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

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): June 1, 2011

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Sacramento District, UDOT Southern Parkway, SPK-2000-50443, Segment 3A-2, Unnamed Ephemeral Wash M and N

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: **Utah** County/parish/borough: **Washington** City: **St. George**
Center coordinates of site (lat/long in degree decimal format): Lat. **37.0580°**, Long. **-113.4830°**
Universal Transverse Mercator: **12**
Name of nearest waterbody: **Fort Pearce Wash**
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: **Virgin River**
Name of watershed or Hydrologic Unit Code (HUC): **Fort Pearce Wash -Arizona and Utah, HUC 15010009. Upper Virgin River - Utah, HUC 15010008.**
☒ 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: **Unnamed Ephemeral Wash A through J, K, L, O, P, and Q**

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☒ Office (Desk) Determination. Date: **May 31, 2011**
☒ Field Determination. Date(s): **January 20, 2010, September 2, 2010, February 22, 2011, April 21, 2011, and April 30, 2011**

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 no** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: linear feet, wide, and/or acres.
      Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Pick List**
      Elevation of established OHWM (if known):

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain: **Unnamed Ephemeral Wash M and N are non-jurisdictional because they are intrastate, non-navigable waters with no significant nexus to the perennial Virgin River (an interstate [33 C.F.R. section 328.3(a)(2)] RPW and Navigable-in-Fact TNW).**

SECTION III: CWA ANALYSIS

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW:

Summarize rationale supporting determination:

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent":

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

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

(i) General Area Conditions:
Watershed size: **1267 square miles**
Drainage area: **9.6522 square miles**
Average annual rainfall: **8.25** inches
Average annual snowfall: **3.2** inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **2** tributaries before entering TNW.

Project waters are **5-10** river miles from TNW.
Project waters are **2-5** river miles from RPW.
Project waters are **5-10** aerial (straight) miles from TNW.
Project waters are **2-5** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW[5]: **Wash N starts at the downstream face of the Warner Draw Debris Basin since all upstream flows are essentially retained behind the dam and do not outflow under normal circumstances. Therefore, Wash N receives waters from unnamed ephemeral washes upstream of the project area and Wash M. Within the project area, about 70 feet downstream of the Wash M and N confluence, Wash N waters enter an underground St George Washington Canal pipe where they flow for approximately 2 miles before combining**

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

with year-round irrigation flow and storm drain inflow, and continue underground for 2 more miles before discharging to an earthen St George Washington Canal. The canal water flows approximately 0.4 miles before entering a seasonally flowing reach of Fort Pearce Wash (an interstate [33 C.F.R. section 328.3(a)(2)] seasonal RPW) in the vicinity of River Road, which flows about 2.6 miles to the perennial Virgin River (an interstate [33 C.F.R. section 328.3(a)(2)] RPW and Navigable-in-Fact TNW).

Tributary stream order, if known: **1st order stream**

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

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☐ Manipulated (man-altered). Explain:

Tributary properties with respect to top of bank (estimate):
Average width: **approximately 4 to 9** feet
Average depth: **approximately 2 to 4** feet
Average side slopes: **2:1.**

Primary tributary substrate composition (check all that apply):

☒ Silts	☒ Sands	☐ Concrete
☐ Cobbles	☒ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	

☒ Other. Explain: **Fine and very fine sands**

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Unstable, eroding, sloughing banks due to naturally highly erodible soils and grazing cattle.**
Presence of run/riffle/pool complexes. Explain:
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): **4** %

(c) Flow:

Tributary provides for: **Ephemeral flow**
Estimate average number of flow events in review area/year: **2-5**
Describe flow regime: **Flows are generated by winter rainfall and localized intense storm events (monsoons) in late summer and early fall.**
Other information on duration and volume: **A stain line and sediment observed in the 36" Warner Valley Road crossing culvert, and terrestrial vegetation on the upstream fence, indicates high volume flow has eroded Wash M banks, and transported organic material and sediment downstream towards Wash N. At the 24" St George Washington Canal inlet from Wash N, sediment observed in the pipe, woody debris on the trash rack, and above the inlet pipe and on upland vegetation, indicates that high volume flow has eroded the wash banks, transported terrestrial vegetation (organic carbon) and sediment downstream, pooled, and entered the pipe. While in the underground system, infiltration and evaporation of waters, sediment, nutrients, total dissolved solids, and organic material does not occur because the piping is constructed of solid materials.**

