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): January 20, 2016

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Albuquerque District, SPA-2012-00299-ABQ, Juan Tabo Hills West

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: New Mexico County: Bernalillo City: Albuquerque
Center coordinates of site (lat/long in degree decimal format): Lat. **35.0457381509705**°, Long. **-106.522364601568**°
Universal Transverse Mercator: *Click here to enter text.*
Name of nearest waterbody: Tijeras Arroyo
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Rio Grande
Name of watershed or Hydrologic Unit Code (HUC): 13020203

☑ 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: *Click here to enter a date.*

☑ Field Determination. Date(s): August 25, 2015, October 6, 2015

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: *Click here to enter text.*

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There are and are not "*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 (Tijeras Arroyo)

☐ 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: # width (ft) and/or # acres.
Wetlands: # acres.

c. Limits (boundaries) of jurisdiction based on: *Choose an item.*

Elevation of established OHWM (if known): *Click here to enter text.*

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 (ephemeral tributary to Tijeras Arroyo).
Explain: Ephemeral tributary to non-RPW has no significant nexus to a TNW. See supporting documentation in Section IIIF.

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: *Click here to enter text.*

Summarize rationale supporting determination: *Click here to enter text.*

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is "adjacent": *Click here to enter text.*

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: # 29.45 square miles (Tijeras Arroyo)
Drainage area: # 0.20 square miles (ephemeral tributary to Tijeras Arroyo)

Average annual rainfall: 8.65 inches
Average annual snowfall: 9.6 inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

- ☐ Tributary flows directly into TNW.
- ☑ Tributary flows through 1 tributary before entering TNW. (Tijeras Arroyo) (Ephemeral tributary to Tijeras Arroyo flows through 2 tritributaries before TNW)

Project waters are 10-15 river miles from TNW.
Project waters are *Choose an item.* river miles from RPW.
Project waters are 5-10 aerial (straight) miles from TNW.
Project waters are *Choose an item.* aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: *Click here to enter text.*

Identify flow route to TNW[5]: The ephemeral tributary flows west into the Tijeras Arroyo, which flows southwest for 9.5 miles before entering the Albuquerque South Diversion Channel (a concrete trapezoidal channel), which flows west for approximately 1.75 miles before emptying into the Rio Grande, a TNW.
Tributary stream order, if known: 1

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

Tributary is:

- ☑ Natural Throughout the review area, the ephemeral tributary is natural and open and only flows during signifcant preciptation events; however, it has been manipulated upstream of the review area as discussed below. Tijeras Arroyo is considered natural through the review area.
- ☐ Artificial (man-made). Explain: *Click here to enter text.*
- ☑ Manipulated (man-altered). Explain: The ephemeral tributary is fed by an 84-inch-wide diameter concrete pipe that captures and conveys stormwater runoff from the impervious surfaces of upstream residential development, which has contributed to the tributary's current fragmented condition. That pipe replaced the upper portion of the ephemeral

[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.

tributary as part of a previously permitted project.

Tributary properties with respect to top of bank (estimate):
Average width: 6 feet (ephemeral tributary) Widely varying due to interspersed areas of active floodplain islands and multiple low flow channels(Tijeras Arroyo)
Average depth: 0.75 feet (ephemeral tributary) 1-2 feet (Tijeras Arroyo)
Average side slopes: 3:1 (ephemeral tributary) near vertical (Tijeras Arroyo)

Primary tributary substrate composition (check all that apply):

- [x] Silts
- [x] Sands
- [ ] Concrete
- [x] Cobbles
- [ ] Gravel
- [ ] Muck
- [ ] Bedrock
- [ ] Vegetation. Type/% cover: *Click here to enter text.*
- [ ] Other. Explain: *Click here to enter text.*

