

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): 03/14/2023

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Galveston District, SWG-2022-00369, Harris County Flood Control District, Proposed IBC Basin

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: TX County/parish/borough: Harris City: Houston
Center coordinates of site (lat/long in degree decimal format): Lat. 29.596827° **N**, Long. -95.274250° **W**.
Universal Transverse Mercator:

Name of nearest waterbody: Clear Creek (A100-00-00)

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Clear Creek (A100-00-00)

Name of watershed or Hydrologic Unit Code (HUC): Clear Creek Frontal-Galveston Bay Watershed; HUC's 120402040101

☒ 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: 12/06/2022

☐ Field Determination. Date(s):

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 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 waters² (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: 1.635 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: Pond 01 is 0.028-acre and man-made from dry land. The pond was excavated and the excavated material was used to raise an area for a building prior to January 2004. The borrow area is abandoned and the pond does not meet the definition of a water of the United States. Therefore, Pond 01 is not subject to Section 404 of the Clean Water Act (Section 404). The Detention Pond is a man-made detention pond (1.010 acres) excavated within and draining an

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.

upland. The detention pond is located within the 100-year floodplain, but it drains upland and does not carry a relatively permanent flow of water as water generally evaporates from the basin. Therefore, the Detention Basin is not a water of the United States, is not a water of the United States, and is not subject to Section 404.

Wetland 02 and Wetland 04 are isolated wetlands, not adjacent to a WOTUS and lie outside of the 100-year floodplain of Clear Creek (A100-00-00).

The nearest relatively permanent water is Clear Creek. Wetland 02 (0.123 acre) is approximately 1,000 feet from Clear Creek and Wetland 04 (0.091 acre) is approximately 960 feet from Clear Creek. These two wetlands are located above the base flood elevation of 44 feet above mean sea level (AMSL), are not impoundments of jurisdictional waters, not in the floodplain of any water of the U.S., have no hydrological connection to any jurisdictional waters or wetlands in the area and have been determined to be "ISOLATED" as defined in federal regulations (33 CFR 330.2(e)). Based on the topography and aerial imagery, the majority of the site is level, with gradual sloping south towards Clear Creek along the southern border of the project site.

The wetlands were identified using the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0) which requires that all three wetland criteria be present under normal circumstances for an area to be determined a wetland. Both wetlands are depressional areas that experience seasonal hydrology during and after rain events, providing the conditions necessary for wetlands to establish. Impacts to either of the wetlands would not affect interstate or foreign travelers for recreational or other purposes, would not affect fish or shellfish that could be taken and sold in interstate or foreign commerce, and would not affect the current use or potential use for industrial purposes by industries in interstate commerce.

"Adjacent" per Federal regulations 33 CFR 328.3 is defined: "bordering, contiguous, or neighboring. Wetlands separated from other Waters of the U.S. by man-made dikes or barriers, natural river berms, beach dunes, and the like are 'adjacent wetlands'." The nearest Water of the U.S. to the wetlands listed above is Clear Creek. These wetlands are not expected to share surface hydrology with Clear Creek, including during high flow (e.g., the 100-year floodplain), as they are elevated above the base floodplain elevation and separated from Clear Creek by upland areas. These wetlands are separated from other Waters of the U.S. by uplands that do not allow the exchange of waters via a confined surface hydrology connection during normal conditions and these wetlands are not inseparably bound with Clear Creek.

"Isolated" waters as defined in 33 CFR 330.2 (e) is: "those non-tidal Waters of the U.S. that are: (1) not part of a surface tributary system to interstate or navigable Waters of the U.S.; and (2) not adjacent to such tributary waterbodies." Wetlands 02 and 04 have been identified as aquatic resources and have been determined to be isolated.

"Waters of the "U.S." are defined in 33 CFR 328.3 (a) 1 through 7 which is addressed in the following. Due to the fact that these aquatic resources: (1) are not currently used, or were used in the past, nor susceptible to be used for interstate or foreign commerce nor subject to the ebb and flow of the daily tide; (2) do not cross interstate or tribal boundaries; (3) the destruction of these wetlands are not expected to affect (i) interstate or foreign travelers for recreational purposes or other purposes or (ii) fish or shellfish that could be taken and sold in interstate or foreign commerce or (iii) current use or potential use for industrial purposes by industries in interstate commerce; (4) are not impoundments of Waters of the U.S.; (5) are not part of a surface tributary system of (a) (1) through (4); (6) are not part of the territorial seas; and (7) are not adjacent to Waters of the U.S. subject to Section 404 of the Clean Water Act.

