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): 24 February 2016

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Galveston District, SWG-2009-00937, Restoration Systems, LLC, Upland

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: Texas County/Parish: Waller City:
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. 29.895831 ° N, Long. 95.869988 ° W;
Universal Transverse Mercator: UTM: 15, 3310704 N., 222849 E.,NAD: 83
Name of nearest water body: Cypress Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: None
Name of watershed or Hydrologic Unit Code (HUC): Spring - - 12040102
☒ 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: 20 January 2016
☒ Field Determination. Date(s): 2 July 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:

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: width (ft) 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:

[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.

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, fill out Section III.D.2 and 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 water body[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the water body 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: **square miles**
Drainage area: **Pick List**
Average annual rainfall: inches
Average annual snowfall: inches

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

Project waters are **Pick List** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Project waters are **Pick List** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW[5]:
Tributary stream order, if known:

[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.

(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: feet
Average depth: feet
Average side slopes: **Pick List**

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: **Pick List**
Tributary gradient (approximate average slope): %

(c) Flow:

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:
Surface flow is: **Pick List**. Characteristics:
Subsurface flow: **Pick List**. Explain findings:
☐ 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):	

☐ Discontinuous OHWM.[7] Explain:

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

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:

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

[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 water body'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.

(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) 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:

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 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:

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:

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

☐ Water body 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 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.[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:

[8] See Footnote # 3.
[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.*

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

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:
☐ Other: (explain, if not covered above):

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

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **Ecosystem Planning & Restoration**
☒ 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: **Spring - - 12040102**
☐ USGS NHD data
☒ USGS 8 and 12 digit HUC maps
☐ Galveston District's Approved List of Navigable Waters
☒ U.S. Geological Survey map(s). Cite scale & quad name: **1971 Warren Lake, Tex. USGS Quadrangle Map (Photorevised 1980); 1971 Hockley Mound, Tex. USGS Quadrangle Map (Photorevised 1980); 1960 Waller, Tex. USGS Quadrangle Map (Photorevised 1980)**
☐ USDA Natural Resources Conservation Service Soil Survey. Citation:
☒ National wetlands inventory map(s). Cite name: **Online USFWS NWI Mapper**
☐ State/Local wetland inventory map(s):
☒ FEMA/FIRM maps: **Waller County, Texas Panel 300 of 425 dated 18 Februaru 2009**
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): **Google Earth 1995-2015**
or ☐ Other (Name & Date):
☐ 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): 24 February 2016

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Galveston District, SWG-2009-00937, Restoration Systems, LLC, Wetlands WA001, WA002, WA003, WA004, WA005, WA006, WA007, WA008, WA009, WA011, WA012, WA014, WA015, WA016, and WA017

C. PROJECT LOCATION AND BACKGROUND INFORMATION:
State: Texas County/Parish: Waller City:
Center coordinates of site (lat/long in degree decimal format, NAD-83): Lat. see page 10° N, Long. see page 10° W;
Universal Transverse Mercator: UTM: 15, see page 10 N., see page 10 E.,NAD: 83
Name of nearest water body: Cypress Creek
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Cypress Creek
Name of watershed or Hydrologic Unit Code (HUC): Spring - - 12040102
☒ 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: 20 January 2016
☒ Field Determination. Date(s): 2 July 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:

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):** [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: width (ft) and/or acres
      Wetlands: **88.79** 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):**[3]
   ☐ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain:

[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.

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, fill out Section III.D.2 and 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 water body[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the water body 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: **1983.63 square miles**
Drainage area: **Pick List**
Average annual rainfall: **42.66** inches
Average annual snowfall: **0.0** inches

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

Project waters are **30 (or more)** river miles from TNW.
Project waters are **1 (or less)** river miles from RPW.
Project waters are **20-25** aerial (straight) miles from TNW.
Project waters are **1 (or less)** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain:

Identify flow route to TNW[5]: **Cypress Creek flows directly into the traditional navigable portion of Cypress Creek, the nearest TNW.**

[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 stream order, if known: **4**

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

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain:
☒ Manipulated (man-altered). Explain: **Appears it was deepened to increase capacity.**

Tributary properties with respect to top of bank (estimate):
Average width: **25** feet
Average depth: **2** 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:		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: **Fairly stable. Tributary has riparian buffer on both sides.**
Presence of run/riffle/pool complexes. Explain: **None**
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): **1-2** %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **20 (or greater)**
Describe flow regime:
Other information on duration and volume: **Tributary is perennial**
Surface flow is: **Confined.** Characteristics:
Subsurface flow: **Unknown**. Explain findings:
☐ 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):	

☐ Discontinuous OHWM.[7] Explain:

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

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: **Water color varies depending on storm water input. Very turbid at times and clear at times.**
Identify specific pollutants, if known: **Cypress Creek is listed as impaired due to bacteria**

[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 water body'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.