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: The upper extent of the subject tributary within the review area is highly incised and instable due to an 84-inch-wide diameter concrete pipe that discharges stormwater flows from upstream residential development into the tributary. This is likely due to an inadequately-sized discharge pipe and the lack of adequate energy dissipation, which consists of an approximately 70-foot x 40-foot concrete pad located beneath the discharge pipe that has become highly undercut and instable (See Supplemental Documentation). Downstream of the concrete energy dissipator pad, the subject tributary bed contains rocks and concrete blocks measuring one to two feet wide, which were likely placed near the concrete pad for erosion control, but have migrated downstream over time. As the subject tributary extends west, its channel becomes less incised with average depths of 0.5 to two feet, and is defined by a gravelly to sandy bed with only seldom occurences of larger rocks. Within its mid-section, the channel of the subject tributary has developed several erosional-type braids, all of which run a short distance before becoming discontinous and percolating into the ground (See Supplemental Documentation). The subject tributary's main channel then continues westward and becomes narrow and incised near its confluence with Tijeras Arroyo. Though many erosional features exist within the adjacent uplands of the tributary's main channel and are actively headcutting, anthropogenic effects to the subject tributary, such as adjacent roads that have been been created and used by off-road vehicles over several decades, were noted during the field determinations to have likely facilitated these erosional features (ephemeral tributary). The banks of the Tijeras Arroyo in the project area are subject to eroding because they are on the outside of bends (Tijeras Arroyo).

Presence of run/riffle/pool complexes. Explain: None
Tributary geometry: Meandering
Tributary gradient (approximate average slope): 3%

(c) Flow:

Tributary provides for: Ephemeral tributary runs only in response to rain events. Tijeras Arroyo has intermittent flow which can result from snowmelt or monsoonal precipitation events in the watershed areas of the Sandia and Manzanos Mountains.

Estimate average number of flow events in review area/year: Ephemeral tributary 2-3, Tijeras Arroyo 5-10
Describe flow regime: tributary – ephemeral, Tijeras Arroyo - intermittent
Other information on duration and volume: Ephemeral tributary - ephemeral tributary likely experiences flashy and infrequent low duration flows that are dependent on the intensity of individual storm events (i.e. summer monsoons). A 2014 drainage analysis of the review area conducted by Mark Goodwin and Associates predicted a peak 100-year flow event of 848 cfs into the subject tributary from the 84-inch-wide diameter concrete discharge pipe located at the upper end of the review area, which feeds the tributary with stormflow from the upstream residential development. The duration and volume of flows within the subject ephemeral tributary is dependent on the individual precipitation event. The Federal Emergency Management Agency (FEMA) has determined that the subject tributary is located within a Zone X Floodplain, which is classified as an area located outside of a 500-year floodplain with minimal flood hazards (see Supplemental Documentation).

Surface flow is: Confined Characteristics: *Click here to enter text.*

Subsurface flow: Unknown Explain findings: *Click here to enter text.*

- [ ] Dye (or other) test performed: *Click here to enter text.*

Tributary has (check all that apply):

- [x] Bed and banks
- [x] OHWM[6] (check all indicators that apply):
  - [x] clear, natural line impressed on the bank
  - [x] changes in the character of soil
  - [x] shelving
  - [ ] vegetation matted down, bent, or absent
  - [ ] leaf litter disturbed or washed away
  - [x] sediment deposition
  - [ ] water staining
  - [x] the presence of litter and debris
  - [ ] destruction of terrestrial vegetation
  - [ ] the presence of wrack line
  - [x] sediment sorting
  - [x] scour
  - [ ] multiple observed or predicted flow events
  - [x] abrupt change in plant community rubber rabbitbrush and four-wing saltbush occur along the banks of the ephemeral tributary

[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.

☐ other (list): *Click here to enter text.*

☑ Discontinuous OHWM.[7] Explain: This box checked for ephemeral tributary only - OHWM characteristics are evident within some of the erosional braids of the subject tributary near their point of diversion from the main channel; however, all OHWM indicators quickly become discontinuous and altogether absent the further these braids progress from the main channel.

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

☐ 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): *Click here to enter text.*

☐ 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: *Click here to enter text.*

Identify specific pollutants, if known: *Click here to enter text.*

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

☐ Riparian corridor. Characteristics (type, average width): *Click here to enter text.*

☐ Wetland fringe. Characteristics: *Click here to enter text.*

☐ Habitat for:

- ☐ Federally Listed species. Explain findings: *Click here to enter text.*
- ☐ Fish/spawn areas. Explain findings: *Click here to enter text.*
- ☐ Other environmentally-sensitive species. Explain findings: *Click here to enter text.*
- ☐ Aquatic/wildlife diversity. Explain findings: *Click here to enter text.*

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: *Click here to enter text.*

Wetland quality. Explain: *Click here to enter text.*

Project wetlands cross or serve as state boundaries. Explain: *Click here to enter text.*

(b) General Flow Relationship with Non-TNW:

Flow is: *Choose an item.* Explain: *Click here to enter text.*

Surface flow is: *Choose an item.*

Characteristics: *Click here to enter text.*

Subsurface flow: *Choose an item.* Explain findings: *Click here to enter text.*

☐ Dye (or other) test performed: *Click here to enter text.*

(c) Wetland Adjacency Determination with Non-TNW:

☐ Directly abutting

☐ Not directly abutting

- ☐ Discrete wetland hydrologic connection. Explain: *Click here to enter text.*
- ☐ Ecological connection. Explain: *Click here to enter text.*
- ☐ Separated by berm/barrier. Explain: *Click here to enter text.*

(d) Proximity (Relationship) to TNW

Project wetlands are *Choose an item.* river miles from TNW.

