# APPENDIX C Agency Coordination Letters & Responses Received



12 January 2021

Consistency Review Coordinator
Texas General Land Office
P. O. Box 12873
Austin, Texas 78711-2873
Federal Consistency <Federal.Consistency@GLO.TEXAS.GOV>

RE: Proposed Jefferson County Drainage District No. 6

**Ditch 505 Detention Project Fannett, Jefferson County, Texas** 

HJN 21005-001EA

Dear Sirs:

Jefferson County Drainage District No. 6 (DD6) implements and maintains drainage projects throughout the Districts' 486 square mile area located in Jefferson County and includes the cities of Beaumont, Bevil Oaks, China and Nome, Texas. DD6 also works with other jurisdictions to identify flood-prone areas, to encourage inclusion of flood-damage avoidance measures in land development. DD6 has applied to the Federal Emergency Management Agency (FEMA) for grant funding to assist with the improvement to drainage in and around the community of Fannett in Jefferson County. Environmental reviews are required under the National Environmental Policy Act (NEPA) and the Council on Environmental Quality Guidelines, 40 CFR Parts 1500 to 1508. This coordination letter is being provided for your agency's' response in conformance with NEPA procedures.

The project will involve the construction of an approximately 240-acre detention basin on Ditch 505 just north of Interstate 10 and south of Clubb Road (see project figures in Appendix 1). Additional culverts will also be installed under Clubb Road to improve conveyance into the detention basin from areas upstream. The detention basin will be excavated approximately 4 feet deep in addition to a detention berm placed around the lower portion of the basin to increase detention capacity. The primary benefit area is in the community of Fannett downstream of the proposed basin with benefits also realized upstream of the basin along Clubb Road.

Appendix 1 contains maps depicting the proposed drainage improvement project, including an aerial view of the project area and a topographic map of the project area. Note that the project area is not located within the Coastal Zone boundary of Texas. Land use of the surrounding area is agricultural and residential.

Please review the attached figures and information concerning the proposed project to determine if the project is consistent with your agency's environmental regulations or policies. Please respond by letter at your earliest convenience. Your prompt attention to this matter would be greatly appreciated, as your signed concurrence letter is necessary to complete the application for grant funding from FEMA.



Please call me should you have any questions concerning this project or if I can be of any further assistance.

Sincerely,

For Horizon Environmental Services, Inc.

C. Lee Sherrod





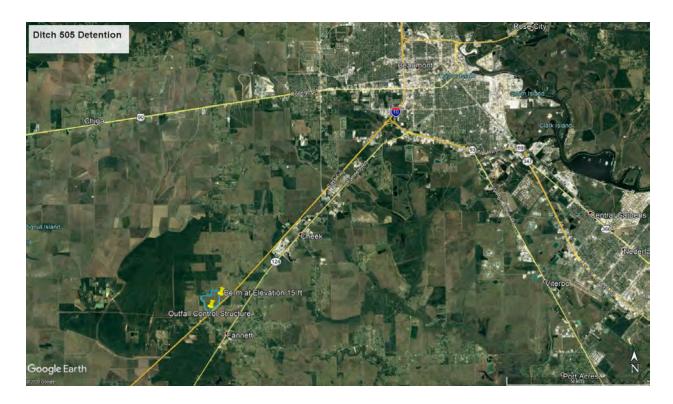


Figure 1: Location

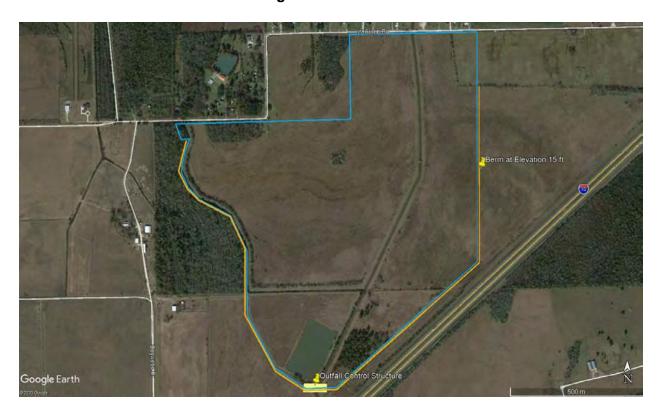


Figure 2: Project





Figure 3: Topo



Figure 4: Coastal Zone Boundary

From: Federal Consistency Lee Sherrod To:

Subject: RE: 3 FEMA Funded Projects in Jefferson County

Date: Friday, January 29, 2021 9:05:53 AM

## [EXTERNAL EMAIL]

Since these projects are not located within the Coastal Zone, no review will be completed.

Allison Buchtien Federal Consistency Texas General Land Office federal.consistency@glo.texas.gov

Please send all Federal Consistency review requests to this email address.

From: Lee Sherrod <lee\_sherrod@horizon-esi.com>

Sent: Monday, January 25, 2021 12:54 PM

**To:** Federal Consistency < Federal. Consistency @GLO.TEXAS.GOV> **Subject:** [EXTERNAL] 3 FEMA Funded Projects in Jefferson County

For your review and comment please.

Thanks,

# C. Lee Sherrod

Certified Professional Wetland Scientist-Emeritus

Direct 512.439.4788 | Office 512.328.2430 | Cell 512.431.3562

LJA ENVIRONMENTAL SERVICES, LLC.

1507 S INTERSTATE 35 AUSTIN TX 78741-2502

https://ljaenvironmental.com



Please consider the environment before printing this e-mail.

CAUTION: This email originated from OUTSIDE of the Texas General Land Office. Links or attachments may be dangerous. Please be careful clicking on any links or opening any attachments.

[EXTERNAL EMAIL] Exercise caution. Do not open attachments or click links from unknown senders or unexpected email



12 January 2021

County Engineer
County Flood Plain Administrator
Jefferson County
1149 Pearl Street, 5<sup>th</sup> Floor
Beaumont, Texas 77701

**RE:** Proposed Jefferson County Drainage District No. 6 Project:

**Ditch 505 Detention** 

Fannett, Jefferson County, Texas

HJN 21005-001EA

Dear Sirs:

Jefferson County Drainage District No. 6 (DD6) implements and maintains drainage projects throughout the Districts' 486 square mile area located in Jefferson County and includes the cities of Beaumont, Bevil Oaks, China and Nome, Texas. DD6 also works with other jurisdictions to identify flood-prone areas, to encourage inclusion of flood-damage avoidance measures in land development. DD6 has applied to the Federal Emergency Management Agency (FEMA) for grant funding to assist with the improvement to drainage in and around Fannett in Jefferson County. Environmental reviews are required under the National Environmental Policy Act (NEPA) and the Council on Environmental Quality Guidelines, 40 CFR Parts 1500 to 1508. This coordination letter is being provided for your agency's' response in conformance with NEPA procedures.

The project will involve the construction of an approximately 240-acre detention basin on Ditch 505 just north of Interstate 10 and south of Clubb Road (see project figures in Appendix 1). Additional culverts will also be installed under Clubb Road to improve conveyance into the detention basin from areas upstream. The detention basin will be excavated approximately 4 feet deep in addition to a detention berm placed around the lower portion of the basin to increase detention capacity. The primary benefit area is in the community of Fannett downstream of the proposed basin with benefits also realized upstream of the basin along Clubb Road.

Appendix 1 contains maps depicting the proposed drainage improvement project, including an aerial view of the project area and a topographic map of the project area. Note that the project area is located within the FEMA 100-year (Zone AE) floodplain and floodway of Ditch 505. Land use of the surrounding area is agricultural and residential.

Please review the attached figures and information concerning the proposed project to determine if the project is consistent with your agency's environmental regulations or policies. Please respond by letter at your earliest convenience. Your prompt attention to this matter would be greatly appreciated, as your signed concurrence letter is necessary to complete the application for grant funding from FEMA.



Please call me should you have any questions concerning this project or if I can be of any further assistance.

Sincerely,

For Horizon Environmental Services, Inc.

C. Lee Sherrod





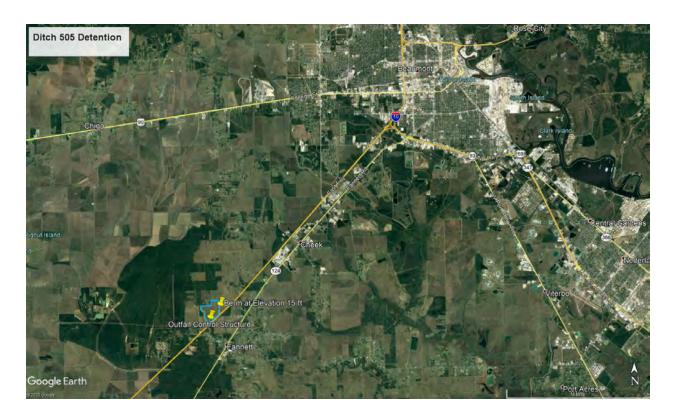


Figure 1: Location



Figure 2: Project





Figure 3: Topo

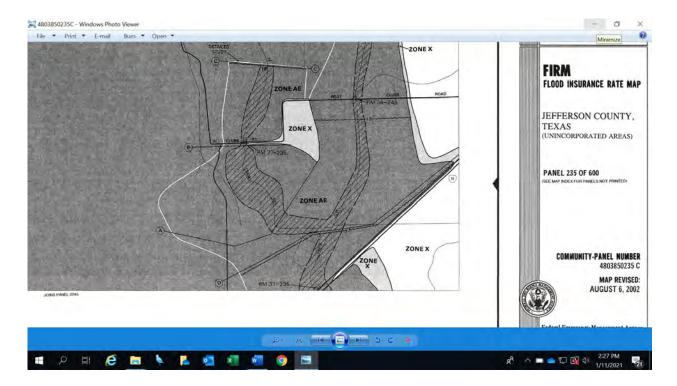


Figure 4: FEMA FIRM Map



12 January 2021

Natural Resources Conservation Service US Department of Agriculture 101 South Main Temple, Texas 76501-6624 carlos.villarreal@tx.usda.gov

**RE:** Proposed Jefferson County Drainage District No. 6 Project:

**Ditch 505 Detention** 

Fannett, Jefferson County, Texas

HJN 21005-001EA

Dear Sirs:

Jefferson County Drainage District No. 6 (DD6) implements and maintains drainage projects throughout the Districts' 486 square mile area located in Jefferson County and includes the cities of Beaumont, Bevil Oaks, China and Nome, Texas. DD6 also works with other jurisdictions to identify flood-prone areas, to encourage inclusion of flood-damage avoidance measures in land development. DD6 has applied to the Federal Emergency Management Agency (FEMA) for grant funding to assist with the improvement to drainage in and around the community of Fannett in Jefferson County. Environmental reviews are required under the National Environmental Policy Act (NEPA) and the Council on Environmental Quality Guidelines, 40 CFR Parts 1500 to 1508. This coordination letter is being provided for your agency's' response in conformance with NEPA procedures.

The project will involve the construction of an approximately 240-acre detention basin on Ditch 505 just north of Interstate 10 and south of Clubb Road (see project figures in Appendix 1). Additional culverts will also be installed under Clubb Road to improve conveyance into the detention basin from areas upstream. The detention basin will be excavated approximately 4 feet deep in addition to a detention berm placed around the lower portion of the basin to increase detention capacity. The primary benefit area is in the community of Fannett downstream of the proposed basin with benefits also realized upstream of the basin along Clubb Road.

Soils on the subject site include Beaumont clay, LaBelle clay loam, and League clay (Soils map, Appendix 1). The League soils LaBelle soils are listed as Prime Farmland Soils. Approximately 156 acres of the project are within the League and LaBelle soil areas. Prime farmland soils are very prevalent throughout the watershed and region.

In accordance with NEPA and the Farmland Protection Policy Act (FPPA), your determination of impact significance to prime and other important farmlands is requested. Your prompt attention to this matter would be greatly appreciated, as your response is necessary to complete the application process for Jefferson County DD6's grant from FEMA.



Please call me should you have any questions concerning this project or if I can be of any further assistance.

Sincerely,

For Horizon Environmental Services, Inc.

C. Lee Sherrod







Figure 1: Location



Figure 2: Project





Figure 3: Topo

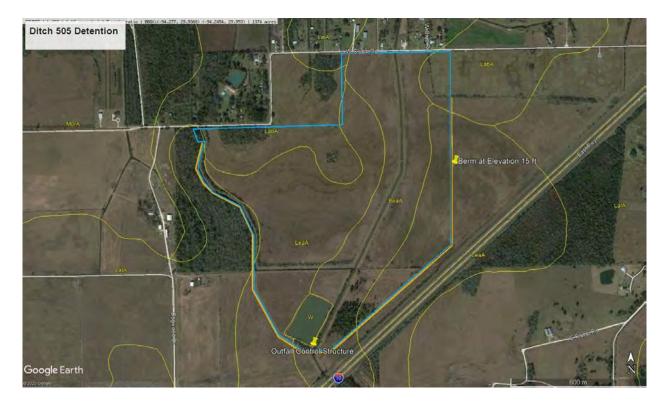


Figure 4: Soils

Natural Resources Conservation Service

State Office

101 S. Main Street Temple, TX 76501 Voice 254.742.9800 Fax 254.742.9819

Lee Sherrod Attention:

Subject: Ditch 505 Drainage Project

NEPA/FPPA Evaluation

We have reviewed the information provided in your correspondence concerning the proposed project This review is part of the National Environmental Policy Act (NEPA) evaluation. We have evaluated the proposed site as required by the Farmland Protection Policy Act (FPPA).

The proposed site may involve areas of Prime Farmland; however, we consider the location to be exempt from provisions of FPPA as the project described does not constitute a permanent conversion of farmland. As such, no further consideration from protection is necessary. We strongly encourage the use of acceptable erosion control methods during the construction of this project.

If you have further questions, please contact me at 505-516-7822 or by email at mark.palmer@tx.usda.gov.

Sincerely,

Digitally signed by Mark V. Palmer Mark V. Palmer Jr. Jr. Date: 2023.03.23 10:52:25 -05'00'

Mark V. Palmer Jr. NRCS Cartographic Technician

Attachment: None



12 January 2021

Intergovernmental Relations Division Texas Commission on Environmental Quality 12100 Park 35 Circle Austin, Texas 78753

**RE:** Proposed Jefferson County Drainage District No. 6 Project:

Ditch 505 Detention

Fannett, Jefferson County, Texas

HJN 21005-001EA

Dear Sirs:

Jefferson County Drainage District No. 6 (DD6) implements and maintains drainage projects throughout the Districts' 486 square mile area located in Jefferson County and includes the cities of Beaumont, Bevil Oaks, China and Nome, Texas. DD6 also works with other jurisdictions to identify flood-prone areas, to encourage inclusion of flood-damage avoidance measures in land development. DD6 has applied to the Federal Emergency Management Agency (FEMA) for grant funding to assist with the improvement to drainage in and around the community of Fannett in Jefferson County. Environmental reviews are required under the National Environmental Policy Act (NEPA) and the Council on Environmental Quality Guidelines, 40 CFR Parts 1500 to 1508. This coordination letter is being provided for your agency's' response in conformance with NEPA procedures.

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Appendix 1 contains maps depicting the proposed drainage improvement project, including an aerial view of the project area and a topographic map of the project area. Note that the project area is located within the FEMA 100-year floodplain. Land use of the surrounding area is agricultural, residential, and commercial.

Minimal and temporary diesel emissions and fugitive dust emissions from equipment during construction are possible. Once construction is complete there will be no motorized equipment associated with this project. Best management practices for temporary erosion and sedimentation control will be implemented during project construction.

Please review the attached figures and information concerning the proposed project to determine if the project is consistent with your agency's environmental regulations or policies.



Please respond by letter at your earliest convenience. Your prompt attention to this matter would be greatly appreciated, as your signed concurrence letter is necessary to complete the application for grant funding from FEMA.