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

Subsurface flow: **No**. Explain findings: **No physical evidence observed during site visits.**
☐ Dye (or other) test performed:

Tributary has (check all that apply):
☒ Bed and banks
☒ OHWM[6] (check all indicators that apply):

☒ clear, natural line impressed on the bank	☒ the presence of litter and debris
☒ changes in the character of soil	☒ destruction of terrestrial vegetation
☒ shelving	☒ the presence of wrack line
☒ vegetation matted down, bent, or absent	☒ sediment sorting
☒ leaf litter disturbed or washed away	☒ scour
☒ sediment deposition	☐ multiple observed or predicted flow events
☒ water staining	☐ abrupt change in plant community
☒ other (list): **Ripples, surface relief**	

☐ Discontinuous OHWM.[7] Explain:

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

☐ High Tide Line indicated by:
- ☐ oil or scum line along shore objects
- ☐ fine shell or debris deposits (foreshore)
- ☐ physical markings/characteristics
- ☐ tidal gauges
- ☐ other (list):

☐ Mean High Water Mark indicated by:
- ☐ survey to available datum;
- ☐ physical markings;
- ☐ vegetation lines/changes in vegetation types.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: **Wash M and N streambank erosion is a source of sediment, inorganic material, TDS, and natural organic material (organic carbon) for the Fort Pearce Wash, Upper and Lower Virgin River Watersheds. During the February and April 2011 site visits, cattle grazing was observed along Wash M and N. Cattle grazing, in and around the washes, accelerates bank erosion and downstream sediment transport. Cattle manure contains nutrients (nitrogen, phosphorus, and organic carbon) that is transported from the project site to downstream waters.**

Identify specific pollutants, if known:

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

☒ Riparian corridor. Characteristics (type, average width): **Wash M and N flow contains sediment, nutrients, inorganic material, TDS, and carbon that helps support downstream riparian vegetation (i.e., willows, cottonwoods, cattails, etc).**

☐ Wetland fringe. Characteristics:

☒ Habitat for:

- ☒ Federally Listed species. Explain findings: **Wash M and N waters transport nutrients and organic material to the Virgin River where they provide a food source for the Federally endangered Virgin River chub (Gila robusta seminuda) and Woundfin (Plagopterus argentissimus), opportunistic feeders that consume insects, insect larvae, other invertebrates, algae, and debris. Wash M and N waters transport sediment, nutrients, total dissolved solids, and organic material to the Virgin River where they support critical riparian habitat for Federally endangered Southwestern Willow Flycatcher (Empidonax traillii extimus) and provide shade to reduce water temperature for the endangered fishes.**
- ☒ Fish/spawn areas. Explain findings: **The Virgin River contains little aquatic vegetation and produces a minimal amount of organic matter; therefore, the Virgin River fauna are heavily dependent on tributaries and floodplains that provide or support much of the food base. This rich, terrestrial food source enhances fish growth, fecundity, and/or survival. In many small freshwater fish, including the federally listed species, spawning is associated with seasonal rains and flooding of rivers. Flood-related changes in the river environment induce spawning, while the loss of food base, riparian habitat, and increased water temperature may be contributing factors limiting recruitment for these fish.**
- ☒ Other environmentally-sensitive species. Explain findings: **State of Utah Conservation Species: Virgin spinedace (Lepidomeda mollispinis mollispinis) and Flannelmouth sucker (Catostomus latipinnis) are Virgin River fish managed in accordance with Conservation Agreements. State of Utah wildlife species of concern: Desert sucker (Catostomus clarkii) are considered a sensitive species in Utah, where they are only found in the Virgin River and its tributaries. Speckled dace (Rhinichthys osculus) is found in large numbers throughout the Virgin River and its tributaries.**
- ☐ Aquatic/wildlife diversity. Explain findings:

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

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:
Wetland size: acres
Wetland type. Explain:
Wetland quality. Explain:

Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:

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

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

Subsurface flow: **Pick List**. Explain findings:
☐ Dye (or other) test performed:

(c) Wetland Adjacency Determination with Non-TNW:

☐ Directly abutting
☐ Not directly abutting

☐ Discrete wetland hydrologic connection. Explain:
☐ Ecological connection. Explain:
☐ Separated by berm/barrier. Explain:

(d) Proximity (Relationship) to TNW
Project wetlands are **Pick List** river miles from TNW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Flow is from: **Pick List.**
Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:
Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain:
Identify specific pollutants, if known:

(iii) Biological Characteristics. Wetland supports (check all that apply):
☐ Riparian buffer. Characteristics (type, average width):
☐ Vegetation type/percent cover. Explain:
☐ Habitat for:
☐ Federally Listed species. Explain findings:
☐ Fish/spawn areas. Explain findings:
☐ Other environmentally-sensitive species. Explain findings:
☐ Aquatic/wildlife diversity. Explain findings:

3. Characteristics of all wetlands adjacent to the tributary (if any)
All wetland(s) being considered in the cumulative analysis: **Pick List**
Approximately acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

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:

Wash M and N are about 7 miles upstream of the Virgin River, and physically connected by year-around St George Washington Canal irrigation water, storm drainage, and seasonal Fort Pearce Wash flows. The watershed area of Wash M and N is approximately 0.5 square miles (0.03% of the Fort Pearce Watershed).

Wash M and N flow, ephemerally, at an estimated rate of 1.95 cfs and 2.74 cfs, respectively. Wash M waters erode the wash banks and transport sediment, nutrients, inorganic and organic material, TDS, and carbon downstream where they combine with Wash N. Within the project area, about 70 feet downstream of the Wash M and N confluence, Wash N waters continue eroding banks and transport the combined sediment, nutrients, inorganic and organic material, TDS, and carbon to an underground St George Washington Canal pipe where they flow for approximately 2 miles before combining with year-round irrigation flow and storm drain inflow. Waters continue underground for 2 more miles before discharging to an earthen St George Washington Canal where they support riparian vegetation. Depending on the upstream flow volume, physical, and biological process, the canal water flows approximately 0.4 miles before entering a seasonally flowing reach of Fort Pearce Wash, in the vicinity of River Road, which flows about 2.6 miles to the perennial Virgin River.

Wash M and N waters transport sediment, nutrients, inorganic and organic material to the Virgin River where it provides a food source for endangered and other Virgin River fish species. In addition, Wash M and N waters transport sediment, nutrients, inorganic and organic material to the Virgin River where it supports riparian habitat that provides shade to reduce the water temperature for fish survival and nesting sites for the endangered Southwestern Willow Flycatcher.

According to the TMDL study, based on an average flow of 9 cfs, Fort Pearce Wash waters are the loading source for 7% of the TDS in the Lower Virgin River. According to the delineation report, the calculated average Wash M and N flow is about 2.3 cfs or about 25% of the calculated Fort Pearce Wash flow. If the Wash M and N drainage area is 0.03% of the Fort Pearce Watershed, using information obtained from the TMDL study and delineation report, Wash M and N contribute about 0.0005% of TDS to the Lower Virgin River.

Although Wash M and N waters transport sediment, nutrients, inorganic and organic material, TDS, and carbon downstream to St George Washington Canal, Fort Pearce Wash and the Virgin River, based on the volume, duration, and frequency of flow the contribution of Wash M and N waters and effects on the physical, biological, and chemical functions of the perennial Virgin River (an interstate [33 C.F.R. section 328.3(a)(2)] RPW and Navigable-in-Fact TNW), are insignificant.

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):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   ☐ TNWs: linear feet, wide, 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:

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   ☐ Tributary waters: linear feet wide.
   ☐ Other non-wetland waters: acres.
   Identify type(s) of waters:

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**

[8]See Footnote # 3.

☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet, wide.
☐ 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.[9]
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]

☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain:
☐ Other factors. Explain:

Identify water body and summarize rationale supporting determination:

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet, wide.
☐ Other non-wetland waters: acres.
Identify type(s) of waters:
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] **Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.***

☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  ☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☒ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: **Although Wash M and N waters transport sediment, nutrients, inorganic and organic material, TDS, and carbon downstream to St George Washington Canal, Fort Pearce Wash and the Virgin River, based on the volume, duration, and frequency of flow, the contribution of Wash M and N waters and effects on the physical, biological, and chemical functions of the perennial Virgin River (an interstate [33 C.F.R. section 328.3(a)(2)] RPW and Navigable-in-Fact TNW), are insignificant.**
☐ Other: (explain, if not covered above):