Project waters are *Choose an item.* aerial (straight) miles from TNW.

Flow is from: *Choose an item.*

Estimate approximate location of wetland as within the *Choose an item.* 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: *Click here to enter text.*

Identify specific pollutants, if known: *Click here to enter text.*

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

☐ Riparian buffer. Characteristics (type, average width): *Click here to enter text.*

[7] Ibid.

☐ Vegetation type/percent cover. Explain: *Click here to enter text.*

☐ Habitat for:

☐ Federally Listed species. Explain findings: *Click here to enter text.*

☐ Fish/spawn areas. Explain findings: *Click here to enter text.*

☐ Other environmentally-sensitive species. Explain findings: *Click here to enter text.*

☐ Aquatic/wildlife diversity. Explain findings: *Click here to enter text.*

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

All wetland(s) being considered in the cumulative analysis: *Choose an item.*
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)
Y/N	#	*Y/N*	#
Y/N	#	*Y/N*	#
Y/N	#	*Y/N*	#
Y/N	#	*Y/N*	#

Summarize overall biological, chemical and physical functions being performed: *Click here to enter text.*

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:

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:

Tijeras Arroyo – According to the Tijeras Arroyo Biological Zone Open Space Resource Management Plan prepared by the City of Albuquerque, the Tijeras Arroyo is a perennial stream that becomes subsurface at the Four Hills fault. East of Four Hills Boulevard, Tijeras arroyo becomes a creek environment dominated by lower Montane Riparian Forest, whereas the western portion of Tijeras Arroyo near Four-Hills Boulevard has a gentle grade with a distinct active channel and broad floodplain which carry surface flows during flood events. The Tijeras Arroyo is a major thoroughfare for wildlife migrating between these mountain systems and the Rio Grande. Albuquerque's storm water management system in areas adjacent to the Tijeras Arroyo is designed to convey storm water runoff directly to the Tijeras Arroyo and then on to the Rio Grande. In most locations, this runoff enters the bosque prior to outfalling into the river. Water from municipal storm water outfalls is generally of low quality as storm water systems drain developed areas and contain high levels of automotive pollutants and debris, while irrigation return flows contain agricultural contaminants (e.g., fertilizers and pesticides). The problem of pollutants and toxins washing into the Tijeras Arroyo from adjacent developments and storm water conveyances has been well documented in the literature. (Tijeras Arroyo Biological Zone (Bio-Zone) Open Space Resource Management Plan, City of Albuquerque; Corrective Measures Evaluation Report for Tijeras Arroyo Groundwater, Sandia National Laboratories; Middle Rio Grande Total Maximum Daily Load (TMDL) For Fecal Coliform, NM Environment Department) Average annual rainfall & snowfall in the project area are approximately 10 inches/year. Precipitation in the Sandia Mountains can cause flow in the Tijeras Arroyo and these events typically occur during the monsoon season, large snow melt events, and spring rains. The upper reaches (review area to headwaters) are listed on the New Mexico 303(d) List of Impaired Surface Waters. The impaired segment is perennial in some portions and does not fully support the warmwater aquatic life designated use. Probable causes of impairment, according to the list, include Benthic-Macroinvertibrate Bioassessments (streams) and Nutrient/Eutrophication Biological Indicators. The probable sources of those impairments are channelization, discharges from municipal separate storm sewer systems (MS4), drought-related impacts, on-site treatment systems (septic systems and similar decentralized systems), rangeland grazing, and wastes from pets. The lower reach of the Tijeras Arroyo (Rio Grande to Four Hills Bridge) is not assessed because flow is intermittent, but similar issues related to storm water and associated contaminants are expected to affect the lower

reach when it is flowing. Based on this information, the Tijeras Arroyo has a significant physical, chemical and biological nexus to the TNW, the Rio Grande.