Please call me should you have any questions concerning this project or if I can be of any further assistance.

Sincerely,

For Horizon Environmental Services, Inc.

C. Lee Sherrod





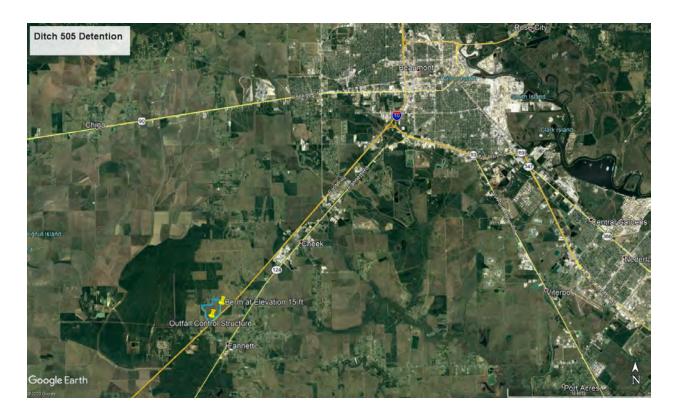


Figure 1: Location



Figure 2: Project





Figure 3: Topo

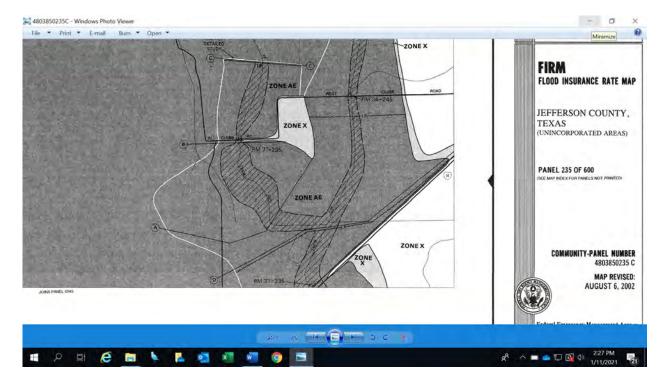


Figure 4: FEMA FIRM Map

Jon Niermann, *Chairman*Emily Lindley, *Commissioner*Bobby Janecka, *Commissioner*Toby Baker, *Executive Director* 



# TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 4, 2021

C. Lee Sherrod Certified Professional Wetland Scientist-Emeritus LJA Environmental Services, LLC. 1507 S Interstate 35 Austin, Texas 78741-2502

Via: E-mail

Re: TCEQ NEPA Request #2020-011. Ditch 505 Detention. Jefferson County.

Dear Mr. Sherrod,

The Texas Commission on Environmental Quality (TCEQ) has reviewed the above-referenced project and offers the following comments:

In accordance with the general conformity regulations in 40 CFR Part 93, this proposed action was reviewed for air quality impact. The proposed action is located in County name County, which is currently designated as attainment/unclassifiable for the National Ambient Air Quality Standards for all six criteria air pollutants. The TCEQ is evaluating the South Coast Air Quality Management District v. EPA, No. 15-1115 (D.C. Cir. 2018), which may reinstate general conformity requirements for County name County as part of the Beaumont-Port Arthur maintenance area for the 1997 eight-hour ozone NAAQS. Volatile organic compounds (VOC) and nitrogen oxides (NOX) are precursor pollutants that lead to the formation of ozone. A general conformity demonstration may be required when the total projected direct and indirect VOC or NOX emissions from an applicable action are equal to or exceed the de minimis emissions level, which is 100 tons per year (tpy) for ozone NAAQS maintenance areas. Please consult with the lead federal agency associated with this project for National Environmental Policy Act compliance and/or with the United States Environmental Protection Agency to determine whether this proposed action is subject to federal general conformity regulations.

We recommend the environmental assessment address actions that will be taken to prevent surface and groundwater contamination.

Any debris or waste disposal should be at an appropriately authorized disposal facility.

Thank you for the opportunity to review this project. If you have any questions, please contact the agency NEPA coordinator at (512) 239-0010 or NEPA@tceq.texas.gov

Sincerely,

Ryan Vise,

Division Director External Relations



12 January 2021

Mr. Mark Wolfe Texas Historical Commission P.O. Box 12276 Austin, Texas 78711-2276

**RE:** Proposed Jefferson County Drainage District No. 6 Project:

**Ditch 505 Detention** 

Fannett, Jefferson County, Texas

HJN 21005-001EA

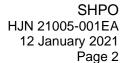
Dear Sirs:

Jefferson County Drainage District No. 6 (DD6) implements and maintains drainage projects throughout the Districts' 486 square mile area located in Jefferson County and includes the cities of Beaumont, Bevil Oaks, China and Nome, Texas. DD6 also works with other jurisdictions to identify flood-prone areas, to encourage inclusion of flood-damage avoidance measures in land development. DD6 has applied to the Federal Emergency Management Agency (FEMA) for grant funding to assist with the improvement to drainage in and around the community of Fannett in Jefferson County. Environmental reviews are required under the National Environmental Policy Act (NEPA) and the Council on Environmental Quality Guidelines, 40 CFR Parts 1500 to 1508. This coordination letter is being provided for your agency's' response in conformance with NEPA procedures.

The project will involve the construction of an approximately 240-acre detention basin on Ditch 505 just north of Interstate 10 and south of Clubb Road (see project figures in Appendix 1). Additional culverts will also be installed under Clubb Road to improve conveyance into the detention basin from areas upstream. The detention basin will be excavated approximately 4 feet deep in addition to a detention berm placed around the lower portion of the basin to increase detention capacity. The primary benefit area is in the community of Fannett downstream of the proposed basin with benefits also realized upstream of the basin along Clubb Road.

Appendix 1 contains maps depicting the proposed drainage improvement project, including an aerial view of the project area and a topographic map of the project area. Land use of the surrounding area is agricultural and residential. Soils on the subject site include Beaumont clay, LaBelle clay loam, and League clay.

The proposed project includes the excavation of a detention basin within historical farmland. A 1938 aerial photograph is included in the Appendix 1. Ditch 505 appears to historically have been a natural tributary of Taylors Bayou; therefore, there would be expected at least a moderate probability of cultural resources associated with the tributary. However, the site has been subject to historical farming practices including plowing for at least a century or more. With the combination of clay soils and agricultural plowing, we believe the likelihood of





remaining intact cultural deposits would be low. We believe a detailed cultural resources study on the project site would not yield any meaningful information.

Should you concur with Horizon's opinion, please sign below and return. Otherwise, Horizon requests that your office respond with additional information pertaining to the type and intensity of cultural resources investigations you require within the Project Area. If you need any additional information, please feel free to call or email me.

For Horizon Environmental Services, Inc.

C. Lee Sherrod

Concurrence	Date





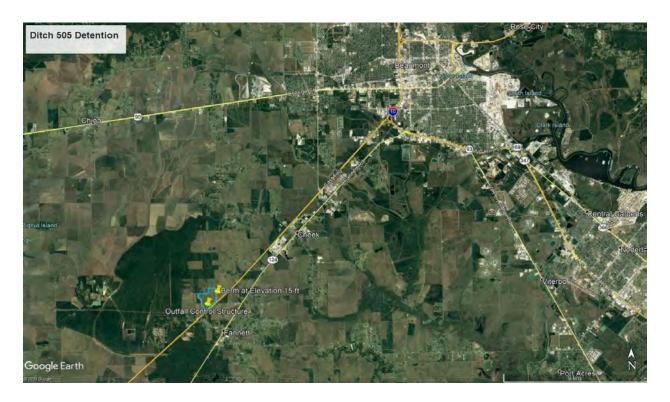


Figure 1: Location



Figure 2: Project





Figure 3: Topo

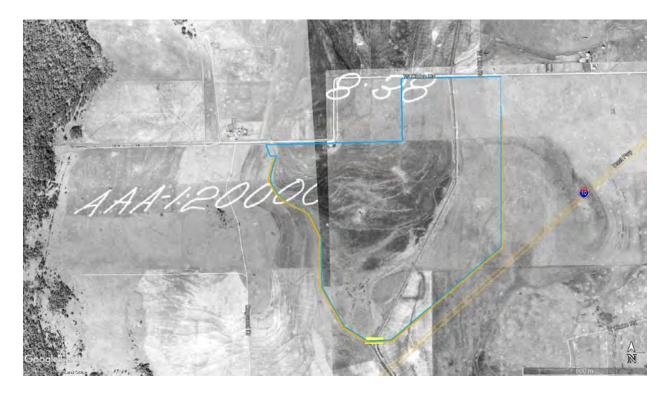


Figure 4: 1938 Aerial Photograph

## **Jesse Owens**

**From:** noreply@thc.state.tx.us

**Sent:** Tuesday, January 26, 2021 9:31 AM **To:** Jesse Owens; reviews@thc.state.tx.us

**Subject:** Section 106 Submission

## [EXTERNAL EMAIL]



Re: Project Review under Section 106 of the National Historic Preservation Act and/or the Antiquities Code of Texas **THC Tracking #202104990** 

JCDD6 Ditch 505 Detention Project North of IH 10 & FM 365 Beaumont,TX 77705

**Description:** Request for consultation regarding cultural resources compliance requirements under Section 106 of NHPA and Antiquities Code of Texas for proposed construction of a 240-acre detention basin.

## Dear Jeffrey D. Owens:

Thank you for your submittal regarding the above-referenced project. This response represents the comments of the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission (THC), pursuant to review under Section 106 of the National Historic Preservation Act and the Antiquities Code of Texas.

The review staff, led by Amy Borgens, Taylor Bowden, Ashley Salie, has completed its review and has made the following determinations based on the information submitted for review:

#### **Above-Ground Resources**

• No historic properties are present or affected by the project as proposed. However, if historic properties are discovered or unanticipated effects on historic properties are found, work should cease in the immediate area; work can continue where no historic properties are present. Please contact the THC's History Programs Division at 512-463-5853 to consult on further actions that may be necessary to protect historic properties.

# **Archeology Comments**

• No identified historic properties, archeological sites, or other cultural resources are present or affected. However, if cultural materials are encountered during project activities, work should cease in the immediate area; work can continue where no cultural materials are present. Please contact the THC's Archeology Division at 512-463-6096 to consult on further actions that may be necessary to protect the cultural remains.

We look forward to further consultation with your office and hope to maintain a partnership that will foster effective historic preservation. Thank you for your cooperation in this review process, and for your efforts to preserve the

irreplaceable heritage of Texas. If the project changes, or if new historic properties are found, please contact the review staff. If you have any questions concerning our review or if we can be of further assistance, please email the following reviewers: amy.borgens@thc.texas.gov, taylor.bowden@thc.texas.gov, ashley.salie@thc.texas.gov.

This response has been sent through the electronic THC review and compliance system (eTRAC). Submitting your project via eTRAC eliminates mailing delays and allows you to check the status of the review, receive an electronic response, and generate reports on your submissions. For more information, visit <a href="http://thc.texas.gov/etrac-system">http://thc.texas.gov/etrac-system</a>.

Sincerely,

for Mark Wolfe, State Historic Preservation Officer Executive Director, Texas Historical Commission

Please do not respond to this email.

Torph Kouch

[EXTERNAL EMAIL] Exercise caution. Do not open attachments or click links from unknown senders or unexpected email



12 January 2021

Texas Parks and Wildlife Department Wildlife Habitat Assessment Program 4200 Smith School Road Austin, Texas 78744

**RE:** Proposed Jefferson County Drainage District No. 6 Project:

Ditch 505 Detention

Fannett, Jefferson County, Texas

HJN 21005-001EA

Dear Sirs:

Jefferson County Drainage District No. 6 (DD6) implements and maintains drainage projects throughout the Districts' 486 square mile area located in Jefferson County and includes the cities of Beaumont, Bevil Oaks, China and Nome, Texas. DD6 also works with other jurisdictions to identify flood-prone areas, to encourage inclusion of flood-damage avoidance measures in land development. DD6 has applied to the Federal Emergency Management Agency (FEMA) for grant funding to assist with the improvement to drainage in and around the community of Fannett in Jefferson County. Environmental reviews are required under the National Environmental Policy Act (NEPA) and the Council on Environmental Quality Guidelines, 40 CFR Parts 1500 to 1508. This coordination letter is being provided for your agency's' response in conformance with NEPA procedures.

The project will involve the construction of an approximately 240-acre detention basin on Ditch 505 just north of Interstate 10 and south of Clubb Road (see project figures in Appendix 1). Additional culverts will also be installed under Clubb Road to improve conveyance into the detention basin from areas upstream. The detention basin will be excavated approximately 4 feet deep in addition to a detention berm placed around the lower portion of the basin to increase detention capacity. The primary benefit area is in the community of Fannett downstream of the proposed basin with benefits also realized upstream of the basin along Clubb Road.

Appendix 1 contains maps depicting the proposed drainage improvement project, including an aerial view of the project area and a topographic map of the project area. Land use of the surrounding area is agricultural and residential.

The site is generally characterized as grazing pasture with man-made ditches. Dominant vegetation includes pasture grasses including dallisgrass (*Paspalum dilatatum*), bermudagrass (*Cynodon dactylon*), and various weeds including deep-rooted sedge (*Cyperus* entrerianus), ragweed (*Ambrosia* sp.), Brazilian vervain (*Verbena brasiliensis*), sumpweed (*Iva* annua). Scattered trees and shrubs including sugarberry (*Celtis laevigata*), sweetgum (*Liquidambar* styraciflua), Chinese tallow (*Triadica sebifera*), water oak (*Quercus nigra*), and yaupon (*Ilex vomitoria*) are present along portions of the ditches and periphery of the site. On-site photographs are provided in Appendix 2.



Federally listed threatened or endangered (T/E) species known to occur in Jefferson County include eastern black rail (*Laterallus jamaicensis ssp. Jamaicensis*), piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), West Indian manatee (*Trichechus manatus*), green sea turtle (*Chelonia mydas*), Atlantic hawksbill sea turtle (*Eretmochelys imbricata*), Kemp's ridley sea turtle (*Lepidochelys kempii*), leatherback sea turtle (*Dermochelys coriacea*), and loggerhead sea turtle (*Caretta caretta*) (IPAC, 2021 – Appendix 3). No federally designated critical habitat is present in the project area. Horizon observed no federally listed T/E species or potential habitats on or within the immediate vicinity of the project area. We believe that a "No Effect" finding is appropriate for this project.

Please review the attached figures and information concerning the proposed project to determine if the project is consistent with your agency's environmental regulations or policies. Please respond by letter at your earliest convenience. Your prompt attention to this matter would be greatly appreciated, as your signed concurrence letter is necessary to complete the application for grant funding from FEMA.

Please call me should you have any questions concerning this project or if I can be of any further assistance.

Sincerely,

For Horizon Environmental Services, Inc.