(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) General Wetland Characteristics:
Properties:
Wetland size: **88.79** acres
Wetland type. Explain: **PEM with 12.87 acres of PSS**
Wetland quality. Explain: **medium to high**
Project wetlands cross or serve as state boundaries. Explain:

(b) General Flow Relationship with Non-TNW:
Flow is: **Intermittent flow**. Explain:

Surface flow is**: Discrete**
Characteristics:

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

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☒ Not directly abutting
☒ Discrete wetland hydrologic connection. Explain: **Connected by 100-year floodplain of Cypress Creek**
☐ 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 **20-25** aerial (straight) miles from TNW.
Flow is from: **Wetland to navigable waters.**
Estimate approximate location of wetland as within the **50 - 100-year** 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: **During site visit, water in wetlands was clear. Chemical characteristics are unknown.**
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 and scrub-shrub; 100 percent cover**
☒ 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: **30 (or more)**
Approximately (**6123.81**) 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)
See	**Attached**	**7 pages**	

Summarize overall biological, chemical and physical functions being performed: **Cypress Creek is a relatively permanent water and a fourth order stream within this relevant reach, which is approximately 42.8 miles long and flows directly into the traditional navigable water portion of Cypress Creek. The relevant reach starts in Mound Creek approximately 2 miles south of Waller, Texas (approximately 12.5 miles upstream of the project site), continues in Cypress Creek, which is formed by the confluence of Mound Creek and Snake Creek, and ends at the traditional navigable water portion of Cypress Creek which is at Stuebner Airline Road, in Houston (approximately 30.3 miles downstream of the project site). The relevant reach is located within a rapidly developing area that was historically agricultural fields. The agricultural fields have gradullay been developed into residential subdivisions and commercial properties. The upstream portion of the relevant reach is still located primarily in agricultural lands.**

There are 324 offsite adjacent wetlands within this relevant reach that are located northwest and east of the tract and total approximately 6,123.81 acres, based on the NWI, FEMA FIRMs, and Google Earth aerial photos. Approximately 1959.0 acres of these wetlands are abutting Mound and/or Cypress Creek. Of these abutting wetlands, approximately 1365.97 acres are emergent, 570.43 acres are forested and 22.6 acres are scrub-shrub wetlands. Approximately 4,164.81 acres of these adjacent wetlands are not directly abutting Mound and/or Cypress Creek, of which approximately 3,262.44 acres are emergent, 477.81 acres are forested and 424.56 acres are scrub-shrub wetlands. These wetlands range from approximately 0.1 to 42 river miles and from approximately 0.15 to 25 aerial miles from the traditional navigable portion of Cypress Creek, the nearest Traditional Navigable Water (TNW). Cypress Creek flows into Spring Creek, which flows into the West Fork San Jacinto River, which flows into Lake Houston; a primary source of drinking water for the Houston area. Fifteen wetlands (WA001, WA002, WA003, WA004, WA005, WA006, WA007, WA008, WA009, WA011, WA012, WA014, WA015. WA016, and WA017) on the tract totaling 88.79 acres are adjacent to this relevant reach of Cypress Creek. The wetlands are neighboring (not abutting) Cypress Creek. Based on our analysis, we determined that there are a total of 339 adjacent wetlands located within this relevant reach of Cypress Creek. These wetlands abut or are neighboring Mound and/or Cypress Creeks and total approximately 6,213 acres.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Cypress Creek and all similarly situated adjacent wetlands within this relevant reach) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 42.8-mile relevant reach of Mound and Cypress Creeks and the nearest TNW, also Cypress Creek. The approximate 6,213 acres of adjacent wetlands provide important filtration to aid in the elimination and treatment of bacteria to the downstream TNW; it also serves to aid in the reduction of thermal and chemical pollutants flowing into Cypress Creek. Cypress Creek is identifed by the TCEQ as a 303(d) impaired water for bacteria contamination; therefore the wetlands in this reach provide important removal properties associated with the removal of bacteria. The wetlands are situated in a rapidly developing area that is converting farm land to residential and commercial properties. The aquatic resources within this reach provide more than speculative or insubstantial effects that are inseperably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Mound and Cypress Creeks, there are approximately 6,213 acres of similarly situated wetlands abutting or neighboring Mound and/or Cypress Creeks. The TNW portion of Cypress Creek is immediately downstream of this relevant reach and approximately 5 miles upstream of Lake Houston; a major source of drinking water for the Houston area. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing approximately 1,959 acres of abutting wetlands would increase the velocity and flow into Cypress Creek and the West Fork San Jacinto River, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNW; and potentially impact the dam at Lake Houston. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that are inseperably bound to maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Mound or the non-TNW portion of Cypress Creek and it's adjacent wetlands and the waters of the TNW to fulfill their life cycle requirements. Cypress Creek is a RPW and has a direct hydrologic conection with the TNW; as such, it is more likely to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Cypress Creek for portions of their life cycles; but there is insufficient evidence to identify specific species that requires both the aquatic resources within this relevant reach of Mound and Cypress Creeks and the waters of the TNW to fulfill life cycle requirements. The abutting and neighboring wetlands aid in providing species habitat, shelter from

predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Mound and Cypress Creek, although speculative, provide more than an important effect on the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 42.8-mile relevant reach of Mound and Cypress Creeks and its 6,213 acres of adjacent wetlands provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Cypress Creek). In conclusion, it is our opinion that this relevant reach of Mound and Cypress Creeks and its adjacent wetlands are waters of the United States subject to Section 404 of the Clean Water Act.