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, wide.
☐ 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): **4,412** linear feet, **approximately 4 to 9 feet** wide.
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **Delineation of Waters of the U.S., Southern Parkway-Segment 3A, Utah Department of Transportation, UDOT Project No. S-LC53(45), prepared by Horrocks Engineers, September 27, 2010. Southern Parkway Segment 3A-2 Spreadsheet, prepared by Horrocks Engineers, September 30, 2010.**
☒ 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: **UT-Washington Dome, 7.5" quadrangle**
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: **Web Soil Survey.**
☐ National wetlands inventory map(s). Cite name:
☐ State/Local wetland inventory map(s):
☐ FEMA/FIRM maps:
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☐ Aerial (Name & Date):
  or ☒ Other (Name & Date): **February 22, 2011 and April 21, 2011**
☒ Previous determination(s). File no. and date of response letter: **SPK-2000-50443, October 29, 2010.**
☐ Applicable/supporting case law:
☒ Applicable/supporting scientific literature:
2008 Final Utah 303(d) Report, Part 3, Integrated Report, List of Impaired Waters, March 2011.
TMDL Water Quality Study of the Virgin River Watershed, September 20, 2004.
Utah Administrative Code R317-2, Standards of Quality for Waters of the State, April 1, 2011.
Recovery Plan for the Virgin River Fishes, April 19, 1995.
Utah Division of Water Rights, Dam Safety, Warner Draw, Dam Number UT00396.
Geologic Map of the Washington Dome Quadrangle, Washington County, Utah, Janice Hayden, Utah Geological Society, ISBN 1-55791-719-1.
Utah Division of Water Quality, DWQ Station 4950180, Fort Pearce.
USGS Water Data Report 2010, Station 09408195 Fort Pearce Near St George, UT.
Fort Pearce Wash Master Plan, April 2007.
Upper and Lower Virgin River Watershed, Rapid Assessment Reports, June, 2009.

☐ Other information (please specify):

B. ADDITIONAL COMMENTS TO SUPPORT JD:

The Virgin River, which is a perennial, interstate Navigable-in-Fact waterway is the downstream TNW for Washes M and N. Lower Virgin-Colorado-Lake Mead Watershed-HUC 1501, originates in Kane County, Utah, and flows through Arizona into Lake Mead, Nevada. The Santa Clara/Virgin River confluence forms the 8-digit HUC boundary between the Upper Virgin River Watershed, Utah- HUC 15010008 and Lower Virgin River Watershed, Utah, Arizona, Nevada-HUC 15010010. Wash M and N waters flow into the St George Washington Canal pipe and earthen system, which flows to Fort Pearce Wash, which enters the Virgin River, approximately 0.25 miles upstream of the Santa Clara River.

The Virgin River, from stateline to the Santa Clara confluence and upstream to Quail Creek diversion (lower part of HUC 15010008), is listed as a 303(d) impaired water for Class 3B, warm water fish and aquatic life, and Class 4, agricultural uses. The specific pollutants are total dissolved solids (TDS), boron, and temperature. A Total Maxium Daily Load (TMDL) study has been approved and site-specific water quality standard adopted for TDS. Critical riparian Virgin River habitat supports the Federally endangered Southwestern Willow Flycatcher (Empidonax traillii extimus) and provides shade to maintain water temperature for several fish including; two Federally-listed endangered species, Virgin River chub (Gila robusta seminuda) and Woundfin (Plagopterus argentissimus); two state conservation species, Virgin spinedace (Lepidomeda mollispinis mollispinis) and Flannelmouth sucker (Catostomus latipinnis); one state species of concern, Desert sucker (Catostomus clarkii); and Speckled dace (Rhinichthys osculus).

Wash M and N, located in the northwesterly Fort Pearce Wash watershed (HUC 15010009), are identified in the delineation report as follows:

Waters	Length (linear feet)	Width (feet)	Drainage Area (square miles)	Waters Reference
Unnamed Ephemeral Wash 3A-2-M	2,954 (0.56 miles)	5 (photo 9)	0.2252	Figures 4d, 4e, 5a,5b
Unnamed Ephemeral Wash 3A-2- N	1,458 (0.28 miles)	9 (photo 10)	0.3194	Figures 4e, 5a, 5

Wash N starts at the downstream face of the Warner Draw Debris Basin since all upstream flows are essentially retained behind the dam and do not outflow under normal circumstances. The watershed area of Wash M and N, below the dam, is approximately 0.5 square miles (0.03% of the Fort Pearce Watershed).