Ephemeral Tributary -. The watershed area for the tributary is very small compared to the watershed for the Tijeras Arroyo, and flows from the tributary are a small fraction of the Tijeras Arroyo flows. The tributary's flows are flashy, infrequent, low-duration, and low-volume in nature. This highly modified reach harbors little vegetation.. Water quality data is not available. See Section III.F for an analysis of the tributary's significant nexus to the nearest TNW, the Rio Grande.

1. **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: *Click here to enter text.*

2. **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: *Click here to enter text.*

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

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: # linear feet # width (ft), Or, # acres.
   - ☐ Wetlands adjacent to TNWs: # acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: *Click here to enter text.*.
   - ☐ 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: *Click here to enter text.*.

   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: *Click here to enter text.*

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
   - ☑ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C. (Tijeras Arroyo)

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☐ Tributary waters: # linear feet # width (ft).
   - ☐ Other non-wetland waters: # acres.
     Identify type(s) of waters: *Click here to enter text.*

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: *Click here to enter text.*
     - ☐ 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: *Click here to enter text.*

   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.

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

- ☐ 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: *Click here to enter text.*
- ☐ Other factors. Explain: *Click here to enter text.*

Identify water body and summarize rationale supporting determination: *Click here to enter text.*

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: *Click here to enter text.*
- ☐ Wetlands: # acres.

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

- ☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- ☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - ☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).

- ☑ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:
  Compound Tributary:
  Based on 1935 to 2014 historical aerial imagery of the review area obtained from the University of New Mexico (UNM), Earth Data Analysis Center (EDAC), the subject tributary has never been connected to an upper watershed of the nearby Manzano Mountains; its headwaters have been characterized by numerous erosional features that eventually converged into a single channel; it has had an approximate length of 1.25 river miles from its headwaters to Tijeras Arroyo**;** and its flows have likely been dependent on significant and localized precipitation events.

  During the late 1970s and through the early 1980s, a subdivision (hereafter referred to as the Four Hills Subdivision) was built over the headwaters of the subject tributary, permanently altering and fragmenting its upstream channel morphology. In 2006, a 327-acre subdivision (hereafter referred to as the Juan Tabo Hills [JTH] Subdivision) was beginning development over the upstream section of the subject tributary and downstream of the Four Hills Subdivision, furthering fragmentation of the subject tributary. In the JTH Subdivision, an 84-inch-wide diameter concrete pipe was placed underground in the approximate location of the upstream section of the subject tributary to convey stormwater flow from the surrounding development to the subject tributary. The JTH Subdivision was permitted by USACE, Albuquerque District (Permit No. 2004-00187)**.** Though the subject tributary had an approximate natural historic drainage area of 0.20 mi^2, it currently has a drainage area of approximately 0.33 mi^2. However, the majority (0.26 mi^2) of the current drainage area is gained from the JTH subdivision and occurs as stormwater from paved streets and other impervious surfaces, and the remaining drainage area (0.07 mi^2) occurs within the immediate review area as natural drainage from local, natural topography.

  Flow regimes in the review area are complex given the developed nature of the upstream portion of the drainage area, which conveys stormwater from the JTH subdivision to the natural arroyo via a large concrete pipe. Therefore, flow analysis of the entire subject tributary is difficult as the majority of the natural fluvial processes have been altered, disconnected, and masked. However, a 2014 drainage analysis of the review conducted by Mark Goodwin and Associates predicted a peak 100-year flow event of 848 cfs into the ephemeral tributary from the 84-inch-wide diameter concrete discharge pipe, which feeds the tributary with flows generated from the stormwater systems from upstream residential development (see Supplemental Documentation). One primary ephemeral tributary exists within the review area that extends to Tijeras Arroyo. Within the middle portion of the review area, several braids develop that typically represent morphological characteristics of a compound arroyo. However, during field observations, it was noted that all of the braids lose evidence of a defined channel (i.e. bed, banks, OHWM etc.) before reaching Tijeras Arroyo or the main channel of the ephemeral tributary. It is therefore reasonable to conclude that any water that flows down the braids quickly loses intensity and percolates into the ground. Surrounding anthropogenic uses of the land (i.e. recreational vehicle trails) have altered channel morphology and facilitated multiple erosional features that feed into the tributary which do not themselves have an OHWM.