The subject wetlands (2 and 4) are not located reasonably close to a water of the US as to infer it is "ecologically adjacent"; for a wetland to be determined to "reasonably close" it must be in a geomorphic position such that an ecologic interconnectivity is beyond speculation or insubstantial for a known biologic species that requires both, the subject water/wetland and the nearest known water of the U.S. other than an adjacent wetland to fulfill spawning and/or life cycle requirements. There are no known species in this geo-region that require both this wetland under review and the nearest known waterway to fulfill their life cycle requirements, therefore these wetlands are ecologically isolated. The wetlands have no known nexus to interstate commerce. Therefore, it is SWG position that Wetland 2 and 4 are not Water of the U.S. and are not subject to Section 404 or Section 10 of the Rivers and Harbors Act.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

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

1. TNW

Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW

Summarize rationale supporting conclusion that wetland is “adjacent”: .

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

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

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

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

If the waterbody⁴ 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: **Pick List**

Drainage area: 197 **square miles**

Average annual rainfall: inches

Average annual snowfall: inches

(ii) Physical Characteristics:

(a) Relationship with TNW:

☐ Tributary flows directly into TNW.

☒ Tributary flows through **2** tributaries before entering TNW.

Project waters are **5-10** river miles from TNW.

Project waters are **1 (or less)** river miles from RPW.

Project waters are **5-10** 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 TNW⁵: Project waters flow into Clear Creek (RPW) which ultimately becomes a TNW near Friendswood, Texas.

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: .

(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: 2 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: .

Presence of run/riffle/pool complexes. Explain: .

Tributary geometry: **Relatively straight**

Tributary gradient (approximate average slope): %

(c) Flow:

Tributary provides for: **Seasonal flow**

Estimate average number of flow events in review area/year: **20 (or greater)**

Describe flow regime: Ephemeral.

Other information on duration and volume: .

Surface flow is: **Confined**. Characteristics: Surface flow is confined to the OHWM.

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

☐ Dye (or other) test performed: .

Tributary has (check all that apply):

☒ Bed and banks
☒ OHWM⁶ (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: Some portions of the tributaries within the project area do have areas that lack

an OHWM.

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: No water was present in the tributaries at the time of the site visit.

Identify specific pollutants, if known: .

⁶A 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.

⁷Ibid.

(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: 1.635 acres

Wetland type. Explain: Wetland 01 - PEM1C; Wetland 03 - PFO1A, Wetland 05 - PSS1, Wetland 06 - PFO1A, Wetland 07 - PFO1A.

Wetland quality. Explain: Low quality. Invasive plant species and presence of invasive apple snails were observed throughout all wetlands.

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Intermittent flow**. Explain: No surface water or water table was observed in the wetlands.

Surface flow is: **Discrete**

Characteristics: No surface water was present in the wetlands.

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: .

☐ Ecological connection. Explain: .

☒ Separated by berm/barrier. Explain: Manmade spoil pile located along Clear Creek separates all wetlands on the property from Clear Creek. However, there are several gaps in the berm that could allow floodwaters to inundate these wetland areas. .

(d) Proximity (Relationship) to TNW

Project wetlands are **5-10** river miles from TNW.

Project waters are **5-10** aerial (straight) miles from TNW.

Flow is from: **Wetland to navigable waters**

Estimate approximate location of wetland as within the **100 - 500-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: Aside from Wetland 01, surface water was not observed in the wetlands at the time of the site visit. Surface water in Wetland 01 was brown. These wetlands serve to aid in the reduction of chemical pollutants from adjacent land uses (residential, industrial, and transportation) flowing into Clear Creek (A100-00-00).

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: Wetland 03, 06, and 07 are PFO wetlands and primarily dominated by mixed hardwood species. Wetland 01 is a PEM wetland. Wetland 05 is a PSS wetland.

☐ 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 (346.671) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>	<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>
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See attached exhibit.

Summarize overall biological, chemical and physical functions being performed: Wetlands 01, 03, 05, 06, and 07 are low quality wetlands located within the 100-year floodplain of Clear Creek. Invasive plant species as well as invasive apple snail shells were observed within all of the wetlands. Trash and other debris was observed throughout wetlands. See below C.3. for additional information .

