-2

### B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Kansas City, Mo; Botts Road JDR; 2007-107

# C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: Mo County/parish/borough: Jackson City: Grandview Center coordinates of site (lat/long in degree decimal format): Lat. 94° N, Long. 34° W. Universal Transverse Mercator:

Name of nearest waterbody:

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Missouri River Name of watershed or Hydrologic Unit Code (HUC): 10300101

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: 8-15,16-2007

Field Determination. Date(s): 8-14-2007

#### 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: 8,541linear feet: width (ft) and/or 0.26 acres. Wetlands: 0.39 acres.
- **c. Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual** 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: **PEM-2**, **PEM-4**, **PSS/PEM-2** do not have significant nexus to TNW.

<sup>&</sup>lt;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>&</sup>lt;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: 432 acres
  - Drainage area: **acres** Average annual rainfall: 15.85 inches Average annual snowfall: 19.9 inches

# (ii) Physical Characteristics:

(a) <u>Relationship with TNW:</u>

 □ Tributary flows directly into TNW.
 □ Tributary flows through 2 tributaries before entering TNW.

Project waters are 30 (or more) river miles from TNW.
Project waters are Project waters are 1 (or less) river miles from RPW.
Project waters are 1 (or less) aerial (straight) miles from TNW.
Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW<sup>5</sup>: Unnamed tributary, Little Blue River. Tributary stream order, if known:

<sup>&</sup>lt;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>&</sup>lt;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.

(b)	General Tributary Characteristics (check all that apply):         Tributary is:					
	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):					
Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: . Presence of run/riffle/pool complexes. Explain: . Tributary geometry: <b>Pick List</b> Tributary gradient (approximate average slope): %						
(c)	<ul> <li><u>Flow:</u> 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:</li> </ul>					
	Surface flow is: <b>Pick List.</b> Characteristics:					
	Subsurface flow: <b>Pick List</b> . 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 changes in the character of soil shelving vegetation matted down, bent, or absent leaf litter disturbed or washed away sediment deposition water staining 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): <ul> <li>High Tide Line indicated by:</li> <li>oil or scum line along shore objects</li> <li>fine shell or debris deposits (foreshore)</li> <li>physical markings/characteristics</li> <li>tidal gauges</li> <li>other (list):</li> </ul>					
Che	emical Characteristics:					

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

Identify specific pollutants, if known:

(iii)

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<sup>&</sup>lt;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.

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

- Riparian corridor. Characteristics (type, average width):
- Wetland fringe. Characteristics:
- $\square$ Habitat for:
  - Federally Listed species. Explain findings:
  - Fish/spawn areas. Explain findings:
  - Other environmentally-sensitive species. Explain findings:
  - Aquatic/wildlife diversity. Explain findings:

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

#### (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:

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

All wetland(s) being considered in the cumulative analysis: Pick List ) acres in total are being considered in the cumulative analysis. Approximately (

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:

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

- 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. <u>RPWs that flow directly or indirectly into TNWs.</u>
  - 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:

acres.

Tributary waters: linear feet width (ft).

- Other non-wetland waters:
  - Identify type(s) of waters:
- 3. Non-RPWs<sup>8</sup> 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):

acres.

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

# 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:

<sup>&</sup>lt;sup>8</sup>See Footnote # 3.

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

<sup>&</sup>lt;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*.

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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 <u>solely</u> on the "Migratory Bird Rule" (MBR).
- Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: **Distance away** and higher elevation from RPW does not allow significant effect to physical, chemical, or biological characteristics of TNW.

Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the <u>sole</u> 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: PEM-2= ; PEM-4= ; PSS/PEM-2 ; Total= 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:  $\square$ 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:Belton, Missouri 7.5' Quad. USDA Natural Resources Conservation Service Soil Survey. Citation: Jackson County, MO. National wetlands inventory map(s). Cite name: Belton, Missouir 7.5' Quad. State/Local wetland inventory map(s):
  - FEMA/FIRM maps:
  - 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
    - Photographs: Aerial (Name & Date): Figure 5.

or Other (Name & Date): Appendix B.

- Previous determination(s). File no. and date of response letter:
- Applicable/supporting case law:
- Applicable/supporting scientific literature:
- Other information (please specify):

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