C. Lee Sherrod





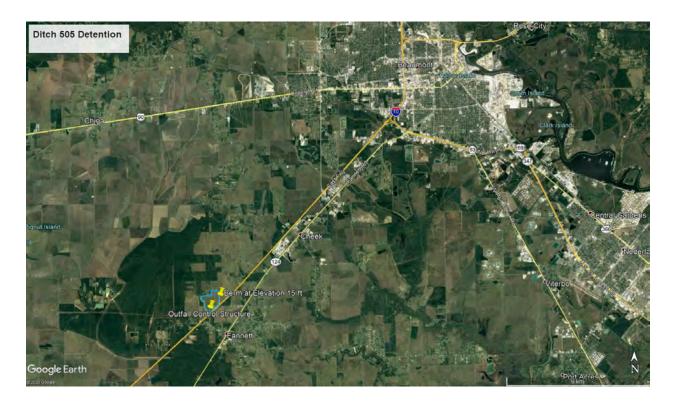


Figure 1: Location



Figure 2: Project





Figure 3: Topo



#### **APPENDIX 2**

**PHOTOGRAPHS** 





PHOTO 1
Typical view of Property



PHOTO 3 Ditch 505



PHOTO 2
Typical view of Property



PHOTO 4 Ditch 505



# APPENDIX 3 IPAC SPECIES LIST



# United States Department of the Interior



#### FISH AND WILDLIFE SERVICE

Texas Coastal Ecological Services Field Office 4444 Corona Drive, Suite 215 Corpus Christi, TX 78411 Phone: (281) 286-8282 Fax: (281) 488-5882

http://www.fws.gov/southwest/es/ES Lists Main2.html

In Reply Refer To: January 12, 2021

Consultation Code: 02ETTX00-2021-SLI-0825

Event Code: 02ETTX00-2021-E-01889 Project Name: Ditch 505 Detention

Subject: List of threatened and endangered species that may occur in your proposed project

location or may be affected by your proposed project

#### To Whom It May Concern:

The U.S. Fish and Wildlife Service (Service) field offices in Clear Lake, Tx, and Corpus Christi, Tx, have combined administratively to form the Texas Coastal Ecological Services Field Office. A map of the Texas Coastal Ecological Services Field Office area of responsibility can be found at: <a href="http://www.fws.gov/southwest/es/TexasCoastal/Map.html">http://www.fws.gov/southwest/es/TexasCoastal/Map.html</a>. All project related correspondence should be sent to the field office responsible for the area in which your project occurs. For projects located in southeast Texas please write to: Field Supervisor; U.S. Fish and Wildlife Service; 17629 El Camino Real Ste. 211; Houston, Texas 77058. For projects located in southern Texas please write to: Field Supervisor; U.S. Fish and Wildlife Service; P.O. Box 81468; Corpus Christi, Texas 78468-1468. For projects located in six counties in southern Texas (Cameron, Hidalgo, Starr, Webb, Willacy, and Zapata) please write: Santa Ana NWR, ATTN: Ecological Services Sub Office, 3325 Green Jay Road, Alamo, Texas 78516.

The enclosed species list identifies federally threatened, endangered, and proposed to be listed species; designated critical habitat; and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project.

New information from updated surveys, changes in the abundance and distribution of species, changes in habitat conditions, or other factors could change the list. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS-IPaC website <a href="http://ecos.fws.gov/ipac/">http://ecos.fws.gov/ipac/</a> at regular intervals during project planning and implementation for updates to species list and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

2

Candidate species have no protection under the Act but are included for consideration because they could be listed prior to the completion of your project. The other species information should help you determine if suitable habitat for these listed species exists in any of the proposed project areas or if project activities may affect species on-site, off-site, and/or result in "take" of a federally listed species.

"Take" is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. In addition to the direct take of an individual animal, habitat destruction or modification can be considered take, regardless of whether it has been formally designated as critical habitat, if the activity results in the death or injury of wildlife by removing essential habitat components or significantly alters essential behavior patterns, including breeding, feeding, or sheltering.

#### **Section 7**

Section 7 of the Act requires that all Federal agencies consult with the Service to ensure that actions authorized, funded or carried out by such agencies do not jeopardize the continued existence of any listed threatened or endangered species or adversely modify or destroy critical habitat of such species. It is the responsibility of the Federal action agency to determine if the proposed project may affect threatened or endangered species. If a "may affect" determination is made, the Federal agency shall initiate the section 7 consultation process by writing to the office that has responsibility for the area in which your project occurs.

**Is not likely to adversely affect** - the project may affect listed species and/or critical habitat; however, the effects are expected to be discountable, insignificant, or completely beneficial. Certain avoidance and minimization measures may need to be implemented in order to reach this level of effects. The Federal agency or the designated non-Federal representative should seek written concurrence from the Service that adverse effects have been eliminated. Be sure to include all of the information and documentation used to reach your decision with your request for concurrence. The Service must have this documentation before issuing a concurrence.

**Is likely to adversely affect** - adverse effects to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial. If the overall effect of the proposed action is beneficial to the listed species but also is likely to cause some adverse effects to individuals of that species, then the proposed action "is likely to adversely affect" the listed species. An "is likely to adversely affect" determination requires the Federal action agency to initiate formal section 7 consultation with this office.

**No effect** - the proposed action will not affect federally listed species or critical habitat (i.e., suitable habitat for the species occurring in the project county is not present in or adjacent to the action area). No further coordination or contact with the Service is necessary. However, if the project changes or additional information on the distribution of listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.

Regardless of your determination, the Service recommends that you maintain a complete record of the evaluation, including steps leading to the determination of affect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related articles.

Please be advised that while a Federal agency may designate a non-Federal representative to conduct informal consultations with the Service, assess project effects, or prepare a biological assessment, the Federal agency must notify the Service in writing of such a designation. The Federal agency shall also independently review and evaluate the scope and contents of a biological assessment prepared by their designated non-Federal representative before that document is submitted to the Service.

The Service's Consultation Handbook is available online to assist you with further information on definitions, process, and fulfilling Act requirements for your projects at: <a href="http://www.fws.gov/endangered/esa-library/pdf/esa\_section7">http://www.fws.gov/endangered/esa-library/pdf/esa\_section7</a> handbook.pdf

#### **Section 10**

If there is no federal involvement and the proposed project is being funded or carried out by private interests and/or non-federal government agencies, and the project as proposed may affect listed species, a section 10(a)(1)(B) permit is recommended. The Habitat Conservation Planning Handbook is available at: http://www.fws.gov/endangered/esa-library/pdf/HCP\_Handbook.pdf

#### **Service Response**

Please note that the Service strives to respond to requests for project review within 30 days of receipt, however, this time period is not mandated by regulation. Responses may be delayed due to workload and lack of staff. Failure to meet the 30-day timeframe does not constitute a concurrence from the Service that the proposed project will not have impacts to threatened and endangered species.

#### Proposed Species and/or Proposed Critical Habitat

While consultations are required when the proposed action may affect listed species, section 7(a) (4) was added to the ESA to provide a mechanism for identifying and resolving potential conflicts between a proposed action and proposed species or proposed critical habitat at an early planning stage. The action agency should seek conference from the Service to assist the action agency in determining effects and to advise the agency on ways to avoid or minimize adverse effect to proposed species or proposed critical habitat.

#### **Candidate Species**

Candidate species are species that are being considered for possible addition to the threatened and endangered species list. They currently have no legal protection under the ESA. If you find you have potential project impacts to these species the Service would like to provide technical assistance to help avoid or minimize adverse effects. Addressing potential impacts to these species at this stage could better provide for overall ecosystem healh in the local area and ay avert potential future listing.

Several species of freshwater mussels occur in Texas and four are candidates for listing under the ESA. The Service is also reviewing the status of six other species for potential listing under the ESA. One of the main contributors to mussel die offs is sedimentation, which smothers and suffocates mussels. To reduce sedimentation within rivers, streams, and tributaries crossed by a

project, the Service recommends that that you implement the best management practices found at: http://www.fws.gov/southwest/es/TexasCoastal/FreshwaterMussels.html.

Candidate Conservation Agreements (CCAs) or Candidate Conservation Agreements with Assurances (CCAAs) are voluntary agreements between the Service and public or private entities to implement conservation measures to address threats to candidate species. Implementing conservation efforts before species are listed increases the likelihood that simpler, flexible, and more cost-effective conservation options are available. A CCAA can provide participants with assurances that if they engage in conservation actions, they will not be required to implement additional conservation measures beyond those in the agreement. For additional information on CCAs/CCAAs please visit the Service's website at <a href="http://www.fws.gov/endangered/what-we-do/cca.html">http://www.fws.gov/endangered/what-we-do/cca.html</a>.

#### **Migratory Birds**

The Migratory Bird Treaty Act (MBTA) implements various treaties and conventions for the protection of migratory birds. Under the MBTA, taking, killing, or possessing migratory birds is unlawful. Many may nest in trees, brush areas or other suitable habitat. The Service recommends activities requiring vegetation removal or disturbance avoid the peak nesting period of March through August to avoid destruction of individuals or eggs. If project activities must be conducted during this time, we recommend surveying for active nests prior to commencing work. A list of migratory birds may be viewed at <a href="http://www.fws.gov/migratorybirds/regulationspolicies/mbta/mbtandx.html">http://www.fws.gov/migratorybirds/regulationspolicies/mbta/mbtandx.html</a>.

The bald eagle (*Haliaeetus leucocephalus*) was delisted under the Act on August 9, 2007. Both the bald eagle and the goden eagle (*Aquila chrysaetos*) are still protected under the MBTA and BGEPA. The BGEPA affords both eagles protection in addition to that provided by the MBTA, in particular, by making it unlawful to "disturb" eagles. Under the BGEPA, the Service may issue limited permits to incidentally "take" eagles (e.g., injury, interfering with normal breeding, feeding, or sheltering behavior nest abandonment). For more information on bald and golden eagle management guidlines, we recommend you review information provided at http://www.fws.gov/midwest/eagle/pdf/NationalBaldEagleManagementGuidelines.pdf.

The construction of overhead power lines creates threats of avian collision and electrocution. The Service recommends the installation of underground rather than overhead power lines whenever possible. For new overhead lines or retrofitting of old lines, we recommend that project developers implement, to the maximum extent practicable, the Avian Power Line Interaction Committee guidelines found at <a href="http://www.aplic.org/">http://www.aplic.org/</a>.

Meteorological and communication towers are estimated to kill millions of birds per year. We recommend following the guidance set forth in the Service Interim Guidelines for Recommendations on Communications Tower Siting, Constructions, Operation and Decommissioning, found online at: <a href="http://www.fws.gov/habitatconservation/">http://www.fws.gov/habitatconservation/</a> communicationtowers.html, to minimize the threat of avian mortality at these towers. Monitoring at these towers would provide insight into the effectiveness of the minimization measures. We request the results of any wildlife mortality monitoring at towers associated with this project.

We request that you provide us with the final location and specifications of your proposed towers, as well as the recommendations implemented. A Tower Site Evaluation Form is also available via the above website; we recommend you complete this form and keep it in your files. If meteorological towers are to be constructed, please forward this completed form to our office.

More information concerning sections 7 and 10 of the Act, migratory birds, candidate species, and landowner tools can be found on our website at: <a href="http://www.fws.gov/southwest/es/">http://www.fws.gov/southwest/es/</a>
TexasCoastal/ProjectReviews.html.

#### **Wetlands and Wildlife Habitat**

Wetlands and riparian zones provide valuable fish and wildlife habitat as well as contribute to flood control, water quality enhancement, and groundwater recharge. Wetland and riparian vegetation provides food and cover for wildlife, stabilizes banks and decreases soil erosion.

These areas are inherently dynamic and very sensitive to changes caused by such activities as overgrazing, logging, major construction, or earth disturbance. Executive Order 11990 asserts that each agency shall provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial value of wetlands in carrying out the agency's responsibilities. Construction activities near riparian zones should be carefully designed to minimize impacts. If vegetation clearing is needed in these riparian areas, they should be re-vegetated with native wetland and riparian vegetation to prevent erosion or loss of habitat. We recommend minimizing the area of soil scarification and initiating incremental re-establishment of herbaceous vegetation at the proposed work sites. Denuded and/or disturbed areas should be re-vegetated with a mixture of native legumes and grasses.

Species commonly used for soil stabilization are listed in the Texas Department of Agriculture's (TDA) Native Tree and Plant Directory, available from TDA at P.O. Box 12847, Austin, Texas 78711. The Service also urges taking precautions to ensure sediment loading does not occur to any receiving streams in the proposed project area. To prevent and/or minimize soil erosion and compaction associated with construction activities, avoid any unnecessary clearing of vegetation, and follow established rights-of-way whenever possible. All machinery and petroleum products should be stored outside the floodplain and/or wetland area during construction to prevent possible contamination of water and soils.

Wetlands and riparian areas are high priority fish and wildlife habitat, serving as important sources of food, cover, and shelter for numerous species of resident and migratory wildlife. Waterfowl and other migratory birds use wetlands and riparian corridors as stopover, feeding, and nesting areas. We strongly recommend that the selected project site not impact wetlands and riparian areas, and be located as far as practical from these areas. Migratory birds tend to concentrate in or near wetlands and riparian areas and use these areas as migratory flyways or corridors. After every effort has been made to avoid impacting wetlands, you anticipate unavoidable wetland impacts will occur; you should contact the appropriate U.S. Army Corps of Engineers office to determine if a permit is necessary prior to commencement of construction activities.

If your project will involve filling, dredging, or trenching of a wetland or riparian area it may require a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers (COE).

For permitting requirements please contact the U.S. Corps of Engineers, District Engineer, P.O. Box 1229, Galveston, Texas 77553-1229, (409) 766-3002.

#### **Beneficial Landscaping**

In accordance with Executive Order 13112 on Invasive Species and the Executive Memorandum on Beneficial Landscaping (42 C.F.R. 26961), where possible, any landscaping associated with project plans should be limited to seeding and replanting with native species. A mixture of grasses and forbs appropriate to address potential erosion problems and long-term cover should be planted when seed is reasonably available. Although Bermuda grass is listed in seed mixtures, this species and other introduced species should be avoided as much as possible. The Service also recommends the use of native trees, shrubs, and herbaceous species that are adaptable, drought tolerant and conserve water.

#### **State Listed Species**

The State of Texas protects certain species. Please contact the Texas Parks and Wildlife Department (Endangered Resources Branch), 4200 Smith School Road, Austin, Texas 78744 (telephone 512/389-8021) for information concerning fish, wildlife, and plants of State concern or visit their website at: <a href="http://www.tpwd.state.tx.us/huntwild/wild/wildlife\_diversity/texas\_rare\_species/listed\_species/">http://www.tpwd.state.tx.us/huntwild/wildlife\_diversity/texas\_rare\_species/listed\_species/</a>.

If we can be of further assistance, or if you have any questions about these comments, please contact 281/286-8282 if your project is in southeast Texas, or 361/994-9005, ext. 246, if your project is in southern Texas. Please refer to the Service consultation number listed above in any future correspondence regarding this project.

#### Attachment(s):

Official Species List

# **Official Species List**

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Texas Coastal Ecological Services Field Office** 4444 Corona Drive, Suite 215 Corpus Christi, TX 78411 (281) 286-8282

# **Project Summary**

Consultation Code: 02ETTX00-2021-SLI-0825 Event Code: 02ETTX00-2021-E-01889

Project Name: Ditch 505 Detention
Project Type: LAND - DRAINAGE

Project Description: Drainage/Flood Control Improvements

Project Location:

Approximate location of the project can be viewed in Google Maps: <a href="https://www.google.com/maps/@29.9441731,-94.25978748861814,14z">https://www.google.com/maps/@29.9441731,-94.25978748861814,14z</a>



Counties: Jefferson County, Texas

### **Endangered Species Act Species**

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. <u>NOAA Fisheries</u>, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

#### **Mammals**

NAME STATUS

#### West Indian Manatee Trichechus manatus

Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.

This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements.

Species profile: https://ecos.fws.gov/ecp/species/4469

#### **Birds**

NAME STATUS

#### Eastern Black Rail Laterallus jamaicensis ssp. jamaicensis

Threatened

No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/10477">https://ecos.fws.gov/ecp/species/10477</a>

#### Piping Plover Charadrius melodus

Threatened

 $Population: [At lantic\ Coast\ and\ Northern\ Great\ Plains\ populations] \ -\ Wherever\ found,\ except$ 

those areas where listed as endangered.

There is **final** critical habitat for this species. The location of the critical habitat is not available.

Species profile: https://ecos.fws.gov/ecp/species/6039

#### Red Knot Calidris canutus rufa

Threatened

No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/1864">https://ecos.fws.gov/ecp/species/1864</a>

#### **Reptiles**

NAME

#### Green Sea Turtle Chelonia mydas

Threatened

Population: North Atlantic DPS

There is **final** critical habitat for this species. The location of the critical habitat is not available.