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: Ephemeral stream feature 01 is ephemeral and appears to carry water only during heavy rain events. There is a continuous surface water connection between the approximate 129-foot relevant reach of non-RPW, Ephemeral stream 01, to an RPW, Clear Creek (A100-00-00), through breaks in the spoil pile adjacent to the Clear Creek easement. Ephemeral stream feature 01 is located within the 100-year floodplain of Clear Creek (A100-00-00). Ephemeral stream 01 has no adjacent wetlands within the relevant reach, it is unlikely that this ephemeral stream substantively aids in the reduction of thermal and chemical pollutants flowing into Clear Creek (A100-00-00). Therefore, we could not conclude that the relevant reach has more than a speculative or insubstantial effect on the chemical integrity of Clear Creek (A100-00-00). The relevant reach does not have any adjacent wetlands to retain floodwaters. Therefore, this relevant reach does not provide benefits to the physical integrity of Clear Creek (A100-00-00) by reducing velocities during overbank events, or stabilizing soils. This relevant reach could contribute to erosion and sedimentation within Clear Creek (A100-00-00), however, this would be speculative based on the length on the relevant reach and the distance to the TNW. Therefore, we could not conclude that the relevant reach has more than a speculative or insubstantial effect on the physical integrity of Clear Creek (A100-00-00). There are no adjacent wetlands along this relevant reach to produce detritus and organics as a food source for downstream aquatic organisms. It is doubtful that the relevant reach has aquatic organisms that require this relevant reach and the TNW. Therefore, we could not conclude that the relevant reach has more than a speculative or insubstantial effect on the biological integrity of Clear Creek (A100-00-00).

Ephemeral stream feature 02 is ephemeral and appears to carry water only during heavy rain events. There is a continuous surface water connection between the approximate 201-foot relevant reach of non-RPW, Ephemeral stream 02, to an RPW, Clear Creek (A100-00-00), through breaks in the spoil pile adjacent to the Clear Creek easement. Ephemeral stream feature 02 is located within the 100-year floodplain of Clear Creek (A100-00-00). Ephemeral stream 02 has no adjacent wetlands within the relevant reach, it is unlikely that this ephemeral stream substantively aids in the reduction of thermal and chemical pollutants flowing into Clear Creek (A100-00-00). Therefore, we could not conclude that the relevant reach has more than a speculative or insubstantial effect on the chemical integrity of Clear Creek (A100-00-00). The relevant reach does not have any adjacent wetlands to retain floodwaters.

Therefore, this relevant reach does not provide benefits to the physical integrity of Clear Creek (A100-00-00) by reducing velocities during overbank events, or stabilizing soils. This relevant reach could contribute to erosion and sedimentation within Clear Creek (A100-00-00), however, this would be speculative based on the length on the relevant reach and the distance to the TNW. Therefore, we could not conclude that the relevant reach has more than a speculative or insubstantial effect on the physical integrity of Clear Creek (A100-00-00). There are no adjacent wetlands along this relevant reach to produce detritus and organics as a food source for downstream aquatic organisms. It is doubtful that the relevant reach has aquatic organisms that require this relevant reach and the TNW. Therefore, we could not conclude that the relevant reach has more than a speculative or insubstantial effect on the biological integrity of Clear Creek (A100-00-00).

Ephemeral stream feature 03 is ephemeral and appears to carry water only during heavy rain events. There is a continuous surface water connection between the approximate 210-foot relevant reach of non-RPW, Ephemeral stream 03, to an RPW, Clear Creek (A100-00-00), through breaks in the spoil pile adjacent to the Clear Creek easement. Ephemeral stream feature 03 is located within the 100-year floodplain of Clear Creek (A100-00-00). Ephemeral stream 03 has no adjacent wetlands within the relevant reach, it is unlikely that this ephemeral stream substantively aids in the reduction of thermal and chemical pollutants flowing into Clear Creek (A100-00-00). Therefore, we could not conclude that the relevant reach has more than a speculative or insubstantial effect on the chemical integrity of Clear Creek (A100-00-00). The relevant reach does not have any adjacent wetlands to retain floodwaters. Therefore, this relevant reach does not provide benefits to the physical integrity of Clear Creek (A100-00-00) by reducing velocities during overbank events, or stabilizing soils. This relevant reach could contribute to erosion and sedimentation within Clear Creek (A100-00-00), however, this would be speculative based on the length on the relevant reach and the distance to the TNW. Therefore, we could not conclude that the relevant reach has more than a speculative or insubstantial effect on the physical integrity of Clear Creek (A100-00-00). There are no adjacent wetlands along this relevant reach to produce detritus and organics as a food source for downstream aquatic organisms. It is doubtful that the relevant reach has aquatic organisms that require this relevant reach and the TNW. Therefore, we could not conclude that the relevant reach has more than a speculative or insubstantial effect on the biological integrity of Clear Creek (A100-00-00).