Physical Function (Hydrology):

Precipitation in St George, Utah, mainly falls as rain, but snowfall is possible. The average annual total precipitation is 8.25 inches, evenly spread throughout the year. The average seasonal precipitation is; Winter 2.86 inches, Spring 1.85 inches, Summer 1.62 inches, and Fall 1.93 inches. The average total snowfall is 3.2 inches; Winter 2.8 inches, Spring and Fall 0.2 inches, respectively. Ephemeral Wash M and N flows are generated by winter rainfall and localized intense storm events (monsoons) in late summer and early fall.

The delineation report and site visits confirmed that Wash M and N exhibit the characteristics of waters of the United States; ordinary high water mark, bed and banks, etc. Although Wash M and N were not flowing during the February and April 2011 site visits, evidence of past flow and transport of sediment and natural organic materials downstream was observed and documented. Observed were a stain line and sediment/small rock in the 36" Warner Valley Road crossing culvert, and terrestrial vegetation on the upstream fence, which indicates high volume flow has eroded Wash M banks, and transported organic material and sediment downstream towards Wash N. At the 24" St George Washington Canal inlet pipe, sediment observed in the pipe and woody debris on the trash rack, above the inlet pipe structure, and on upland vegetation indicates that high volume flow has eroded the wash banks, transported terrestrial vegetation (organic material) and sediment downstream, pooled, and entered the pipe. Cattle grazing was observed and their manure was found in and near both washes. Cattle grazing, in and around the washes, accelerates bank erosion and downstream sediment transport. Nutrients from the cattle manure (nitrogen, phosphorus, and organic material) in addition to other organics and sediment and minerals are transported downstream during flow events.

Near the project boundary, the combined Wash M and N flow enters the 4 mile underground St George Washington Canal pipe system where the waters, sediment, nutrients, inorganic and organic material, TDS, and carbon are transported downstream. Infiltration and evaporation of underground flow does not occur because the piping is fused solid material. According to the delineation report, about 2 miles downstream of the inlet pipe, Wash N waters combine with year-around irrigation flow and periodic storm drain inflow. The irrigation flow transports the combined Wash M and N waters, sediment, nutrients, inorganic and organic material, TDS, and carbon downstream to a 0.25 mile earthen St George Washington Canal, upstream of River Road, where they support riparian vegetation (i.e., willows, cottonwoods, cattails, etc). Depending on the upstream flow volume, physical, and biological processes, waters continue approximately 0.15 miles downstream, along River Road, and enter Fort Pearce Wash downstream of the bridge where they combine with seasonal flows. Although earlier site visits found the 0.15 mile drainage dry, on April 30, 2011, turbid water was observed flowing in the River Road drainage towards Fort Pearce Wash.

Fort Pearce Wash is mostly ephemeral, except from approximately 0.5 miles upstream of River Road bridge to its Virgin River confluence, where non-stormwater discharges from development support about 90 days of seasonal flow. Although USGS station 094081095 provides useful information for the upper 2.4 miles of undeveloped Fort Pearce Wash, this data does not reflect the seasonal flow regime or physical, chemical, and biological characteristics in the lower developed 3.0 miles of Fort Pearce Wash to its Virgin River confluence.

Chemical Function (Soils and Water Quality):

Three applicable soil mapping units appear associated with Wash M and N, downstream of Warner Draw Dam: Badland (BA)-about 85%, Badland, very steep (BB)-about 8%, and Junction fine sandy loam, 1 to 2% slopes (JaB)-about 7%- which is non-saline, and consists of a maximum 20% limestone (calcium carbonate) and 7% gypsum (calcium sulfate dihydride). The gypsum, contains several thin beds of dolomite (calcium magnesium carbonate). No evidence of boron was found.

TDS is a measure of the combined content of all inorganic and organic substances in a liquid that can pass through a two micron filter. Potential Wash M and N sources of TDS include dissolved inorganic ions (Calcium, Magnesium, Carbonate, Sulfate, etc) from the unstable, highly erodable soils and organic substances from vegetation and cattle manure (nitrate, carbon, etc).