Species profile: <a href="https://ecos.fws.gov/ecp/species/6199">https://ecos.fws.gov/ecp/species/6199</a>

#### Hawksbill Sea Turtle Eretmochelys imbricata

Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.

Species profile: https://ecos.fws.gov/ecp/species/3656

#### Kemp's Ridley Sea Turtle *Lepidochelys kempii*

Endangered

There is **proposed** critical habitat for this species. The location of the critical habitat is not

available.

Species profile: <a href="https://ecos.fws.gov/ecp/species/5523">https://ecos.fws.gov/ecp/species/5523</a>

#### Leatherback Sea Turtle Dermochelys coriacea

Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.

Species profile: https://ecos.fws.gov/ecp/species/1493

#### Loggerhead Sea Turtle Caretta caretta

Threatened

Population: Northwest Atlantic Ocean DPS

There is **final** critical habitat for this species. The location of the critical habitat is not available.

Species profile: <a href="https://ecos.fws.gov/ecp/species/1110">https://ecos.fws.gov/ecp/species/1110</a>

#### **Critical habitats**

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.



March 8, 2021

#### Life's better outside.®

Commissioners

S. Reed Morian Chairman Houston

Arch "Beaver" Aplin, III Vice-Chairman Lake Jackson

> James E. Abell Kilgore

> > Oliver J. Bell Cleveland

> > Anna B. Galo Laredo

Jeffery D. Hildebrand Houston

> Jeanne W. Latimer San Antonio

Robert L. "Bobby" Patton, Jr. Fort Worth

> Dick Scott Wimberley

Lee M. Bass Chairman-Emeritus Fort Worth

T. Dan Friedkin Chairman-Emeritus Houston

Carter P. Smith Executive Director Mr. Lee Sherrod Horizon Environmental Services, Inc. 1507 South IH 35 Austin, TX 78741

RE: Proposed Jefferson County Drainage District No. 6 Project: Ditch 505 Detention, Fannett, Jefferson County, Texas HJN 21005-001

Dear Mr. Sherrod:

Texas Parks and Wildlife Department (TPWD) has received the request for review of the proposed project referenced above. TPWD staff has reviewed the information provided and offers the following comments and recommendations concerning this project. For tracking purposes, please refer to TPWD project number 45919 in any return correspondence regarding this project.

#### **Project Description**

The project will involve the construction of an approximately 240-acre detention basin on Ditch 505 just north of Interstate 10 and south of Clubb Road. Additional culverts will also be installed under Clubb Road to improve conveyance into the detention basin from areas upstream. The detention basin will be excavated approximately 4 feet deep and a detention berm will be placed around the lower portion of the basin to increase detention capacity.

#### **General Construction Recommendations**

TPWD would like to provide the following general construction recommendations to assist in project planning.

Recommendation: TPWD recommends the judicious use and placement of sediment control fence to exclude wildlife from the construction area. In many cases sediment control fence placement for the purposes of controlling erosion and protecting water quality can be modified minimally to also provide the benefit of excluding wildlife access to construction areas. The exclusion fence should be buried at least six inches and be at least 24 inches high. Construction personnel should be encouraged to examine the inside of the exclusion area daily to determine if any wildlife species have been trapped inside the area of impact and provide safe egress opportunities prior to initiation of construction activities. The exclusion fence should be maintained for the life of the project and only be removed after the

Mr. Lee Sherrod Page 2 March 8, 2021

> construction is completed and the disturbed site has been revegetated with sitespecific native species.

> For soil stabilization and/or revegetation of disturbed areas, TPWD recommends erosion and seed/mulch stabilization materials that avoid entanglement hazards to snakes and other wildlife species. TPWD recommends the use of no-till drilling, hydromulching and/or hydroseeding due to a reduced risk to wildlife.

Because the mesh found in many erosion control blankets or mats pose an entanglement hazard to wildlife, TPWD recommends avoiding the use of plastic mesh matting. If erosion control blankets or mats containing netting must be used, the netting should be loosely woven, natural fiber material where the mesh design allows the threads to move, therefore allowing expansion of the mesh openings.

During construction, operation, and maintenance of the proposed facility, TPWD recommends observing slow (25 miles per hour, or less) speed limits within the project site. Reduced speed limits would allow personnel to see wildlife in the vehicle path and avoid harming them.

#### **Federal Laws**

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits direct and affirmative purposeful actions that reduce migratory birds, their eggs, or their nests, by killing or capturing, to human control, except when specifically authorized by the U.S. Fish and Wildlife Service. This protection applies to most native bird species, including ground nesting species.

**Recommendation:** TPWD recommends excluding vegetation clearing activities during the general bird nesting season, March 15 through September 15, to avoid adverse impacts to birds. If clearing vegetation during the migratory bird nesting season is unavoidable, TPWD recommends surveying the area proposed for disturbance for active nests (nests with eggs or young). Nest surveys should take place within 5 days of scheduled clearing to maximize the detection of active nests. Any vegetation (trees, shrubs, and grasses) or bare ground where occupied nests are located should not be disturbed and a vegetation buffer area of no less than 150-feet in diameter should remain around the nest until all young have fledged.

Mr. Lee Sherrod Page 3 March 8, 2021

#### **State Laws**

Parks and Wildlife Code – Chapter 64, Birds

Texas Parks and Wildlife Code (PWC) Section 64.002, regarding protection of nongame birds, provides that no person may catch, kill, injure, pursue, or possess a bird that is not a game bird. PWC Section 64.003, regarding destroying nests or eggs, provides that, no person may destroy or take the nests, eggs, or young and any wild game bird, wild bird, or wild fowl.

**Recommendation:** Please review the *Federal Law: Migratory Bird Treaty Act* section above for recommendations as they are also applicable for PWC Chapter 64 compliance.

#### **Species of Concern/Special Features**

In addition to state and federally protected species, TPWD tracks species considered to be Species of Greatest Conservation Need (SGCN) that, due to limited distributions and/or declining populations, face threat of extirpation or extinction but currently lack the legal protections given to threatened or endangered species. Special landscape features, natural plant communities, and SGCN are rare resources for which TPWD actively promotes conservation, and TPWD considers it important to minimize impacts to such resources to reduce the likelihood of endangerment and preclude the need to list SGCN as threatened or endangered in the future. These species and communities are tracked in the Texas Natural Diversity Database (TXNDD). The most current and accurate TXNDD data can be requested from the TXNDD website.

No records of rare, threatened, or endangered species have documented within 1.5 miles of the project area in the TXNDD. Please note that the absence of TXNDD information in an area does not imply that a species is absent from that area. Given the small proportion of public versus private land in Texas, the TXNDD does not include a representative inventory of rare resources in the state. Although it is based on the best data available to TPWD regarding rare and protected species, data from the TXNDD does not provide a definitive statement as to the presence, absence or condition of special species, natural communities, or other significant features within your project area. These data are not inclusive and cannot be used as presence/absence data. This information cannot be substituted for on-the-ground surveys.

**Recommendation:** Please review the TPWD county list for Jefferson County, as rare and protected species could be present, depending upon habitat availability. The county lists are available on the Rare, Threatened, and Endangered Species of

Mr. Lee Sherrod Page 4 March 8, 2021

recommends that precautions be taken to avoid impacts to them. protected species, natural plant communities, or special features, Texas website. If during construction, the project area is found to contain rare or

encountered during construction, measures should be taken to avoid impacting consideration of all factors contributing to the lack of detectable presence. If of a species can only be established with repeated negative observations and habitat, transiency, and population density (both wildlife and human). The absence including daily and seasonal activity cycles, environmental activity cues, preferred Determining the actual presence of a species in an area depends on many variables

proposed project will not adversely impact fish and wildlife resources. the 45-day review timeframe does not constitute a concurrence from TPWD that the period. Responses may be delayed due to workload and lack of staff. Failure to meet TPWD strives to respond to requests for project review within a 45-day comment

questions, please contact me at (806) 761-4936 or Richard. Hanson@tpwd.texas.gov. TPWD advises review and implementation of these recommendations. If you have any

Sincerely,

Rick Hanson

Rick Hanson Wildlife Habitat Assessment Program Wildlife Division

RH: 45919



#### Environmental Services, Inc.

12 January 2021

NFIP State Coordinator Texas Water Development Board P. O. Box 13231 Austin, Texas 78711-3231

**RE:** Proposed Jefferson County Drainage District No. 6 Project:

**Ditch 505 Detention** 

Fannett, Jefferson County, Texas

HJN 21005-001EA

Dear Sirs:

Jefferson County Drainage District No. 6 (DD6) implements and maintains drainage projects throughout the Districts' 486 square mile area located in Jefferson County and includes the cities of Beaumont, Bevil Oaks, China and Nome, Texas. DD6 also works with other jurisdictions to identify flood-prone areas, to encourage inclusion of flood-damage avoidance measures in land development. DD6 has applied to the Federal Emergency Management Agency (FEMA) for grant funding to assist with the improvement to drainage in and around the community of Fannett in Jefferson County. Environmental reviews are required under the National Environmental Policy Act (NEPA) and the Council on Environmental Quality Guidelines, 40 CFR Parts 1500 to 1508. This coordination letter is being provided for your agency's' response in conformance with NEPA procedures.

The project will involve the construction of an approximately 240-acre detention basin on Ditch 505 just north of Interstate 10 and south of Clubb Road (see project figures in Appendix 1). Additional culverts will also be installed under Clubb Road to improve conveyance into the detention basin from areas upstream. The detention basin will be excavated approximately 4 feet deep in addition to a detention berm placed around the lower portion of the basin to increase detention capacity. The primary benefit area is in the community of Fannett downstream of the proposed basin with benefits also realized upstream of the basin along Clubb Road.

Appendix 1 contains maps depicting the proposed drainage improvement project, including an aerial view of the project area and a topographic map of the project area. Note that the project area is located within the FEMA 100-year floodplain. Land use of the surrounding area is agricultural and residential.

Please review the attached figures and information concerning the proposed project to determine if the project is consistent with your agency's environmental regulations or policies. Please respond by letter at your earliest convenience. Your prompt attention to this matter would be greatly appreciated, as your signed concurrence letter is necessary to complete the application for grant funding from FEMA.



Please call me should you have any questions concerning this project or if I can be of any further assistance.

Sincerely,

For Horizon Environmental Services, Inc.

C. Lee Sherrod

Senior Project Manager



# APPENDIX 1

**PROJECT FIGURES** 



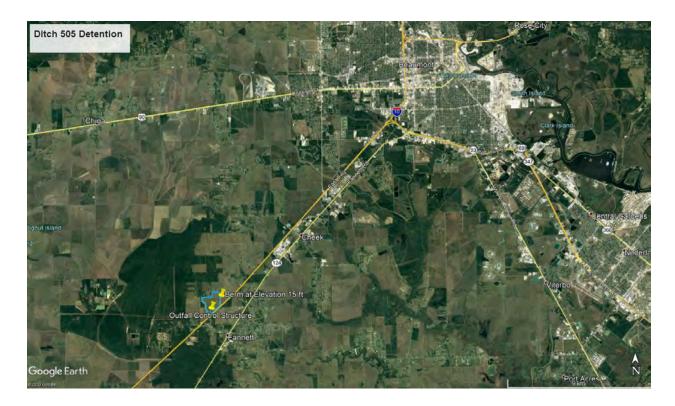


Figure 1: Location

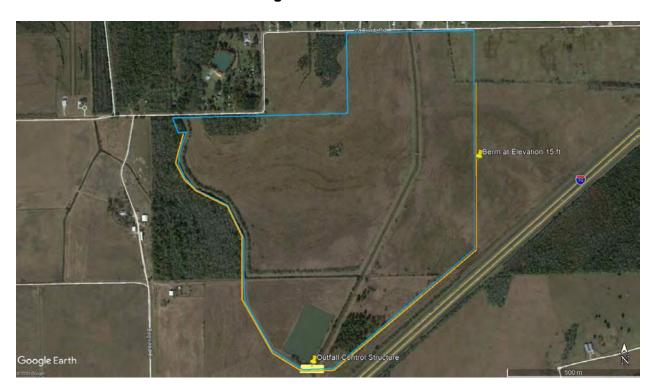


Figure 2: Project





Figure 3: Topo

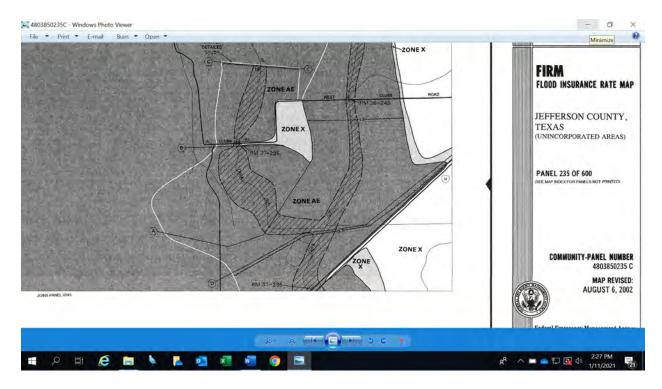


Figure 4: FEMA FIRM Map



#### Environmental Services, Inc.

12 January 2021

US Army Corps of Engineers Galveston Compliance Section PO Box 1229 Galveston, TX 77553-1229

**RE:** Proposed Jefferson County Drainage District No. 6 Project:

Ditch 505 Detention

Fannett, Jefferson County, Texas

HJN 21005-001EA

Dear Sirs:

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The project will involve the construction of an approximately 240-acre detention basin on Ditch 505 just north of Interstate 10 and south of Clubb Road (see project figures in Appendix 1). Additional culverts will also be installed under Clubb Road to improve conveyance into the detention basin from areas upstream. The detention basin will be excavated approximately 4 feet deep in addition to a detention berm placed around the lower portion of the basin to increase detention capacity. A discharge control structure and appropriate erosion stabilization will be constructed at the outfall of the basin. The primary benefit area is in the community of Fannett downstream of the proposed basin with benefits also realized upstream of the basin along Clubb Road.

Appendix 1 contains maps depicting the proposed drainage improvement project, including an aerial view of the project area and a topographic map of the project area. Land use of the surrounding area is agricultural and residential.

The site is generally characterized as grazing pasture with modified ditches. Dominant vegetation includes pasture grasses including dallisgrass (*Paspalum dilatatum*), bermudagrass (*Cynodon dactylon*), and various weeds including deep-rooted sedge (*Cyperus* entrerianus), ragweed (*Ambrosia* sp.), Brazilian vervain (*Verbena brasiliensis*), sumpweed (*Iva* annua). Scattered trees and shrubs including sugarberry (*Celtis laevigata*), sweetgum (*Liquidambar* styraciflua), Chinese tallow (*Triadica sebifera*), water oak (*Quercus nigra*), and yaupon (*Ilex* 



*vomitoria*) are present along portions of the ditches and periphery of the site. On-site photographs are provided in Appendix 2.

Soils on the subject site include Beaumont clay, LaBelle clay loam, and League clay (Soils map, Appendix 1). These soils are listed as hydric soils.

Review of historical topographic maps of the project area indicates that Ditch 505 was likely part of an historical tributary system of Taylors Bayou. Therefore, we conclude that Ditch 505 is a regulated Water of the US. The unnamed tributary was channelized and modified in the early 1900s for agricultural drainage. There is approximately 8500 linear feet of ditch within the detention basin area.

The project site is within the FEMA 100-year floodplain (Appendix 1) and portions of the site are likely subject to flooding from a regulated water of the US (Ditch 505) during a normal year. One small wetland totaling approximately 0.58 acre was identified within the proposed detention basin (Figure 6, Appendix 1). It is undetermined if this wetland would be inundated from Ditch 505 during a normal year. At this time, we will assume the wetland is subject to regulation.