Ephemeral stream feature 04 is ephemeral and appears to carry water only during heavy rain events. There is a continuous surface water connection between the approximate 118-foot non-RPW, Ephemeral stream 04, to an RPW, Clear Creek (A100-00-00), through breaks in the spoil pile adjacent to the Clear Creek easement. Ephemeral stream feature 04 is located within the 100-year floodplain of Clear Creek (A100-00-00). Ephemeral stream 04 has no adjacent wetlands within the relevant reach, it is unlikely that this ephemeral stream substantively aids in the reduction of thermal and chemical pollutants flowing into Clear Creek (A100-00-00). Therefore, we could not conclude that the relevant reach has more than a speculative or insubstantial effect on the chemical integrity of Clear Creek (A100-00-00). The relevant reach does not have any adjacent wetlands to retain floodwaters. Therefore, this relevant reach does not provide benefits to the physical integrity of Clear Creek (A100-00-00) by reducing velocities during overbank events, or stabilizing soils. This relevant reach could contribute to erosion and sedimentation within Clear Creek (A100-00-00), however, this would be speculative based on the length on the relevant reach and the distance to the TNW. Therefore, we could not conclude that the relevant reach has more than a speculative or insubstantial effect on the physical integrity of Clear Creek (A100-00-00). There are no adjacent wetlands along this relevant reach to produce detritus and organics as a food source for downstream aquatic organisms. It is doubtful that the relevant reach has aquatic organisms that require this relevant reach and the TNW. Therefore, we could not conclude that the relevant reach has more than a speculative or insubstantial effect on the biological integrity of Clear Creek (A100-00-00).

In conclusion, it is the Corps opinion that there is not sufficient evidence to support the statement that these relevant reaches provide a significant nexus (more than speculative or insubstantial) effect upon the chemical, physical, and/or biological integrity of the downstream TNW, Clear Creek. Based on the significant nexus determination, we determined that Ephemeral stream 01, Ephemeral stream 02, Ephemeral stream 03, and Ephemeral stream 04 are not waters of the United States and are not subject to federal jurisdiction under Section 404.

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: Field investigations within the project study area identified 0.019-acre of adjacent emergent wetlands, 0.39-acre of adjacent forested wetlands, and 1.226 acres of adjacent scrubshrub wetlands within this relevant reach. All of the wetlands noted above fall at least partially within the 100-year floodplain or are part of a complex that partially falls within the 100-year floodplain.
Wetland features: There are a total of 1.635 acres of on site wetlands and 345.036 acres of off site wetlands that are adjacent to the relevant reach of Clear Creek (A100-00-00) being evaluated. The segment of Clear Creek (A100-00-00) these wetlands are adjacent to is a relatively permanent water. Clear Creek (A100-00-00) becomes a traditionally navigable water near Friendswood, Texas, approximately 6 aerial miles south of the project area. Through this connection, these wetlands serve to aid in the reduction of chemical pollutants from adjacent land uses (residential, industrial, petrochemical and transportation) flowing into Clear Creek (A100-00-00). Clear Creek (A100-00-00) is listed on the Texas Commission on Environmental Quality (TCEQ) 303(d) list as impaired for bacteria in water and PCBs in edible tissue. Wetlands can improve water quality by removing pollutants from surface water. Given these wetlands are located within the 100-year floodplain of Clear Creek (A100-00-00) and have the potential to filter