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: **This relevant reach of Mound and Cypress Creeks is a relatively permanent water and a fourth order stream that flows into the traditional navigable water portion Cypress Creek, the downstream TNW. There are approximately 1,959 acres of abutting wetlands and 4,254 acres of neighboring wetlands. This relevant reach of Mound and Cypress Creeks and its adjacent wetlands provide important filtration to aid in the elimination and treatment of bacteria as well as thermal and chemical pollutants. The system also retains flood waters and reduces overbank flooding downstream, thereby decreasing the velocity and amount of water flowing downstream into the West Fork San Jacinto River and Lake Houston (water supply reservoir for Houston area). Retaining flood waters also reduces scouring and the loss of property as well as preserving the physical attributes of the downstream TNW. Mound and Cypress Creeks and their adjacent wetlands also likely support aquatic organisms and the adjacent wetlands provide species habitat, shelter from predators and produce nutrients and detritus as a food source for downstream organisms. Based on this information, we determined that this relevant reach of Mound and Cypress Creeks and its adjacent wetlands provide more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of the downstream TNW (Cypress Creek).**

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: **Water is visible in Cypress Creek (0.3-mile north of the project site) in all of the Google Earth aerial photos from 1944 to present. Therefore, it is a perennial relatively permanent water.**
   ☐ 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 width (ft)
   ☐ Other non-wetland waters: acres
   Identify type(s) of waters:

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
   ☐ Water body 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 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: 88.79 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]

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

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

Identify water body and summarize rationale supporting determination:

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

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:
☐ Other: (explain, if not covered above):

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

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource:
☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):
☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: **Ecosystem Planning & Restoration**
☒ 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: **Spring -- 12040102**
☐ USGS NHD data
☒ USGS 8 and 12 digit HUC maps
☐ Galveston District's Approved List of Navigable Waters
☒ U.S. Geological Survey map(s). Cite scale & quad name: **1:24,000 Warren Lake, Tex. USGS Quadrangle 1971 (Photorevised 1980); Hockley Mound, Tex. USGS Quadrangle 1971 (Photorevised 1980); Waller, Tex. USGS Quadrangle 1960 (Photorevised 1980)**
☐ USDA Natural Resources Conservation Service Soil Survey. Citation:
☒ National wetlands inventory map(s). Cite name: **Online USFWS NWI Mapper**

---

[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.*

☐ State/Local wetland inventory map(s):
☒ FEMA/FIRM maps: **Waller County, Texas Panel300 of 425 dated 18 February 2009**
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date): **Google Earth 1943-2015**
or ☐ Other (Name & Date):
☐ 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:
Cypress Creek is a relatively permanent water and a fourth order stream within this relevant reach, which is approximately 42.8 miles long and flows directly into the traditional navigable water portion of Cypress Creek. The relevant reach starts in Mound Creek approximately 2 miles south of Waller, Texas (approximately 12.5 miles upstream of the project site), continues in Cypress Creek, which is formed by the confluence of Mound Creek and Snake Creek, and ends at the traditional navigable water portion of Cypress Creek which is at Stuebner Airline Road, in Houston (approximately 30.3 miles downstream of the project site). The relevant reach is located within a rapidly developing area that was historically agricultural fields. The agricultural fields have gradullay been developed into residential subdivisions and commercial properties. The upstream portion of the relevant reach is still located primarily in agricultural lands.

There are 324 offsite adjacent wetlands within this relevant reach that are located northwest and east of the tract and total approximately 6,123.81 acres, based on the NWI, FEMA FIRMs, and Google Earth aerial photos. Approximately 1959.0 acres of these wetlands are abutting Mound and/or Cypress Creek. Of these abutting wetlands, approximately 1365.97 acres are emergent, 570.43 acres are forested and 22.6 acres are scrub-shrub wetlands. Approximately 4,164.81 acres of these adjacent wetlands are not directly abutting Mound and/or Cypress Creek, of which approximately 3,262.44 acres are emergent, 477.81 acres are forested and 424.56 acres are scrub-shrub wetlands. These wetlands range from approximately 0.1 to 42 river miles and from approximately 0.15 to 25 aerial miles from the traditional navigable portion of Cypress Creek, the nearest Traditional Navigable Water (TNW). Cypress Creek flows into Spring Creek, which flows into the West Fork San Jacinto River, which flows into Lake Houston; a primary source of drinking water for the Houston area. Fifteen wetlands (WA001, WA002, WA003, WA004, WA005, WA006, WA007, WA008, WA009, WA011, WA012, WA014, WA015. WA016, and WA017) on the tract totaling 88.79 acres are adjacent to this relevant reach of Cypress Creek. The wetlands are neighboring (not abutting) Cypress Creek. Based on our analysis, we determined that there are a total of 339 adjacent wetlands located within this relevant reach of Cypress Creek. These wetlands abut or are neighboring Mound and/or Cypress Creeks and total approximately 6,213 acres.