[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.*

The ephemeral tributary is typical of ephemeral arroyos found throughout the arid Southwest region of the United States—its flows occur only during significant storm events, and can be characterized as infrequent, flashy, low-duration, and low-volume in nature. Additionally, given the highly developed nature of its upstream area, the ephemeral tributary has become highly degraded and fragmented and therefore has limited ecological or hydrological function.
Based on field determinations and data sources (See Section IV below), the ephemeral tributary does not possess a significant physical, chemical, or biological nexus with the Rio Grande, a TNW, because:

- The ephemeral tributary's contribution to the nearest TNW, the Rio Grande, is likely insignificant as compared to flows that are contributed by the Tijeras Arroyo. The watershed area for the tributary is very small compared to the watershed for the Tijeras Arroyo, and flows from the tributary are a small fraction of the Tijeras Arroyo flows (see Paragraph III.B.1).
- The Rio Grande and its floodplain are characterized as riparian habitat, with mature cottonwood (*Populus* spp.) galleries and poor- to well-developed understories. The ephemeral tributary is defined as the Arroyo Riparian vegetation type (Dick-Peddie 1993), dominated by Apache plume (*Fallugia paradoxa*), four-wing saltbush (*Atriplex canescens*), and various grasses. There is limited wildlife habitat within the review area, especially as compared to the Tijeras Arroyo which provides connectivity throughout the larger Tijeras watershed to the Rio Grande. The adjacent upstream JTH Subdivision deters any biological connection as that portion of the tributary is non-existent, with only an underground concrete pipe conveying water and preventing any downstream migration routes to the Rio Grande from the uplands.
- No water quality data is available for the tributary within the review area.

Based on the above information, the ephemeral tributary does not possess more than a speculative or insubstantial effect on the physical, chemical and/or biological integrity of the Rio Grande, a TNW.

☐ Other: (explain, if not covered above): *Click here to enter text.*

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

☐ Non-wetland waters (i.e., rivers, streams): # linear feet # width (ft).

☐ Lakes/ponds: # acres.

☐ Other non-wetland waters: # acres. List type of aquatic resource: *Click here to enter text.*.

☐ 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: *Click here to enter text.*.

☐ 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: *Click here to enter text.*

☐ 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: *Click here to enter text.*

☐ Corps navigable waters' study: *Click here to enter text.*

☑ U.S. Geological Survey Hydrologic Atlas: HUC 8 and 12 digit boundaries depicted on attached maps (Supporting Documentation).

- ☐ USGS NHD data.
- ☑ USGS 8 and 12 digit HUC maps.

☑ U.S. Geological Survey map(s). Cite scale & quad name: USGS 1:24k; NM-Albuquerque East

☑ USDA Natural Resources Conservation Service Soil Survey. Citation: (NRCS 2015). Soils within subject ephemeral tributary area consist of Gila fine sandy loam and Bluepoint–Kokan Association soils (NRCS 2015). Gila soils are typically found on alluvial fans and floodplains and have a parent material of alluvium derived from igneous and sedimentary rock; they rarely flood, have no frequency of ponding, and typically occur where the depth to water table exceeds 80 inches. Bluepoint–Kokan soils are typically found on floodplains and alluvial flats and have a parent material of sandy alluvium and/or eolian sands; they have no frequency of ponding or flooding, and typically occur where the depth to water table exceeds 80 inches.

☐ National wetlands inventory map(s). Cite name: *Click here to enter text.*

- [ ] State/Local wetland inventory map(s): *Click here to enter text.*
- [x] FEMA/FIRM maps: Ephemeral tributary is located within Zone X (minimal flood risk). (See FIRMette map in Supporting Documentation)
- [ ] 100-year Floodplain Elevation is: *Click here to enter text.* (National Geodectic Vertical Datum of 1929)
- [x] Photographs: [x] Aerial (Name & Date): NAIP 2011, 1967 Aerial Photos obtained from Earth Data Analysis Center, University of New Mexico
  or [x] Other (Name & Date): Field Determination Photos (August 2015, October 2015)
- [ ] Previous determination(s). File no. and date of response letter: *Click here to enter text.*
- [ ] Applicable/supporting case law: *Click here to enter text.*
- [ ] Applicable/supporting scientific literature: *Click here to enter text.*
- [ ] Other information (please specify): *Click here to enter text.*

B. ADDITIONAL COMMENTS TO SUPPORT JD: *Click here to enter text.*

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Deanna Cummings
Senior Project Manager

January 20, 2016
Date