Please review the attached figures and information concerning the proposed project and provide your requirements for additional information, if any to make a determination of jurisdiction and permitting requirements. Your prompt attention to this matter would be greatly appreciated, as your response is necessary to complete the application for grant funding from FEMA.

Please call me should you have any questions concerning this project or if I can be of any further assistance.

Sincerely.

For Horizon Environmental Services, Inc.

C. Lee Sherrod

Senior Project Manager



# APPENDIX 1

**PROJECT FIGURES** 



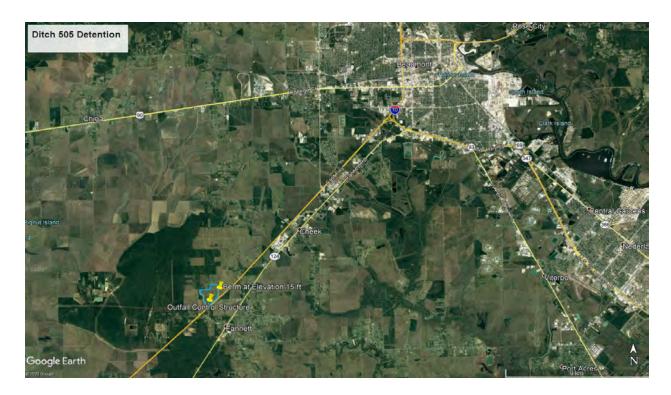


Figure 1: Location

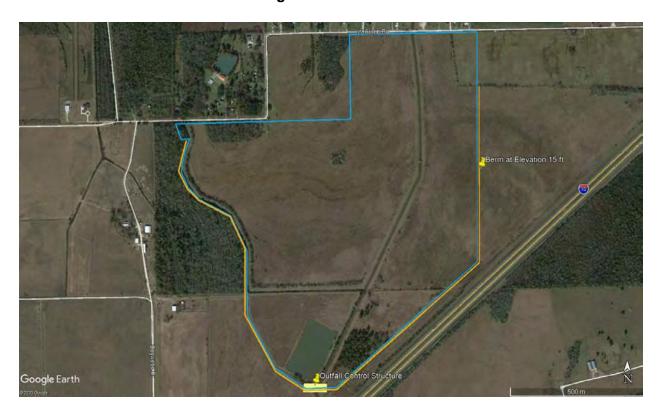


Figure 2: Project





Figure 3: Topo

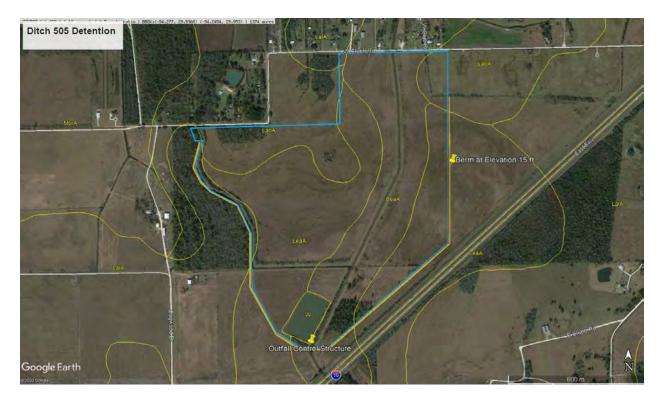


Figure 4: Soils



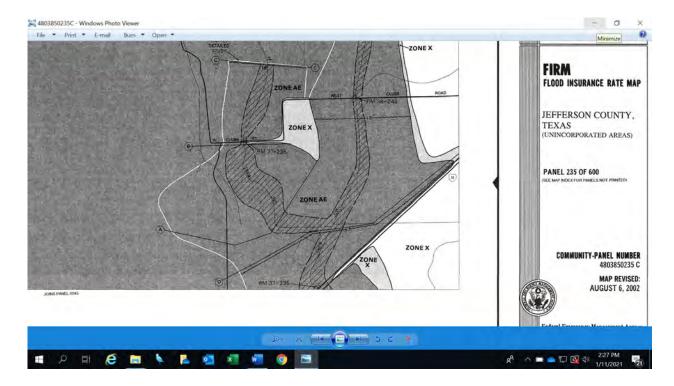
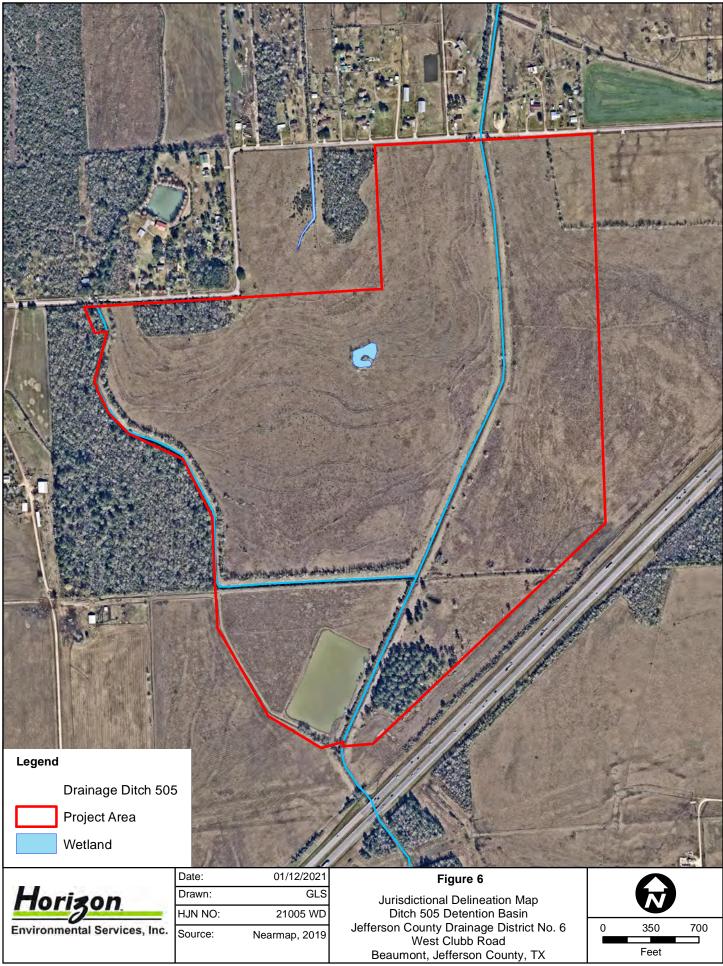


Figure 5: FEMA FIRM Map





## **APPENDIX 2**

#### **PHOTOGRAPHS**





PHOTO 1
Typical view of Property



PHOTO 3
Typical Ditch 505



PHOTO 2
Typical view of Property



PHOTO 4 Wetland

#### JFC22353

# JURISDICTIONAL EVALUATION REPORT

Ditch 505 Flood Detention Project

April 2023

Prepared for

Jefferson County Drainage District No. 6



Prepared by

Freese and Nichols, Inc. 10497 Town and Country Way Suite 500 Houston, Texas 77024 (713) 600-6823



# Jurisdictional Evaluation Report for Ditch 505 Flood Detention Project Freese and Nichols, Inc. April 2023

On April 29, 2022, November 15, 2022, and January 4, 2023 environmental scientists with Freese and Nichols, Inc. (FNI) conducted site visits to the Ditch 505 Flood Detention Project Area near Fannett, Jefferson County, Texas (Figure 1; Appendix A). Jefferson County Drainage District No. 6 (JCDD6) is seeking FEMA funding through the Flood Mitigation Assistance (FMA) program to provide flood relief to the community of Fannett, Texas. The objective of the site visit was to identify potential waters of the U.S. (WOTUS) related to the proposed Ditch 505 Flood Detention project. The information gathered during the site visit is presented below. The Project Area is described as the limits of investigation (LOI) within this report and consists of approximately 230 acres, including segments of Ditch 505 and Ditch 505-B.

#### Purpose:

The purpose of this Assessment is to identify potential WOTUS within the proposed Ditch 505 Flood Detention project.

#### Applicant:

Jefferson County Drainage District No. 6 c/o Karen Stewart Chief Business Officer 6550 Walden Road Beaumont, Texas 77707 (409) 842-1818

#### **Applicant's Agent:**

Michael Lane, PWS Freese and Nichols, Inc. 10497 Town and Country Way, Suite 500 Houston, Texas 77024 (713) 600-6823

#### Methods:

#### Approach

Procedures for performing routine wetland determinations as outlined in the *Corps of Engineers 1987 Wetlands Delineation Manual*, the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region (Version 2.0)*, and the *U.S. Army Corps of Engineers Jurisdictional Determination form Instructional Guidebook* were used to delineate and identify potential WOTUS.

#### Mapping

A variety of resources were used to obtain information regarding potential WOTUS within the Ditch 505 Flood Detention LOI. These sources included the U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps, U.S. Geological Survey (USGS) digitized versions of the 7.5 minute topographic maps, USGS National Hydrography Dataset (NHD), National Wetlands Inventory (NWI) data, and NRCS Soil Survey Geographic (SSURGO) database. Maps of the LOI are located in **Appendix A**. **Figure 2.1** depicts the LOI on an aerial photograph background. **Figure 3** depicts the LOI on the USGS Topographic Quad Fannett West, **Figure 4** depicts the LOI with NWI data, **Figure 5** depicts NRCS soil map units within the LOI, and **Figure 6** depicts the 100-year floodplains in the project vicinity. The maps included in this report were created using ESRI ArcMap 10.7.1.

#### **Results:**

#### Vicinity Map

Figure 1 (Appendix A) shows the general location of the Ditch 505 Flood Detention LOI.

#### Site Description

The Ditch 505 Flood Detention project is located in Jefferson County, near Fannett, Texas. The LOI encompasses the existing Ditch 505 which extends from Clubb Rd for 1 mile south to approximately 400 ft north of IH-10. The LOI also encompasses Ditch 505-B from the northwest extents of the project adjacent to Clubb Rd to its confluence with Ditch 505. The ditch continues south and eventually empties into North Fork Taylor Bayou. The detention basin would be 230 acres in size. Representative photos taken within the LOI can be found in **Appendix B.** 

#### **Hydrologic Characterization**

#### Open Water

Tw open waterbodies were observed within the proposed project LOI. Pond 1 is an off-channel open water body located in the southwest extent of the LOI west of Ditch 505. Pond 1 appears to be a borrow pit where material was excavated for use elsewhere. Pond 2 is also an off-channel open water body located in the southeast extent of the LOI

east of Ditch 505. Pond 2 appears to have been excavated for the purpose of watering livestock. In FNI's opinion, Ponds 1 and 2 were constructed wholly within uplands and are hydrologically disconnected from Ditch 505 by a levee or berm.

#### Streams

No streams were observed within the proposed project LOI.

#### Wetlands

Three wetlands were observed within the proposed project LOI. Wetland 1 is an isolated, depressional forested wetland positioned in the center of the project LOI approximately 1,000 ft west of Ditch 505 and is dominated by Chinese tallow (*Triadica sebifera*) and bagppod (*Sesbania vesicaria*). No hydrologic connectivity was identified between Wetland 1 and a WOTUS. Wetlands 2 and 3 are isolated, depressional emergent wetlands that occur at the southern boundary of the project LOI approximately 300 feet east of Ditch 505 and are dominated by (*Cyperus entrerianus*), (*Rhynchospora corniculata*), and Bermuda grass (*Cynodon dactylon*). These wetlands appear to have been created and/or altered several times as a result of utility line construction based on historical aerial images and conversations with JCDD6 staff. No hydrologic connectivity was identified between Wetlands 2 or 3 and a WOTUS. Wetlands 4, 5, and 6 were also delineated as part of the same wetland mosaic as Wetlands 2 and 3, but were ultimately determined to be outside of the LOI.

Wetland Determination Dataforms associated with these wetlands and uplands within the LOI are located in **Appendix C**.

#### Ditches

Two ditches were observed with the proposed project LOI. Ditch 505 extends from Clubb Rd south for 1 mile to approximately 400 ft north of IH-10. Ditch 505-B extends from the northwest extents of the LOI adjacent to Clubb Rd, to its confluence with Ditch 505 approximately 900 ft northwest of IH-10. From review of the Houston U.S. Geological Survey AMS Series topo map from 1950, these ditches may have been constructed through the historical channelization of ephemeral or intermittent tributaries to North Fork Taylor Bayou.

#### Vegetative Characterization

The proposed project LOI is located within the *Northern Humid Gulf Coastal Prairies* subregion of the *Western Gulf Coastal Plain Ecoregion* (Griffith et al, 2004). Typical vegetation of the region consisted of grasslands dominated by little bluestem (*Schizachyrium scoparium*), yellow Indian grass (*Sorghastrum nutans*), brownseed

paspalum (*Paspalum plicatulum*), gulf muhly (*Muhlenbergia capillaris*), and switchgrass (*Panicum virgatum*). Maritime woodlands were dominated by oaks (*Quercus* spp.) and loblolly pine (*Pinus taeda*), with incursions of exotic Chinese tallow and Chinese privet (*Ligustrum sinense*).

Trees and shrubs observed within the LOI include Chinese tallow, southern wax myrtle (*Morella cerifera*), sugarberry (*Celtis laevigata*) and yaupon (*Ilex vomitoria*). Herbaceous vegetation observed within the LOI include Bahia grass (*Paspalum notatum*) and St. Augustine grass (*Stenotaphrum secundatum*).

#### Soils Characterization

The proposed project LOI includes five soil map units (including Water), as identified using GIS analysis. A GIS layer of soils was created using data from the NRCS Soil Survey Geographic Database (NRCS, 2016) for Jefferson County, Texas. The soil map unit descriptions were obtained from the *Soil Survey of Jefferson County, Texas* (USDA, 2004) and is presented in the following paragraph. **Figure 5** (**Appendix A**) shows the soil map unit distribution within the LOI.

Beaumont clay, 0 to 1 percent slopes; this soil includes poorly drained, non-hydric components.

Labelle clay loam, 0 to 1 percent slopes; this soil includes somewhat poorly drained, hydric, and non-hydric components.

Labella-Levac complex, 0 to 1 percent slopes; this soil complex includes somewhat poorly drained, hydric, and non-hydric components.

League clay, 0 to 1 percent slopes; this soil includes somewhat poorly drained, hydric, and non-hydric components.

#### 100-Year Floodplain

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) No. 4803850235C and 4803850245C, the LOI is located within the Regulatory Floodplain associated with Ditch 505 and its tributaries (**Figure 6**; **Appendix A**).