The Corps did find evidence/data to support the statement that these waters (this relevant reach of Cypress Creek and all similarly situated adjacent wetlands within this relevant reach) provide more than a speculative or insubstantial effect upon the chemical integrity of the downstream TNW, which this relevant reach flows into. There is a direct surface hydrologic connection between this approximate 42.8-mile relevant reach of Mound and Cypress Creeks and the nearest TNW, also Cypress Creek. The approximate 6,213 acres of adjacent wetlands provide important filtration to aid in the elimination and treatment of bacteria to the downstream TNW; it also serves to aid in the reduction of thermal and chemical pollutants flowing into Cypress Creek. Cypress Creek is identifed by the TCEQ as a 303(d) impaired water for bacteria contamination; therefore the wetlands in this reach provide important removal properties associated with the removal of bacteria. The wetlands are situated in a rapidly developing area that is converting farm land to residential and commercial properties. The aquatic resources within this reach provide more than speculative or insubstantial effects that are inseperably bound to the chemical integrity of the downstream TNW.

Within this relevant reach of Mound and Cypress Creeks, there are approximately 6,213 acres of similarly situated wetlands abutting or neighboring Mound and/or Cypress Creeks. The TNW portion of Cypress Creek is immediately downstream of this relevant reach and approximately 5 miles upstream of Lake Houston; a major source of drinking water for the Houston area. The retention of water and retardation of overbank flooding associated with adjacent wetlands is vital to maintain and protect the physical integrity of the downstream TNW. The effects of removing approximately 1,959 acres of abutting wetlands would increase the velocity and flow into Cypress Creek and the West Fork San Jacinto River, resulting in more than a speculative or insubstantial effect upon the physical attributes of the downstream TNW; and potentially impact the dam at Lake Houston. Increased flow will increase "out of bank" flooding and scouring, resulting in loss of property and the physical attributes of the TNW. Therefore, the aquatic resources within this reach provide more than speculative or insubstantial effects that are inseperably bound to maintain the physical integrity of the downstream TNW.

There are no known species found in this review area that require the aquatic resources of Mound or the non-TNW portion of Cypress Creek and it's adjacent wetlands and the waters of the TNW to fulfill their life cycle requirements. Cypress Creek is a RPW and has a direct hydrologic conection with the TNW; as such, it is more likely to have aquatic organisms that require both features (TNW and waters in this reach). It is highly feasible that species of fishes and/or invertebrates utilize Cypress Creek for portions of their life cycles; but there is insufficient evidence to identify specific species that requires both the aquatic resources within this relevant reach of Mound and Cypress Creeks and the waters of the TNW to fulfill life cycle requirements. The abutting and neighboring wetlands aid in providing species habitat, shelter from predators, and detritus and nutrients as a food source. Therefore, it is the Corps' conclusion, that the aquatic resources within this relevant reach of Mound and Cypress Creek, although speculative, provide more than an important effect on the biological integrity of the downstream TNW.

In conclusion, we have determined that there is sufficient evidence to support the statement that the aquatic resources within this approximate 42.8-mile relevant reach of Mound and Cypress Creeks and its 6,213 acres of adjacent wetlands provide a significant nexus (more than speculative or insubstantial effect) to the chemical, physical and/or biological integrity of the downstream TNW (Cypress Creek).

In conclusion, it is our opinion that this relevant reach of Mound and Cypress Creeks and its adjacent wetlands are waters of the United States subject to Section 404 of the Clean Water Act.

Adjacent Wetlands in Significant Nexus Determination

Directly Abuts (Y/N)?	Size (In Acres)	Directly Abuts (Y/N)?	Size (In Acres)	Directly Abuts (Y/N)?	Size (In Acres)
	See Attachment				

Wetlands on Project Site within this Relevant Reach

Wetland	Latitude	Longitude	UTM Zone	UTM Easting	UTM Northing	Acres
WA001	29.892937 N	95.869416 W	15	222896	3310382	20.41
WA002	29.897382 N	95.868845 W	15	222964	3310873	1.84
WA003	29.891896 N	95.865455 W	15	223276	3310257	11.36
WA004	29.895979 N	95.866379 W	15	223198	3310712	1.20
WA005	29.898876 N	95.865913 W	15	223251	3311032	1.92
WA006	29.900340 N	95.868177 W	15	223036	3311200	18.02
WA007	29.902969 N	95.867901 W	15	223070	3311491	3.40
WA008	29.902657 N	95.872171 W	15	222657	3311466	9.47
WA009	29.890776 N	95.870594 W	15	222776	3310145	3.30
WA011	29.897148 N	95.871143 W	15	222741	3310853	5.62
WA012	29.899814 N	95.871932 W	15	222672	3311151	2.08
WA014	29.895505 N	95.865582 W	15	223274	3310657	2.75
WA015	29.891513 N	95.864005 W	15	223415	3310211	0.82
WA016	29.890756 N	95.863538 W	15	223458	3310126	2.27
WA017	29.889916 N	95.868576 W	15	222969	3310045	4.33