out pollutants during flood events. Therefore, the wetlands have more than a speculative or insubstantial effect on the chemical integrity of a TNW (Clear Creek [A100-00-00]). The wetlands adjacent to the relevant reach of Clear Creek (A100-00-00) provide benefits to the physical integrity of Clear Creek (A100-00-00) by retaining floodwaters, reducing velocities during overbank events, and stabilizing soils. Removing these wetlands from the system would result in increased sediment load within the Clear Creek channels, as well as increased volume and velocity. These increases would contribute to erosion and sedimentation within Clear Creek (A100-00-00) which would constitute alteration/degradation to the physical attributes of a TNW. Therefore, the wetlands identified in this relevant reach provide more than a speculative or insubstantial effect on the physical integrity of the downstream TNW. During the field investigation, observations of various aquatic fauna were made within the Clear Creek channel. This included fish, aquatic macroinvertebrates, and amphibians. Additionally, evidence suggesting aquatic life use of the adjacent wetland areas including aquatic macroinvertebrates (crayfish burrows) and amphibians was observed. Additionally, the on-site adjacent wetlands aid in providing habitat for terrestrial species that rely on aquatic fauna as a food source (e.g. birds, racoons, etc.). While there is insufficient evidence to identify aquatic species that require this relevant reach to fulfill their lifecycle requirements, observations of aquatic fauna and proximity to the TNW (approximately 6 aerial miles) suggest that there is a regular interplay of aquatic wildlife between Clear Creek (RPW, A100-00-00), it's adjacent wetlands, and Clear Creek (TNW, A100-00-00). This demonstrates more than a speculative or insubstantial effect on the biological integrity of a TNW (Clear Creek [A100-00-00]).

In conclusion, there is sufficient evidence to support the statement that the wetlands provide a significant nexus (more than a speculative or insubstantial effect) to the chemical, physical, and/or biological integrity of the downstream TNW (Clear Creek [A100-00-00]).

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-RPWs⁸ that flow directly or indirectly into TNWs.

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

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

- ☐ Tributary waters: 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.

⁸See Footnote # 3.

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 jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: **Wetland 01 (0.019 acre), Wetland 03 (0.300 acre), wetland 05 (1.226 acres), Wetland 06 (0.048 acre), Wetland 07 (0.042 acre). Total 1.635 acres.**

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

- ☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.⁹**

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- ☐ Demonstrate that impoundment was created from “waters of the U.S.,” or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

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

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

Identify water body and summarize rationale supporting determination: .

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

- ☐ Tributary waters: linear feet 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): **Pond 01 and Detention Pond - see Section II.B.2 for details.**

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: wet 2 & 4, 0.214 acres.

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 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): **Ephemeral 01, 02, 03, and 04 totaling 658** 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: .
- ☒ 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:U.S. Geological Survey (USGS). 2019. National Hydrography Dataset. <http://nhd.usgs.gov/>. Website accessed December 2021.

☒ USGS NHD data.

☐ USGS 8 and 12 digit HUC maps.
- ☒ U.S. Geological Survey map(s). Cite scale & quad name:USGS 1:24K Mykata and Pearland Quadrangles.
- ☒ USDA Natural Resources Conservation Service Soil Survey. Citation:U.S. Department of Agriculture, Natural Resources Conservation Service (USDA-NRCS). 1976. Custom Soil Resource Report for Harris County, Texas.
- ☒ National wetlands inventory map(s). Cite name:USFWS Online Wetland Mapper, Reviewed December 2021.
- ☐ State/Local wetland inventory map(s): .
- ☒ FEMA/FIRM maps:Federal Emergency Management Agency (FEMA). 2016. FEMA Flood Map Service Center. <https://msc.fema.gov/portal>. Website accessed December 2021.
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☒ Photographs: ☒ Aerial (Name & Date):Google Earth Imagery Dates; 1984, 1995, 2002, 2005-2009, 2011-2020.

☐ 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: For specific details regarding the delineation and jurisdictional conclusions refer to the June 2022 Aquatic Resources Delineation Report for Harris County Flood Control District HCFCDD Project ID: Clear Creek (A100-00-00-G002) (IBC Basin Site) .

Table 1: Aquatic Resources Table for Non-Jurisdictional Features Within the Project Site

ID	Cowardin Classification	Acreage within Project Site	LF within Project Site	Lat/LongCoordinates
Wetland 02	PFO1A	0.123 acre	-	29.597819°, -95.274491°
Wetland 04	PFO1A	0.091 acre	-	29.597408°, -95.274354°
Pond 01	PUB	0.028 acre	-	29.598532°, -95.275731°
Ephemeral Stream 01	Ephemeral	-	129 LF	29.594691°, -95.271218°
Ephemeral Stream 02	Ephemeral	-	201 LF	29.594880°, -95.269646°
Ephemeral Stream 03	Ephemeral	-	210 LF	29.594536°, -95.267452°
Ephemeral Stream 04	Ephemeral	-	118 LF	29.594781°, -95.267046°