#### **Conclusions:**

Potential waters of the U.S. within the Ditch 505 Flood Detention LOI appear to include Ditch 505 and Ditch 505-B. These ditches are channelized tributaries of North Fork Taylor

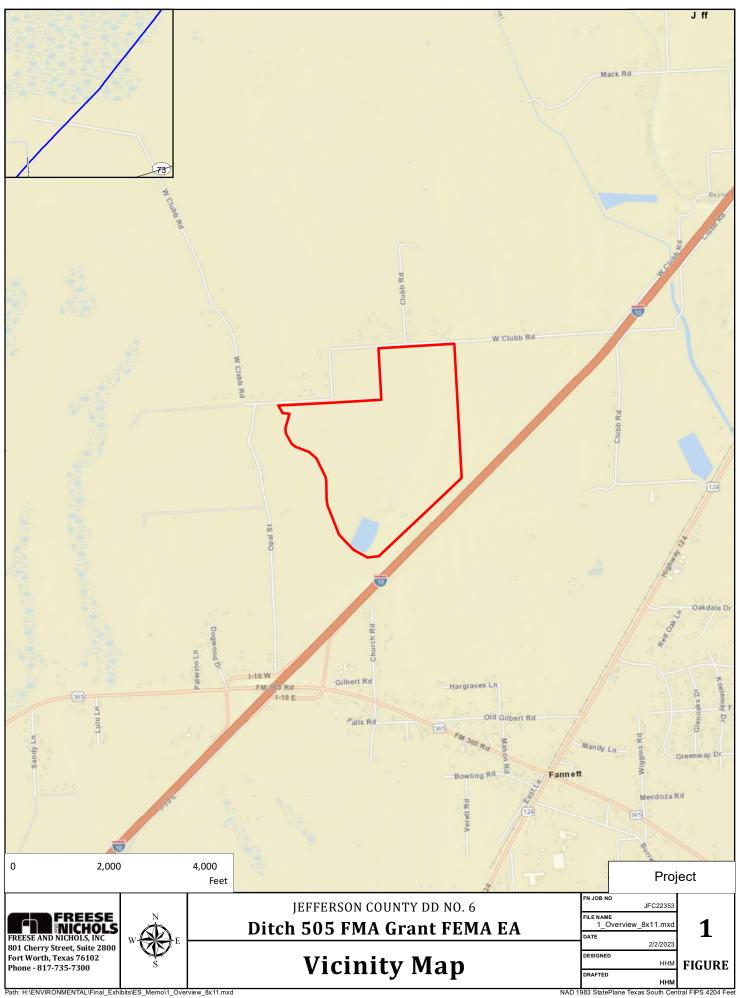
Bayou, which is perennial tributary of Sabine Lake, a confluence of the Sabine and Neches Rivers listed as a TNW. Therefore Ditches 505 and 505-B appear to be subject to USACE jurisdiction under Section 404 of the Clean Water Act. Although the LOI is located within the Regulatory Floodplain associated with Ditches 505 and 505-B, it is FNI's professional opinion that the wetlands identified within the Project LOI should not be considered WOTUS as a surface water connection to these ditches was not observed.

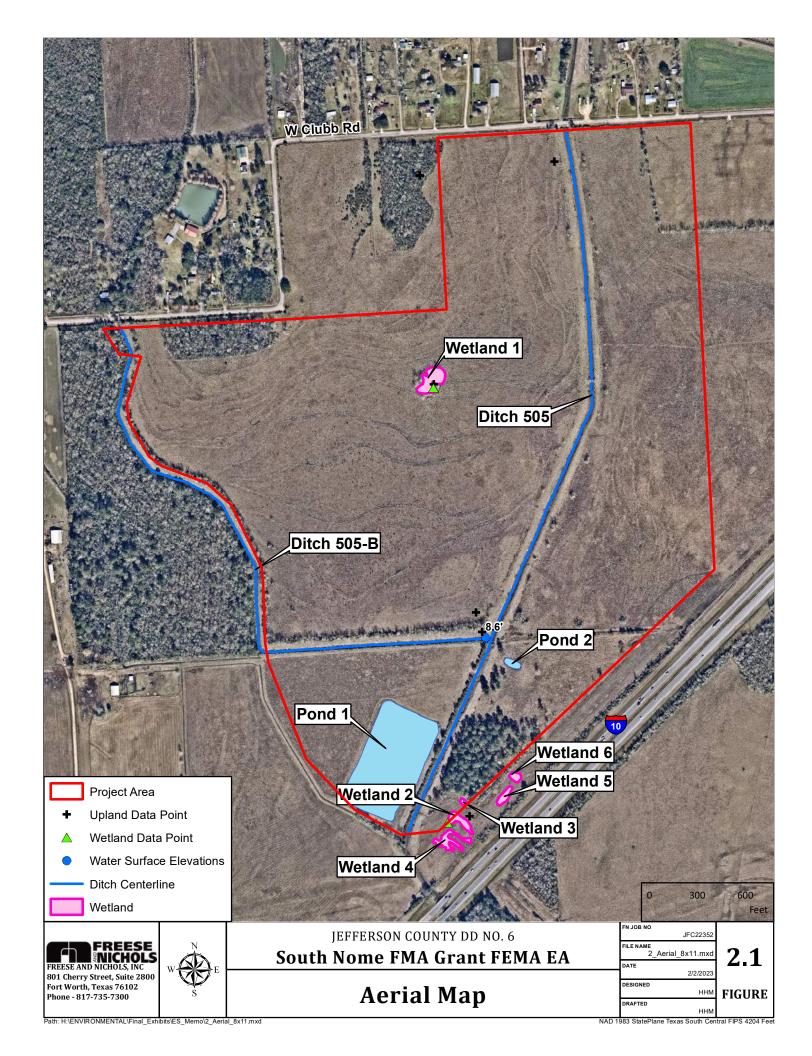
### References:

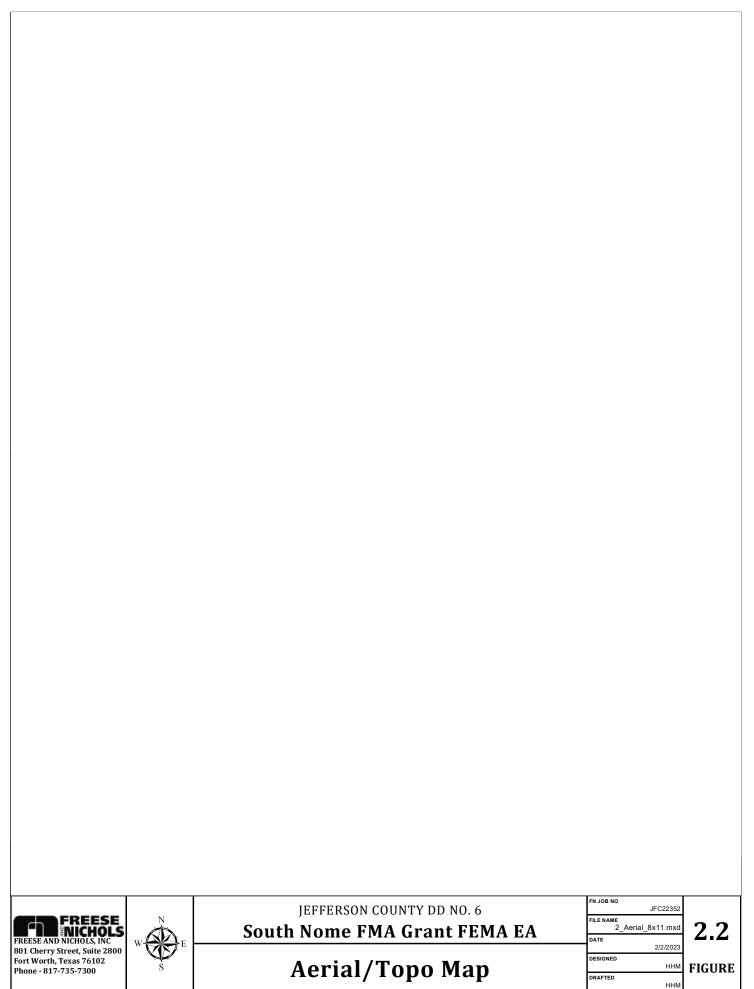
- Griffith, G.E., Bryce, S.A., Omernik, J.M., Comstock, J.A., Rogers, A.C., Harrison, B., Hatch, S.L., and Bezanson, D. 2004. Ecoregions of Texas (color poster with map, descriptive text, and photographs): Reston Virginia, U.S. Geologic Survey (mal scale 1:2,500,000).
- U.S. Department of Agriculture (USDA). 2004. Soil Survey of Trinity County, Texas.

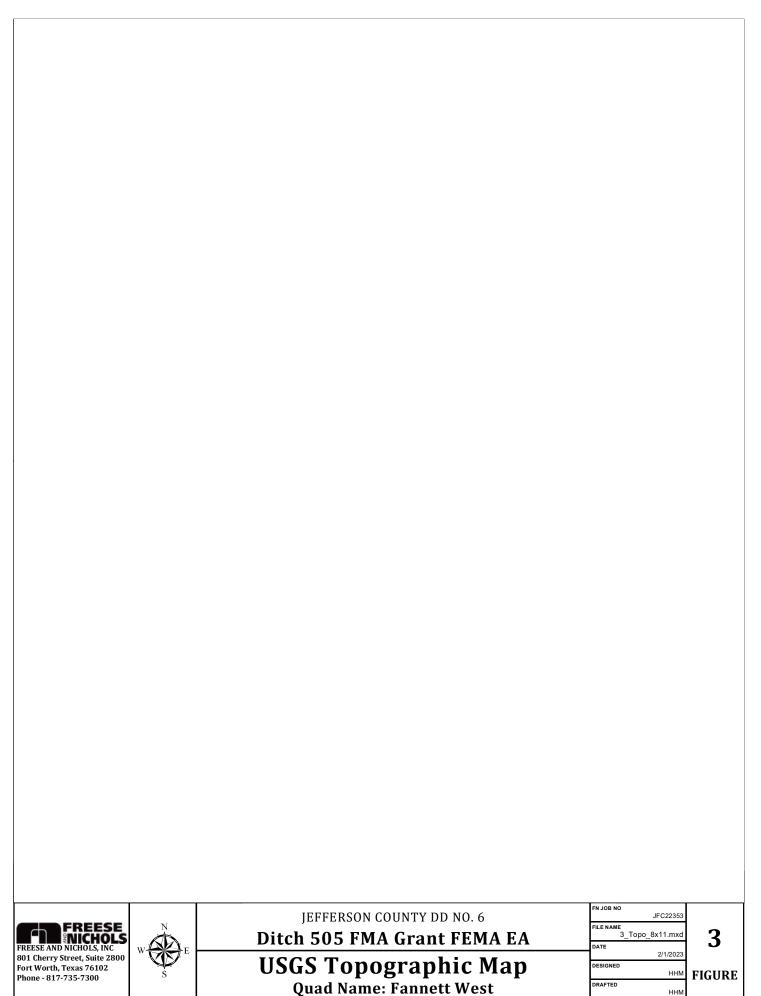
  Natural Resources Conservation Service.
- U. S. Fish and Wildlife Service (USFWS). 2016. Ecological Services. National Wetlands Inventory. https://www.fws.gov/wetlands/
- U. S. Geological Survey (USGS). 2016. Hydrography. National Hydrography Dataset. http://nhd.usgs.gov/index.html
- Natural Resources Conservation Service (NRCS). 2016. United States Department of Agriculture. Web Soil Survey. https://www.websoilsurvey.nrcs.usda.gov

Appendix A Figures





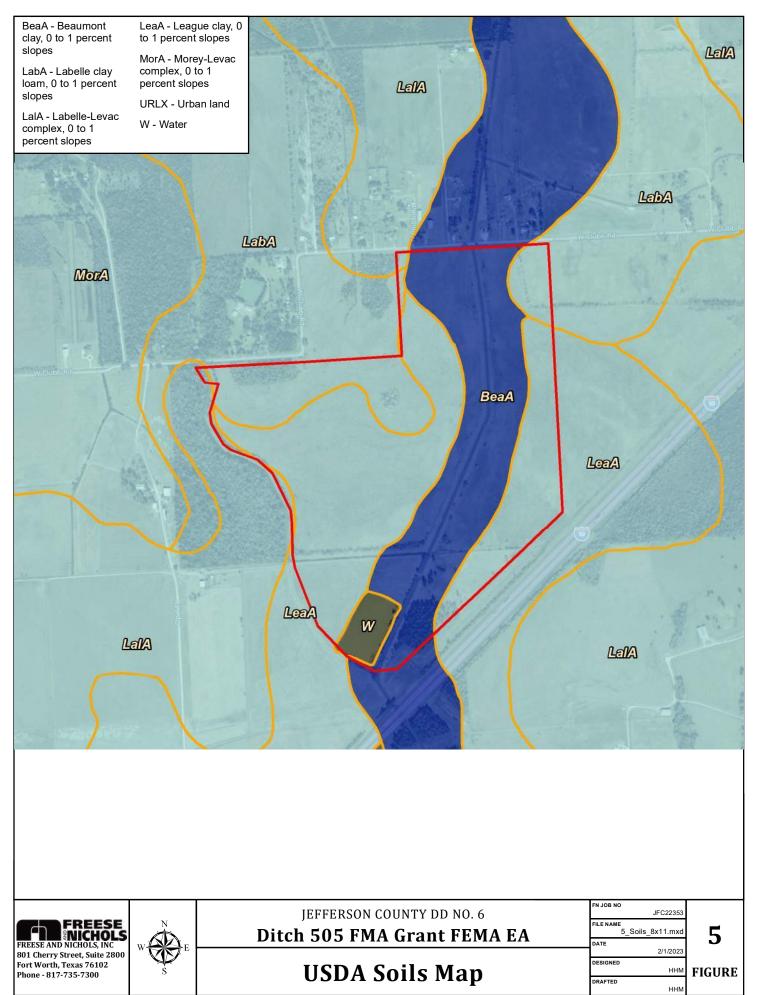


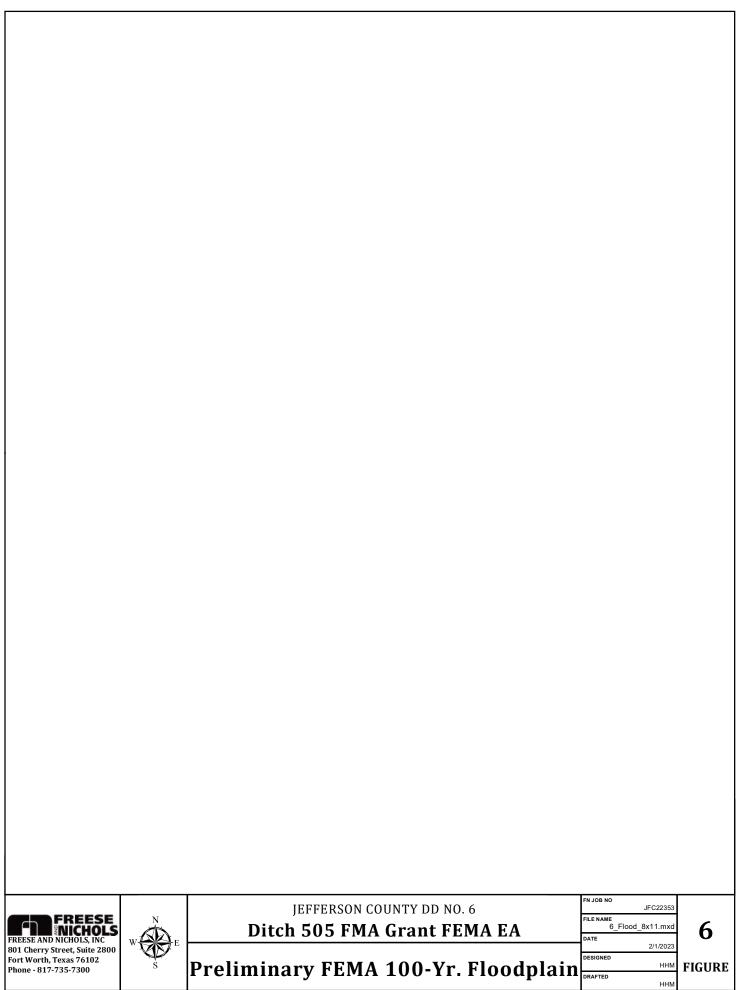


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NAD 1983 StatePlane Texas South Central FIPS 4204 Fee







Appendix B Photographs



**Photo 1.** View looking south towards Wetland 1, an isolated forested wetland within the project LOI.



Photo 2. Soil profile associated with Wetland 1 (WDP1)



 $\textbf{Photo 3.} \ \ \text{View looking south at upland area directly adjacent to Wetland 1}$ 



Photo 4. Soil profile associated with UDP1



**Photo 5.** View looking south (downstream) along Ditch 505 within the project LOI.



**Photo 6.** View looking west (upstream) along Ditch 505-B within the project LOI.



**Photo 7.** Typical view (facing north) of pasture within the project LOI.



**Photo 8.** Typical view (facing west) of upland forest within the project LOI.



**Photo 9.** View looking east towards Wetland 2, an isolated emergent wetland within the project LOI.



Photo 10. Soil profile associated with Wetland 2 (WDP2)