SWG-2009-00937 Relevant Reach Adjacent Wetlands

Wetland #	Acreage	Class	Abut?
25	1.28	PEM	Yes
137	1022	PEM	Yes
153	342.69	PEM	Yes
50	1.31	PFO	Yes
51	1.56	PFO	Yes
114	64	PFO	Yes
116	0.62	PFO	Yes
117	5.46	PFO	Yes
118	13.94	PFO	Yes
121	1.88	PFO	Yes
128	11	PFO	Yes
134	5.3	PFO	Yes
163	17.2	PFO	Yes
176	26.1	PFO	Yes
214	279.44	PFO	Yes
257	12.6	PFO	Yes
269	5.22	PFO	Yes
273	31.5	PFO	Yes
275	37.3	PFO	Yes
283	45.8	PFO	Yes
321	10.2	PFO	Yes
162	22.6	PSS	Yes
	1959		

Wetland #	Acreage	Class	Abut?
1	8.4	PEM	No
2	0.13	PEM	No
3	8.31	PEM	No
4	7.17	PEM	No
6	6.35	PEM	No
8	1.22	PEM	No
9	0.91	PEM	No
10	0.47	PEM	No
11	31.81	PEM	No
12	40.16	PEM	No
13	1.21	PEM	No
14	0.83	PEM	No
15	2.91	PEM	No
16	2.35	PEM	No
17	1.5	PEM	No
18	4.42	PEM	No
19	0.25	PEM	No
20	0.1	PEM	No
21	0.89	PEM	No
22	1.77	PEM	No
23	1.34	PEM	No
24	0.1	PEM	No
26	0.1	PEM	No
27	0.32	PEM	No
38	3.8	PEM	No
29	2.33	PEM	No
30	0.56	PEM	No
32	3.55	PEM	No
33	0.42	PEM	No
34	1.64	PEM	No
35	0.46	PEM	No
36	0.54	PEM	No
37	2.89	PEM	No
38	2.98	PEM	No
39	1.15	PEM	No
40	4.86	PEM	No
41	1	PEM	No
42	1.43	PEM	No
43	8.98	PEM	No
44	0.14	PEM	No
45	0.56	PEM	No
46	1.17	PEM	No
47	3.31	PEM	No

48	7.58	PEM	No
49	17.2	PEM	No
53	4.16	PEM	No
55	9.9	PEM	No
56	1.23	PEM	No
57	0.29	PEM	No
58	10.1	PEM	No
59	0.89	PEM	No
60	0.14	PEM	No
61	1.89	PEM	No
62	7	PEM	No
63	0.81	PEM	No
65	1.15	PEM	No
66	1.27	PEM	No
67	0.48	PEM	No
68	2.23	PEM	No
69	0.76	PEM	No
70	1.12	PEM	No
71	2.73	PEM	No
72	0.78	PEM	No
73	1.27	PEM	No
74	0.8	PEM	No
75	3.71	PEM	No
76	0.65	PEM	No
79	0.47	PEM	No
80	9.21	PEM	No
81	0.97	PEM	No
82	2.75	PEM	No
84	2.31	PEM	No
85	1.25	PEM	No
87	0.41	PEM	No
89	10.8	PEM	No
90	0.87	PEM	No
91	18.6	PEM	No
92	1.73	PEM	No
93	0.67	PEM	No
94	0.62	PEM	No
95	0.49	PEM	No
96	1.75	PEM	No
98	63.6	PEM	No
99	2.89	PEM	No
100	2.83	PEM	No
101	166	PEM	No
102	0.44	PEM	No
103	0.62	PEM	No
104	0.32	PEM	No
105	19.2	PEM	No

106	12.6	PEM	No
107	0.5	PEM	No
108	0.44	PEM	No
109	0.13	PEM	No
110	0.29	PEM	No
111	0.73	PEM	No
113	11.4	PEM	No
115	3.81	PEM	No
125	1.66	PEM	No
136	23	PEM	No
138	10.5	PEM	No
139	1.23	PEM	No
140	6.1	PEM	No
141	2.59	PEM	No
142	2.85	PEM	No
143	5.13	PEM	No
144	4.56	PEM	No
145	3.97	PEM	No
146	3.45	PEM	No
147	3.2	PEM	No
148	3.35	PEM	No
149	21	PEM	No
150	18.7	PEM	No
151	33.4	PEM	No
152	22.5	PEM	No
154	11.3	PEM	No
156	6.87	PEM	No
157	26.8	PEM	No
158	11.8	PEM	No
159	1.45	PEM	No
160	104	PEM	No
164	3.37	PEM	No
165	37.7	PEM	No
171	3.94	PEM	No
172	6.96	PEM	No
173	2.1	PEM	No
175	1.36	PEM	No
181	950	PEM	No
184	871	PEM	No
187	5.86	PEM	No
188	0.63	PEM	No
195	15	PEM	No
199	1.69	PEM	No
200	3.11	PEM	No
201	10.3	PEM	No
202	2.76	PEM	No
206	1.11	PEM	No