Water quality information (TDS, boron, etc) could not be found for Wash M and N waters. Utah Division of Water Quality (DWQ) collects samples from Fort Pearce Wash (Station 4950180), above its Virgin River confluence, and analyzes the water for TDS and temperature. From April 2, 1996 to June 13, 2006, DWQ collected and analyzed 39 water samples for TDS. During this time period, the minimum, maximum, and average TDS concentrations at Station 4950180 were 548 mg/L, 3834 mg/L, and 1729 mg/L, respectively. On January 22, 2010, USGS sampling at gauging station 094081095 found 1940 mg/L of TDS in waters upstream of DWQ Station 4950180 where sampling was not performed. Since June 2005, water quality sampling indicates that Fort Pearce Wash waters have complied with the site-specific TDS water quality standard for the Virgin River, and its tributaries; 2360 mg/L.

According to the TMDL study, based on an average flow of 9 cfs, Fort Pearce Wash waters are the loading source for 7% (12,155,496 kg/yr) of the TDS in the Lower Virgin River (173,649,940 kg/yr). According to the delineation report, the calculated average Wash M and N flow is about 2.3 cfs or about 25% of the calculated Fort Pearce Wash flow (9 cfs). If the Wash M and N drainage area is 0.03% of the Fort Pearce Watershed, using information obtained from the TMDL study and delineation report, Wash M and N contribute about 912 kg/yr (or 0.0005%) of TDS to the Lower Virgin River.

Biological Function:

Seasonally flooded habitats contribute to the biological productivity of the Virgin River system by producing allochthonous (humus, silt, organic detritus, colloidal matter, and plants and animals produced outside the river and brought into the river) organic matter which provides nutrients and terrestrial food sources to aquatic organisms (Hesse and Sheets 1993). The Virgin River contains little aquatic vegetation and a minimum amount of autochthonous (produced within the river) organic matter. Thus, the fauna of the Virgin River is heavily dependent on allochthonous energy inputs from the floodplain that provides or supports much of the food base. This rich, terestrial food source may enhance fish growth, fecundity, and/or survival. The endangered Virgin River chub (Gila robusta seminuda) and Woundfin (Plagopterus argentissimus), are opportunistic feeders that consume insects, insect larvae, other invertebrates, algae, and debris. Wash M and N waters transport nutrients, total dissolved solids, and organic material to the Virgin River where it provides a food source for endangered and other Virgin River fish species.

In addition, Wash M and N waters transport sediment, nutrients, inorganic and organic material, and carbon to the Virgin River where they support riparian habitat that provides shade to reduce the water temperature for fish survival and nesting sites for the endangered Southwestern Willow Flycatcher (Empidonax traillii extimus).

Summary:

Wash M and N flow ephemerally in response to winter rainfall and intense summer storm events. Wash M waters transport sediment, nutrients, inorganic and organic material, TDS, and carbon downstream where they combine with Wash N water, sediment, nutrients, inorganic and organic material, TDS, and carbon prior to entering an underground St George Washington Canal pipe where they flow for approximately 2 miles before combining with year-round irrigation flow and storm drain inflow. The combined waters continue underground for 2 more miles before discharging to an earthen St George Washington Canal where they support riparian vegetation. Depending on the upstream flow volume, physical, and biological process, the canal water flows approximately 0.4 miles before entering a seasonally flowing reach of Fort Pearce Wash (an interstate [33 C.F.R. section 328.3(a)(2)] seasonal RPW) in the vicinity of River Road, which flows about 2.6 miles to the perennial Virgin River (an interstate [33 C.F.R. section 328.3(a)(2)] RPW and Navigable-in-Fact TNW).

Although Wash M and N waters transport sediment, nutrients, inorganic and organic material, TDS, and carbon downstream to St George Washington Canal, Fort Pearce Wash and the Virgin River, based on the volume, duration, and frequency of flow, the effects of these waters on the physical, biological, and chemical functions of the Virgin River is insignificant.

Therefore, the Corps has determined Unnamed Ephemeral Wash M and N are non-jurisdictional because they are intrastate, non-navigable waters with no significant nexus to the Virgin River (an interstate [33 C.F.R. section 328.3(a)(2)] RPW and navigable-in-fact TNW).