**Photo 11.** View looking north towards Wetland 3, an isolated emergent wetland within the project LOI.



**Photo 12.** View looking north towards Pond 2, an isolated open water within the project LOI.

# Appendix C Wetland Determination Dataforms

Project/Site:		City/C	County:	Sa	mpling Date:
Applicant/Owner:					
Investigator(s):					
Landform (hillslope, terrace, et			-		
Subregion (LRR or MLRA):					
Soil Map Unit Name:					•
Are climatic / hydrologic condit					
Are Vegetation, Soil	, or Hydrolog	y significantly distur	bed? Are "Norma	al Circumstances" pres	ent? YesNo
Are Vegetation, Soil	, or Hydrolog	y naturally problema	atic? (If needed,	explain any answers ir	n Remarks.)
SUMMARY OF FINDING	SS – Attach s	ite map showing san	npling point locati	ons, transects, in	nportant features, etc.
Hydrophytic Vegetation Prese	ont? Voc	No			
Hydric Soil Present?		No	Is the Sampled Area		
Wetland Hydrology Present?		No	within a Wetland?	Yes	No
Remarks:					
HYDROLOGY					
Wetland Hydrology Indicate	ors:			Secondary Indicators	(minimum of two required)
Primary Indicators (minimum	of one is required;	check all that apply)		Surface Soil Cra	cks (B6)
Surface Water (A1)		_ Aquatic Fauna (B13)		Sparsely Vegeta	ted Concave Surface (B8)
High Water Table (A2)		_ Marl Deposits (B15) (LRI		Drainage Patterr	
Saturation (A3)	_	_ Hydrogen Sulfide Odor (0	,	Moss Trim Lines	` '
Water Marks (B1)		_ Oxidized Rhizospheres a		Dry-Season Wat	
Sediment Deposits (B2)		_ Presence of Reduced Iro		Crayfish Burrows	` ,
Drift Deposits (B3)		_ Recent Iron Reduction in	Tilled Soils (C6)		e on Aerial Imagery (C9)
Algal Mat or Crust (B4)		_ Thin Muck Surface (C7)		Geomorphic Pos	` '
Iron Deposits (B5) Inundation Visible on Aer		_ Other (Explain in Remark	(S)	Shallow Aquitard	
Water-Stained Leaves (E	0 , ( ,			FAC-Neutral Tes Sphagnum moss	
Field Observations:	59)			Opnagnum moss	(DO) (LIKIC 1, O)
Surface Water Present?	Yes No	Depth (inches):			
Water Table Present?		Depth (inches):			
Saturation Present?		Depth (inches):		Hydrology Present?	Yes No
(includes capillary fringe)					
Describe Recorded Data (stre	eam gauge, monito	oring well, aerial photos, pre	vious inspections), if av	ailable:	
Domorko					
Remarks:					

Upland areas adjacent to Wetland 1.

	names of plant		T		i:
ee Stratum (Plot size:)		Dominant Indicator Species? Status	Dominance Test work		
, 100 0120			Number of Dominant S That Are OBL, FACW,		(A)
			That Aic Obe, I Aov,	orr Ao	(八)
			Total Number of Domin		(D)
			Species Across All Stra	ıta:	(B)
			Percent of Dominant Sp		
			That Are OBL, FACW,	or FAC:	(A/I
			Prevalence Index wor	ksheet:	
			Total % Cover of:		v bv.
			OBL species		
		Total Cover	FACW species		
50% of total cover:	20% of	total cover:			
pling/Shrub Stratum (Plot size:)			FAC species		
			FACU species		
				x 5 =	
			Column Totals:	(A)	(E
			Prevalence Index	- D/A -	
			Hydrophytic Vegetation		-4:
			1 - Rapid Test for I		ation
				4	
			3 - Prevalence		4
50% of total cover:		Total Cover	Problematic Hyd	Irophytic Vegetatio	n' (Explain)
			Definitions of Four Ve  Tree – Woody plants, e more in diameter at bre height.  Sapling/Shrub – Wood than 3 in. DBH and gree  Herb – All herbaceous of size, and woody plan  Woody vine – All wood height.	excluding vines, 3 is ast height (DBH), dy plants, excluding ater than 3.28 ft (1 (non-woody) plant its less than 3.28 ft	regardless g vines, les m) tall. s, regardles t tall.
			neight.		
-		Total Cover			
50% of total cover:					
50% of total cover:	20% 01	total cover.			
oody Vine Stratum (Plot size:)					
			Hydrophytic		
		Total Cover	Vegetation		
			Present? Ye	s No	
50% of total cover:					

Project/Site:		City/C	County:		Sampling Date:
Applicant/Owner:				State: S	Sampling Point:
					Slope (%):
			_		Datum:
					on:
Are climatic / hydrologic condit	tions on the site typ	pical for this time of year? Y	/es No	(If no, explain in Re	marks.)
Are Vegetation, Soil	, or Hydrolog	y significantly distur	rbed? Are "Norma	al Circumstances" pre	esent? YesNo
Are Vegetation, Soil	, or Hydrolog	y naturally problem	atic? (If needed,	explain any answers	s in Remarks.)
SUMMARY OF FINDING	GS – Attach s	ite map showing san	npling point locati	ons, transects,	important features, etc.
Hydrophytic Vegetation Pres	ent? Yes	No			
Hydric Soil Present?		No	Is the Sampled Area	.,	
Wetland Hydrology Present?		No	within a Wetland?	Yes	No
HYDROLOGY					
Wetland Hydrology Indicat	ors:			Secondary Indicato	ors (minimum of two required)
Primary Indicators (minimum	of one is required:	; check all that apply)		Surface Soil C	racks (B6)
Surface Water (A1)	_	_ Aquatic Fauna (B13)		Sparsely Vege	etated Concave Surface (B8)
High Water Table (A2)		_ Marl Deposits (B15) (LR		Drainage Patte	erns (B10)
Saturation (A3)		_ Hydrogen Sulfide Odor (		Moss Trim Line	es (B16)
Water Marks (B1)		_ Oxidized Rhizospheres a		Dry-Season W	/ater Table (C2)
Sediment Deposits (B2)		_ Presence of Reduced Iro		Crayfish Burro	` '
Drift Deposits (B3)		Recent Iron Reduction in	Tilled Soils (C6)		ible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		_ Thin Muck Surface (C7)		Geomorphic P	
Iron Deposits (B5)		_ Other (Explain in Remarl	ks)	Shallow Aquita	
Inundation Visible on Ae				FAC-Neutral T	` ,
Water-Stained Leaves (I	39)			Spriagrium mo	oss (D8) (LRR T, U)
Surface Water Present?	Ves No	Depth (inches):			
Water Table Present?		Depth (inches):			
Saturation Present?		Depth (inches):		Hydrology Present	? Yes No
(includes capillary fringe)					: 165 NO
Describe Recorded Data (str	eam gauge, monito	oring well, aerial photos, pre	evious inspections), if av	ailable:	
Remarks:					
1					

Upland area on levee adjacent to the confluence of Ditch 505 and Ditch 505b.

		Б	Ta . =		:
ree Stratum (Plot size:)		Dominant Indicator Species? Status			
·			<ul> <li>Number of Dominant Sp</li> <li>That Are OBL, FACW, or</li> </ul>		(A)
					(A)
					(D)
			Species Across All Strat	ia:	(B)
			Percent of Dominant Sp	ecies	
			- That Are OBL, FACW, o	or FAC:	(A/I
			Prevalence Index work	sheet	
			Total % Cover of:		, by:
			OBL species		
		Total Cover			
50% of total cover:	20% of	total cover:	FACW species		
pling/Shrub Stratum (Plot size:)			FAC species		
			FACU species		
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			. Totalones mask		
					ation
			2 - Dominance	Test is >50%	
			- 3 - Prevalence I	ndex 3.0 <sup>1</sup>	
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50% of total cover:	20% of	total cover:	=		
erb Stratum (Plot size: )			<sup>1</sup> Indicators of hydric soil be present, unless distu	and wetland hydr	ology must
			Definitions of Four Ve		
				gotation otrata.	
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			more in diameter at brea height.	ast neight (DBH),	regardiess
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			than 3 in. DBH and grea	iter than 3.28 ft (1	m) tall.
			- Herb - All herbaceous (	non-woody) plant	s, regardles
			of size, and woody plan	ts less than 3.28 f	t tall.
)			- Woody vine – All wood	v vines greater tha	an 3 28 ft in
1			height.	y viiloo gi oatoi tiit	an 0.20 m
). 			_		
		Total Cover			
50% of total cover:		total cover:			
oody Vine Stratum (Plot size:)			-		
			-		
			-		
			-		
			-		
			- Hydrophytic		
		Total Cover	Vegetation	No.	
50% of total cover:	20% of	total cover:	Present? Yes	No	
			i e		

Applicant/Owner:	Project/Site:			City/	County:			Sampling Date:	
Landform (hillslope, terrace, etc.):	Applicant/Owner:					;	State:	Sampling Point: _	
Landform (hillslope, terrace, etc.): Local relief (concave, convex, none): Slope (%): Subregion (LRR or MLRA): Lat: Long: Datum: Datum: Soil Map Unit Name: NWI classification: Are climate / hydrologic conditions on the site hybical for this time of year? Yes No (if no, explain in Remarks.)  Are Vegetation Soil or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No are Vegetation Soil or Hydrology naturally problematic? (if needed, explain any answers in Remarks.)  SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features  Hydrophytic Vegetation Present?	Investigator(s):			Sec	ion, Township	o, Range:			
Subregion (LRR or MLRA):									
Soil Map Unit Name:									
Are climatic / hydrologic conditions on the site typical for this time of year? Yes	• ,								
Are Vegetation, Soil, or Hydrology									
Are Vegetation, Soil, or Hydrologynaturally problematic? (If needed, explain any answers in Remarks.)  SUMMARY OF FINDINGS - Attach site map showing sampling point locations, transects, important features.  Hydrophytic Vegetation Present?				-					No
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features    Hydrophytic Vegetation Present?									
Hydrophylic Vegetation Present? Yes No Wetland Hydrology Indicators:    Primary Indicators (minimum of one is required; check all that apply) Surface Water (A1) Aquatic Fauna (B13) Surface Water (A1) Aquatic Fauna (B13) Saturation (A3) Hydrogen Sulfide Odor (C1) Drainage Patterns (B10) Moss Trim Lines (B16) Moss Moss Moss Moss Moss Moss Moss Mos									
Hydric Soil Present? Yes No Within a Wetland? Yes No No Within a Wetland? Yes No	SUMMARY OF FINDING	3S – Atta	ach site	e map showing sa	mpling poi	nt locatio	ns, transec	ts, important fea	ature
Hydric Soil Present? Yes No Within a Wetland? Yes No No Within a Wetland? Yes No	Hydrophytic Vegetation Preso	ent?	Yes	No	l				
Wetland Hydrology Present?   Yes   No     Wetland Hydrology Indicators:   Secondary Indicators (minimum of two req Primary Indicators (minimum of one is required; check all that apply)   Surface Soil Cracks (B6)   Surface Water (A1)   Aquatic Fauna (B13)   Sparsely Vegetated Concave Surface High Water Table (A2)   Marl Deposits (B15) (LRR U)   Drainage Patterns (B10)   Moss Trim Lines (B16)   Moss Trim Lines	, , ,						Vaa	Na	
HYDROLOGY   Wetland Hydrology Indicators:   Secondary Indicators (minimum of two req   Primary Indicators (minimum of one is required; check all that apply)   Surface Soil Cracks (B6)   Surface Water (A1)   Aquatic Fauna (B13)   Sparsely Vegetated Concave Surface   High Water Table (A2)   Mari Deposits (B15) (LRR U)   Drainage Patterns (B10)   Drainage Patterns (B10)   Moss Trim Lines (B16)   Water Marks (B1)   Oxidized Rhizospheres along Living Roots (C3)   Dry-Season Water Table (C2)   Sediment Deposits (B2)   Presence of Reduced Iron (C4)   Crayfish Burrows (C8)   Saturation Visible on Aerial Imagery (C7)   Geomorphic Position (D2)   Iron Deposits (B3)   Recent Iron Reduction in Tilled Soils (C6)   Saturation Visible on Aerial Imagery (B7)   Water-Stained Leaves (B9)   FAC-Neutral Test (D5)   Sphagnum moss (D8) (LRR T, U)	Wetland Hydrology Present?				within a w	etiana?	res	NO	
Wetland Hydrology Indicators:         Secondary Indicators (minimum of two required)           Primary Indicators (minimum of one is required; check all that apply)         Surface Soil Cracks (B6)           Surface Water (A1)         Aquatic Fauna (B13)         Sparsely Vegetated Concave Surface           High Water Table (A2)         Marl Deposits (B15) (LRR U)         Drainage Patterns (B10)           Saturation (A3)         Hydrogen Sulfide Odor (C1)         Moss Trim Lines (B16)           Water Marks (B1)         Oxidized Rhizospheres along Living Roots (C3)         Dry-Season Water Table (C2)           Sediment Deposits (B2)         Presence of Reduced Iron (C4)         Crayfish Burrows (C8)           Drift Deposits (B3)         Recent Iron Reduction in Tilled Soils (C6)         Saturation Visible on Aerial Imagery (C           Algal Mat or Crust (B4)         Thin Muck Surface (C7)         Geomorphic Position (D2)           Inundation Visible on Aerial Imagery (B7)         Shallow Aquitard (D3)           Inundation Visible on Aerial Imagery (B7)         Sphagnum moss (D8) (LRR T, U)           Field Observations:         Surface Water Present?         Yes         No         Depth (inches):         Wetland Hydrology Present? Yes         No           Saturation Present?         Yes         No         Depth (inches):         Wetland Hydrology Present? Yes         No <td< th=""><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></td<>									
Wetland Hydrology Indicators:         Secondary Indicators (minimum of two required)           Primary Indicators (minimum of one is required; check all that apply)         Surface Soil Cracks (B6)           Surface Water (A1)         Aquatic Fauna (B13)         Sparsely Vegetated Concave Surface           High Water Table (A2)         Marl Deposits (B15) (LRR U)         Drainage Patterns (B10)           Saturation (A3)         Hydrogen Sulfide Odor (C1)         Moss Trim Lines (B16)           Water Marks (B1)         Oxidized Rhizospheres along Living Roots (C3)         Dry-Season Water Table (C2)           Sediment Deposits (B2)         Presence of Reduced Iron (C4)         Crayfish Burrows (C8)           Drift Deposits (B3)         Recent Iron Reduction in Tilled Soils (C6)         Saturation Visible on Aerial Imagery (C           Algal Mat or Crust (B4)         Thin Muck Surface (C7)         Geomorphic Position (D2)           Inundation Visible on Aerial Imagery (B7)         Shallow Aquitard (D3)           Inundation Visible on Aerial Imagery (B7)         Sphagnum moss (D8) (LRR T, U)           Field Observations:         Surface Water Present?         Yes         No         Depth (inches):         Wetland Hydrology Present? Yes         No           Saturation Present?         Yes         No         Depth (inches):         Wetland Hydrology Present? Yes         No <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>									
Primary Indicators (minimum of one is required; check all that apply)  Surface Water (A1)  Aquatic Fauna (B13)  Byarsely Vegetated Concave Surface  High Water Table (A2)  Marl Deposits (B15) (LRR U)  Saturation (A3)  Hydrogen Sulfide Odor (C1)  Water Marks (B1)  Sediment Deposits (B2)  Presence of Reduced Iron (C4)  Trift Deposits (B3)  Algal Mat or Crust (B4)  Inundation Visible on Aerial Imagery (B7)  Water-Stained Leaves (B9)  Field Observations:  Surface Water Present?  Yes  No  Depth (inches):  Water Table Present?  Yes  No  Depth (inches):  Surface Water (A1)  Aquatic Fauna (B13)  Sparsely Vegetated Concave Surface  Drainage Patterns (B10)  Moss Trim Lines (B16)  Moss Tim Lines (B16)  Moss Tim Lines (B16)  Moss Tim Lines (B16)  Moss Tim Lines	HYDROLOGY								
Surface Water (A1) Aquatic Fauna (B13) Sparsely Vegetated Concave Surface	Wetland Hydrology Indicate	ors:					-		wo req
High Water Table (A2)	Primary Indicators (minimum	of one is re-	quired; c	heck all that apply)					
Saturation (A3)Hydrogen Sulfide Odor (C1)									urface
Water Marks (B1) Oxidized Rhizospheres along Living Roots (C3) Dry-Season Water Table (C2) Sediment Deposits (B2) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (Call Land Land Land Land Land Land Land Land									
Sediment Deposits (B2) Presence of Reduced Iron (C4) Crayfish Burrows (C8) Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (Caption Deposits (B4) Thin Muck Surface (C7) Geomorphic Position (D2) Iron Deposits (B5) Other (Explain in Remarks) Shallow Aquitard (D3) Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9) Sphagnum moss (D8) (LRR T, U) Sphagnum moss (D8) (LRR T, U) Water Table Present?						Dooto (C2)			
Drift Deposits (B3) Recent Iron Reduction in Tilled Soils (C6) Saturation Visible on Aerial Imagery (Capture (C7) Geomorphic Position (D2) Iron Deposits (B5) Other (Explain in Remarks) Shallow Aquitard (D3) FAC-Neutral Test (D5) Water-Stained Leaves (B9) Sphagnum moss (D8) (LRR T, U) Field Observations:  Surface Water Present? Yes No Depth (inches): Water Table Present? Yes No Depth (inches): Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No (includes capillary fringe) Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:						(U3)			
Algal Mat or Crust (B4) Thin Muck Surface (C7) Geomorphic Position (D2) Iron Deposits (B5) Other (Explain in Remarks) Shallow Aquitard (D3) FAC-Neutral Test (D5) Water-Stained Leaves (B9) Sphagnum moss (D8) (LRR T, U) Field Observations:						(C6)	-		aerv (C
Iron Deposits (B5) Other (Explain in Remarks) Shallow Aquitard (D3) FAC-Neutral Test (D5) Water-Stained Leaves (B9) Sphagnum moss (D8) (LRR T, U)						()			3-1) (1
Water-Stained Leaves (B9) Sphagnum moss (D8) (LRR T, U)  Field Observations:  Surface Water Present? Yes No Depth (inches):  Water Table Present? Yes No Depth (inches):  Saturation Present? Yes No Depth (inches):  (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:									
Field Observations:  Surface Water Present? Yes No Depth (inches):  Water Table Present? Yes No Depth (inches):  Saturation Present? Yes No Depth (inches):  (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:	Inundation Visible on Aer	rial Imagery	(B7)						
Surface Water Present? Yes No Depth (inches):  Water Table Present? Yes No Depth (inches):  Saturation Present? Yes No Depth (inches):  (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:		39)					Sphagnun	n moss (D8) (LRR T,	U)
Water Table Present? Yes No Depth (inches):    Saturation Present? Yes No Depth (inches):    (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:									
Saturation Present? Yes No Depth (inches): Wetland Hydrology Present? Yes No (includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:									
(includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:									
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:  Remarks:		Yes	_ No _	Depth (inches):		Wetland H	lydrology Pres	sent? Yes	No _
		eam gauge,	monitori	ng well, aerial photos, pr	evious inspec	tions), if ava	ilable:		
diately following rain event, in a large depression designed to contain water	Remarks:								
diately following rain event, in a large depression designed to contain water	Remarks:								
diately following rain event, in a large depression designed to contain water									
diately following rain event, in a large depression designed to contain water	I								
							ontain w	ator	
	liately following rai	n even	t, in a	large depression	on aesiqi	nea to c	Olitalli wa	3101	
	diately following rai	in even	t, in a	large depression	on desigi	nea to c	Olitalii wa	atei	
	diately following rai	in even	t, in a	large depressi	on desigi	nea to c	Ontain wa	atei	
	diately following rai	in event	t, in a	large depression	on desigi	nea to c	ontain we	atei	
	diately following rai	in even	t, in a	large depression	on desigi	nea to c	ontani wa	atei	