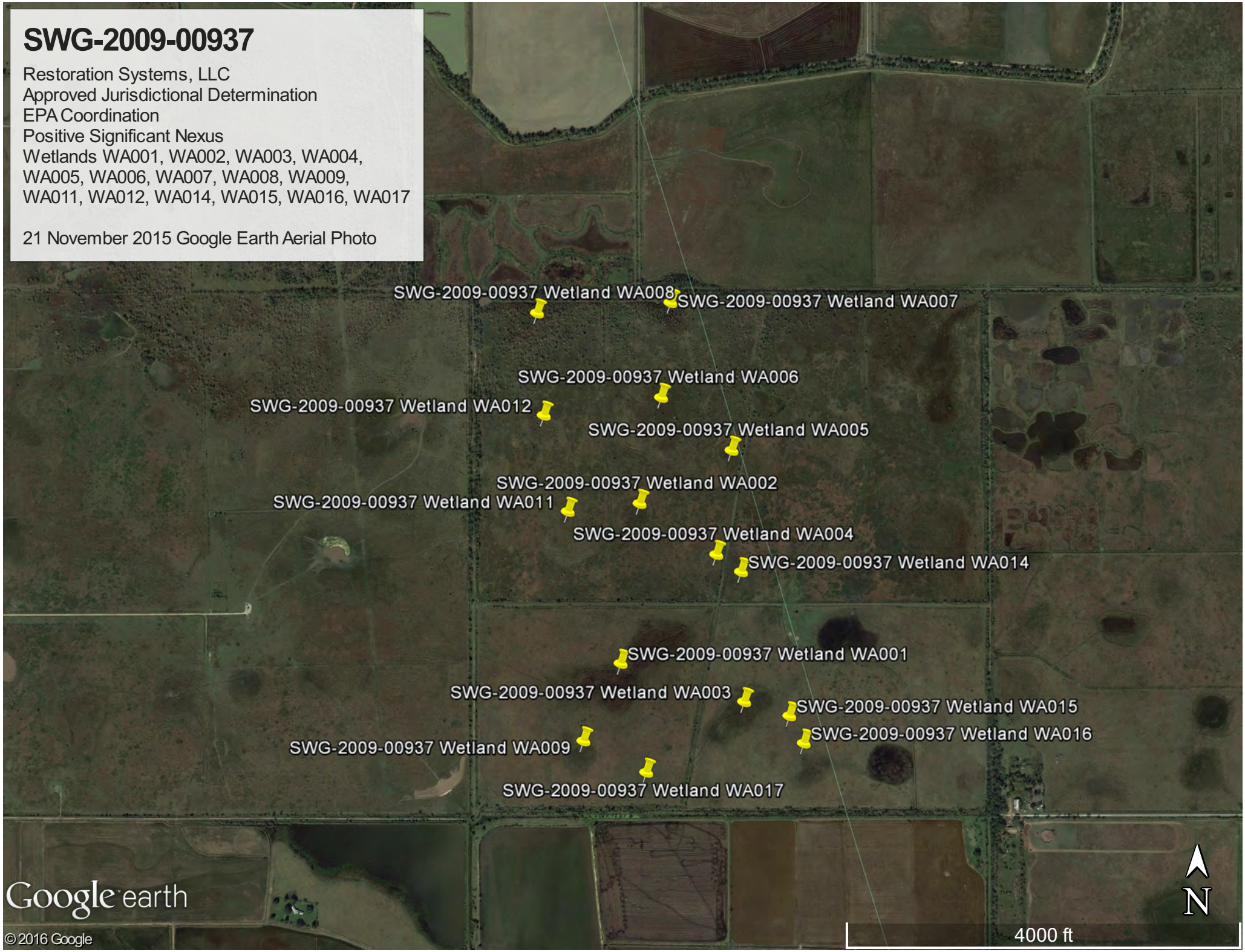
209	9.14	PEM	No
213	0.19	PEM	No
217	0.23	PEM	No
223	0.66	PEM	No
224	48.4	PEM	No
226	327	PEM	No
242	10	PEM	No
245	0.36	PEM	No
247	4.68	PEM	No
249	1.18	PEM	No
251	3.64	PEM	No
252	1.78	PEM	No
253	2.66	PEM	No
255	0.85	PEM	No
256	1.84	PEM	No
258	3.1	PEM	No
265	7.9	PEM	No
272	0.66	PEM	No
281	3.71	PEM	No
282	3.22	PEM	No
288	0.44	PEM	No
298	0.1	PEM	No
299	1.14	PEM	No
302	0.57	PEM	No
316	0.26	PEM	No
317	0.8	PEM	No
52	0.71	PFO	No
64	5.72	PFO	No
77	8.18	PFO	No
78	0.49	PFO	No
83	0.96	PFO	No
86	99.98	PFO	No
88	3.29	PFO	No
112	1.33	PFO	No
119	0.94	PFO	No
120	2.38	PFO	No
126	0.66	PFO	No
127	0.94	PFO	No
129	2.48	PFO	No
130	0.27	PFO	No
135	4.11	PFO	No
168	2.51	PFO	No
169	0.65	PFO	No
170	1.17	PFO	No
177	3.73	PFO	No
180	5.94	PFO	No
182	2.33	PFO	No

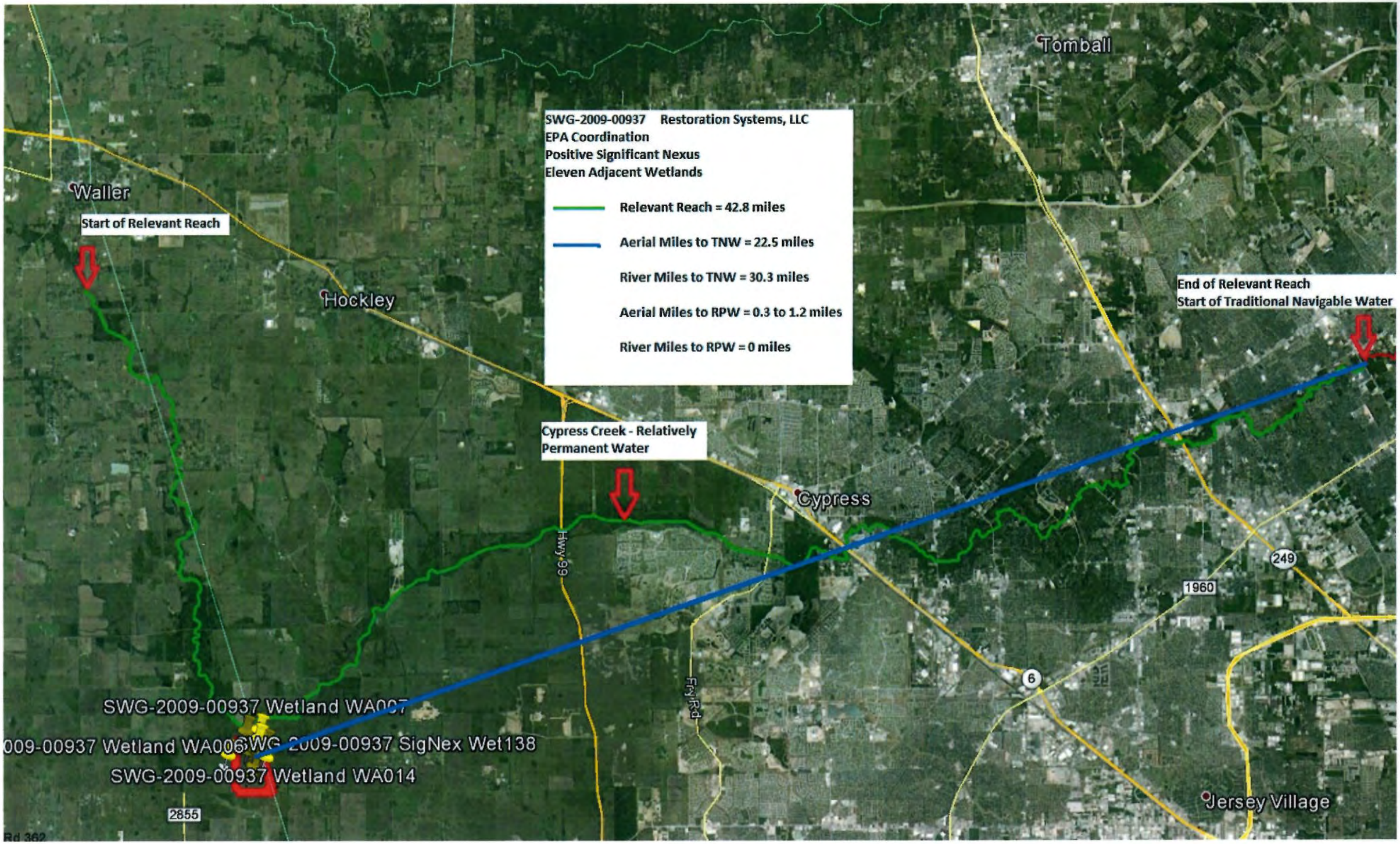
183	20.3	PFO	No
186	0.41	PFO	No
197	5.1	PFO	No
198	0.56	PFO	No
207	17.8	PFO	No
210	1.7	PFO	No
216	1.12	PFO	No
218	0.21	PFO	No
227	0.27	PFO	No
228	0.94	PFO	No
229	0.46	PFO	No
230	2.53	PFO	No
231	0.98	PFO	No
232	4.34	PFO	No
234	1.19	PFO	No
235	4.75	PFO	No
236	64.45	PFO	No
238	1.34	PFO	No
239	0.4	PFO	No
240	0.7	PFO	No
241	1.28	PFO	No
243	35.7	PFO	No
244	0.71	PFO	No
246	2.86	PFO	No
248	1.73	PFO	No
250	1.81	PFO	No
254	12.3	PFO	No
259	0.35	PFO	No
262	0.97	PFO	No
263	2.9	PFO	No
264	0.81	PFO	No
268	3.9	PFO	No
270	33.6	PFO	No
274	4.1	PFO	No
276	11	PFO	No
277	2.48	PFO	No
278	2.31	PFO	No
280	1.86	PFO	No
284	1.24	PFO	No
285	5.5	PFO	No
286	2.38	PFO	No
287	3.9	PFO	No
289	0.39	PFO	No
291	1.56	PFO	No
292	7.86	PFO	No
294	7.33	PFO	No
295	9.91	PFO	No

296	2.37	PFO	No
297	0.53	PFO	No
300	5.98	PFO	No
301	1.67	PFO	No
303	1.43	PFO	No
304	0.85	PFO	No
305	0.31	PFO	No
306	0.65	PFO	No
307	0.8	PFO	No
308	0.81	PFO	No
309	0.26	PFO	No
310	0.23	PFO	No
311	0.34	PFO	No
312	0.95	PFO	No
313	1.38	PFO	No
314	1.89	PFO	No
315	1.1	PFO	No
318	2.21	PFO	No
319	3.1	PFO	No
320	3.42	PFO	No
322	3.56	PFO	No
323	0.8	PFO	No
324	0.52	PFO	No
325	1.59	PFO	No
326	2	PFO	No
5	4.28	PSS	No
7	4.28	PSS	No
54	3.59	PSS	No
97	1.33	PSS	No
122	2.84	PSS	No
123	3.66	PSS	No
124	8.78	PSS	No
131	0.53	PSS	No
132	0.38	PSS	No
133	0.42	PSS	No
155	0.33	PSS	No
161	2.45	PSS	No
166	0.26	PSS	No
167	1.52	PSS	No
178	0.33	PSS	No
179	0.99	PSS	No
185	5.53	PSS	No
189	0.58	PSS	No
190	1.83	PSS	No
191	3.75	PSS	No
192	1.22	PSS	No
193	0.39	PSS	No

194	5.53	PSS	No
196	5.91	PSS	No
203	1.54	PSS	No
204	0.62	PSS	No
205	1.68	PSS	No
208	22.7	PSS	No
211	14.5	PSS	No
212	0.6	PSS	No
215	0.69	PSS	No
219	152	PSS	No
220	1	PSS	No
221	0.32	PSS	No
222	0.84	PSS	No
225	150	PSS	No
233	1.49	PSS	No
237	1.54	PSS	No
260	1.52	PSS	No
261	4.56	PSS	No
266	2.17	PSS	No
267	1.71	PSS	No
271	1.87	PSS	No
279	0.83	PSS	No
290	1	PSS	No
293	0.67	PSS	No

4164.81


SWG-2009-00937
Restoration Systems, LLC
Approved Jurisdictional Determination
EPA Coordination
Positive Significant Nexus
Wetlands WA001, WA002, WA003, WA004,
WA005, WA006, WA007, WA008, WA009,
WA011, WA012, WA014, WA015, WA016, WA017
21 November 2015 Google Earth Aerial Photo
SWG-2009-00937 Wetland WA008
SWG-2009-00937 Wetland WA007
SWG-2009-00937 Wetland WA006
SWG-2009-00937 Wetland WA012
SWG-2009-00937 Wetland WA005
SWG-2009-00937 Wetland WA002
SWG-2009-00937 Wetland WA011
SWG-2009-00937 Wetland WA004
SWG-2009-00937 Wetland WA014
SWG-2009-00937 Wetland WA001
SWG-2009-00937 Wetland WA003
SWG-2009-00937 Wetland WA015
SWG-2009-00937 Wetland WA016
SWG-2009-00937 Wetland WA009
SWG-2009-00937 Wetland WA017
Google earth
© 2016 Google
N
4000 ft


SWG-2009-00937 Restoration Systems, LLC
EPA Coordination
Positive Significant Nexus
Eleven Adjacent Wetlands
Relevant Reach = 42.8 miles
Aerial Miles to TNW = 22.5 miles
River Miles to TNW = 30.3 miles
Aerial Miles to RPW = 0.3 to 1.2 miles
River Miles to RPW = 0 miles
Waller
Start of Relevant Reach
Hockley
Tomball
End of Relevant Reach
Start of Traditional Navigable Water
Cypress Creek - Relatively Permanent Water
Cypress
Hwy 99
Fry Rd
249
1960
6
Jersey Village
SWG-2009-00937 Wetland WA007
009-00937 Wetland WA006
WG-2009-00937 SigNex Wet138
SWG-2009-00937 Wetland WA014
2855
Rd 362

SWG-2009-00937

Restoration Systems, LLC
Approved Jurisdictional Determination
EPA Coordination
Positive Significant Nexus
Wetlands WA001, WA002, WA003, WA004, WA005, WA006, WA007, WA008, WA009, WA011, WA012, WA014, WA015, WA016, WA017

1971 Hockley Mound, Tex. USGS Quadrangle Map
Photorevised 1980
1971 Warren Lake, Tex. USGS Quadrangle Map
Photorevised 1980