Upland area north of Ditch 505b levee; Immediately after rain event in a large depression

Absolute   Cover   Species?	cator Dominance Test worksheet:
= Total Co 50% of total cover: = Total Co sapling/Shrub Stratum (Plot size: )  = Total Co 50% of total cover: = Total Co 50% of total cover: 20% of total cover lerb Stratum (Plot size: )  = Total Co 50% of total cover: 20% of total cover = Total Co 50% of total cover: 20% of total cover = Total Co 50% of total cover: 20% of total cover	US L
= Total Co 50% of total cover: 20% of total cover apling/Shrub Stratum (Plot size: )  = Total Co 50% of total cover: 20% of total cover erb Stratum (Plot size: )  = Total Co 20% of total cover	Number of Dominant Species
= Total Co 50% of total cover: = Total Co apling/Shrub Stratum (Plot size: )  = Total Co 50% of total cover: = 20% of total cover erb Stratum (Plot size: )  = Total Co 20% of total cover	
= Total Co 50% of total cover: = Total Co apling/Shrub Stratum (Plot size: )  = Total Co 50% of total cover: = Total Co 20% of total cover	
= Total Co 50% of total cover: 20% of total cover apling/Shrub Stratum (Plot size: )  = Total Co 50% of total cover: 20% of total cover arb Stratum (Plot size: )  = Total Co 20% of total cover: 20% of total cover arb Stratum (Plot size: )  = Total Co 50% of total cover: = Total Co 50% of total cover: 20% of total cover	
= Total Co 50% of total cover: 20% of total cover apling/Shrub Stratum (Plot size: )  = Total Co 50% of total cover: 20% of total cover april Stratum (Plot size: )  = Total Co 50% of total cover: 20% of total cover = Total Co 50% of total cover: 20% of total cover = Total Co 50% of total cover: 20% of total cover	Percent of Dominant Species
= Total Co	That Are OBL, FACW, or FAC: (A
= Total Co 50% of total cover: 20% of total cover apling/Shrub Stratum (Plot size: )  = Total Co 50% of total cover: 20% of total cover arb Stratum (Plot size: )  = Total Co 50% of total cover: 20% of total cover = Total Co 50% of total cover: 20% of total cover = Total Co 50% of total cover: 20% of total cover	Prevalence Index worksheet:
= Total Co	Total % Cover of: Multiply by:
50% of total cover: 20% of total cover apling/Shrub Stratum (Plot size: ) = Total Cover	OBL species x 1 =
= Total Corest	
= Total Cor	FACW species x 2 =
= Total Co	FAC species x 3 =
= Total Co 50% of total cover: 20% of total cover = Total Co 50% of total cover: = Total Co	FACU species x 4 =
= Total Covererb Stratum (Plot size: )	UPL species x 5 =
= Total Co 50% of total cover: 20% of total cover erb Stratum (Plot size: ) = Total Co = Total Cover: 20% of total cover: 20% of total cover	Column Totals: (A) (
= Total Covers 20% of total covers 20% of total covers 1	
= Total Cor 20% of total cover: 20% of total cover erb Stratum (Plot size: ) = Total Cor 20% of total cover: = Total Cor 20% of total cover:	
= Total Cor 20% of total cover: 20% of total cover ) = Total Cor 20% of total cover	
= Total Cor 20% of total cover: 20% of total cover erb Stratum (Plot size: )	
= Total Covers 20% of total covers	<del></del>
50% of total cover: 20% of total cover	3 - Prevalence Index is 3.0 <sup>1</sup>
Plot size:	ydrophytic Vegetation¹ (Explain
	Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm)
= Total Cor 20% of total cover: 20% of total cover	la a facilità
1 = Total Corest	than 3 in. DBH and greater than 3.28 ft (1 m) tall.
1 = Total Co   = Total Co   50% of total cover: 20% of total cover   dody Vine Stratum (Plot size: )	Herb – All herbaceous (non-woody) plants, regardle
1	of size, and woody plants loss than 2.29 ft tall
1	Woody vine – All woody vines greater than 3.28 ft in
2 = Total Co 50% of total cover: 20% of total cover /oody Vine Stratum (Plot size: )	
= Total Co 50% of total cover: 20% of total cover /oody Vine Stratum (Plot size: )	
50% of total cover: 20% of total cover 20% of total cover joint	
/oody Vine Stratum (Plot size:)	
	<del></del>
	—— Hydrophytic
= Total Co	Vegetation
50% of total cover: 20% of total cover	Present? Yes No
emarks: (If observed, list morphological adaptations below).	

Project/Site:		City/C	County:		Sampling Date:
Applicant/Owner:				_ State:	Sampling Point:
					Slope (%):
			_		
					ition:
Are climatic / hydrologic condit	ions on the site typ	pical for this time of year? Y	'es No	_ (If no, explain in R	emarks.)
Are Vegetation, Soil	, or Hydrolog	y significantly distur	bed? Are "Norm	nal Circumstances" p	present? YesNo
Are Vegetation, Soil	, or Hydrolog	y naturally problemate	atic? (If needed	, explain any answe	rs in Remarks.)
SUMMARY OF FINDING	SS – Attach s	ite map showing san	npling point locat	ions, transects	, important features, etc.
Hydrophytic Vegetation Prese	ent? Yes	No			
Hydric Soil Present?		No	Is the Sampled Area		
Wetland Hydrology Present?		No	within a Wetland?	Yes	No
Remarks:					
HYDROLOGY					
Wetland Hydrology Indicate	ors:			Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum	of one is required;	; check all that apply)		Surface Soil	Cracks (B6)
Surface Water (A1)	_	_ Aquatic Fauna (B13)		Sparsely Ve	getated Concave Surface (B8)
High Water Table (A2)	_	_ Marl Deposits (B15) (LR	R U)	Drainage Pa	
Saturation (A3)	_	_ Hydrogen Sulfide Odor (	C1)	Moss Trim Li	ines (B16)
Water Marks (B1)	_	_ Oxidized Rhizospheres a	long Living Roots (C3)	Dry-Season	Water Table (C2)
Sediment Deposits (B2)		_ Presence of Reduced Iro		Crayfish Bur	rows (C8)
Drift Deposits (B3)	_	Recent Iron Reduction in	Tilled Soils (C6)	Saturation Vi	sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	_	_ Thin Muck Surface (C7)		Geomorphic	Position (D2)
Iron Deposits (B5)		Other (Explain in Remark	(s)	Shallow Aqu	
Inundation Visible on Ae				FAC-Neutral	` '
Water-Stained Leaves (E	39)			Sphagnum n	noss (D8) (LRR T, U)
Field Observations:					
Surface Water Present?		Depth (inches):			
Water Table Present?		Depth (inches):			
Saturation Present? (includes capillary fringe)	Yes No	Depth (inches):	Wetland	l Hydrology Preser	it? Yes No
Describe Recorded Data (stre	eam gauge, monito	oring well, aerial photos, pre	vious inspections), if a	vailable:	
Remarks:					

Upland area west of Ditch 505 just south of Clubb Rd

EGETATION (Four Strata) – Use scientific n			T		:
ree Stratum (Plot size:)		Dominant Indicator Species? Status	Dominance Test works		
			Number of Dominant Sp That Are OBL, FACW, o		(A)
					(八)
					(D)
			Species Across All Strat	a:	(B)
			Percent of Dominant Sp		
			That Are OBL, FACW, o	r FAC:	(A/I
			Prevalence Index work	sheet.	
			Total % Cover of:		, hv.
			OBL species		
		Total Cover			
50% of total cover:	20% of	total cover:	FACW species		
pling/Shrub Stratum (Plot size:)			FAC species		
			FACU species		
				x 5 =	
			Column Totals:	(A)	(E
			·	5.4	
				ydrophytic Vegeta	ation
			2 - Dominance	est is >50%	
			3 - Prevalence I	ndex 3.0 <sup>1</sup>	
		Total Cover	Problematic Hydr	ophytic Vegetatio	n¹ (Explain
50% of total cover:	20% of	total cover:			
			¹Indicators of hydric soil be present, unless distu Definitions of Four Veg	rbed or problemat getation Strata:	tic.
			Tree – Woody plants, ex more in diameter at brea height.		
			than 3 in. DBH and grea	ter than 3.28 ft (1	m) tall.
			Herb - All herbaceous (	non-woody) plants	s, regardles
			of size, and woody plant	s less than 3.28 ft	t tall.
)			Woody vine – All woody	vines areater th:	an 3 28 ft in
1			height.	, viries greater trie	an 5.20 it in
l					
		Total Cover			
50% of total cover:					
oody Vine Stratum (Plot size:)	20 /0 01	total 66Ve1.	-		
· · · · · · · · · · · · · · · · · · ·					
			-		
			-		
			-		
			Hydrophytic		
	=	Total Cover	Vegetation		
50% of total cover:	20% of	total cover:	Present? Yes	No	
			•		

Project/Site:		City/C	County:	Sa	ampling Date:
					ampling Point:
Investigator(s):					
					Slope (%):
					Datum:
					n:
Are climatic / hydrologic condi	ions on the site typ	pical for this time of year? Y	'es No	(If no, explain in Rem	narks.)
Are Vegetation, Soil	, or Hydrolog	y significantly distur	bed? Are "Norma	al Circumstances" pres	sent? YesNo
Are Vegetation, Soil	, or Hydrolog	y naturally problem	atic? (If needed,	explain any answers i	n Remarks.)
SUMMARY OF FINDING	GS – Attach s	ite map showing san	npling point locati	ons, transects, i	mportant features, etc.
Hydrophytic Vegetation Pres	ent? Yes	No	le the Complet Avec		
Hydric Soil Present?		No	Is the Sampled Area within a Wetland?	Voo	No
Wetland Hydrology Present?		No	within a welland?	res	
HYDROLOGY					
				Cocondani Indicator	o (minimum of two required)
Wetland Hydrology Indicat		shock all that apply)		-	s (minimum of two required)
Primary Indicators (minimum	-			Surface Soil Cra	
<ul><li>Surface Water (A1)</li><li>High Water Table (A2)</li></ul>		Aquatic Fauna (B13) Marl Deposits (B15) <b>(LR</b>	D III\	Sparsely vegeta	ated Concave Surface (B8)
Saturation (A3)		_ Hydrogen Sulfide Odor (		Moss Trim Line	
Water Marks (B1)		<ul><li>Oxidized Rhizospheres a</li></ul>		Dry-Season Wa	` '
Sediment Deposits (B2)		Presence of Reduced Iro		Crayfish Burrow	
Drift Deposits (B3)		Recent Iron Reduction in		Saturation Visib	le on Aerial Imagery (C9)
Algal Mat or Crust (B4)	_	_ Thin Muck Surface (C7)		Geomorphic Po	sition (D2)
Iron Deposits (B5)	_	_ Other (Explain in Remark	(S)	Shallow Aquitar	
Inundation Visible on Ae				FAC-Neutral Te	
Water-Stained Leaves (I	39)			Sphagnum mos	s (D8) <b>(LRR T, U)</b>
Field Observations:		5 " " ' ' ' '			
Surface Water Present?		Depth (inches):			
Water Table Present?		Depth (inches):		Huduala Dua a auto	Vaa Na
Saturation Present? (includes capillary fringe)	Yes No	Depth (inches):	wetland	Hydrology Present?	Yes No
Describe Recorded Data (str	eam gauge, monito	oring well, aerial photos, pre	evious inspections), if av	ailable:	
Remarks:					

Upland forest area south of Clubb Rd

Total Number of Dominant Species Across All Strata:  Percent of Dominant Species	% Cover	Species? Status  Total Cover total cover:  Total Cover	Number of Dominant Species That Are OBL, FACW, or FAC:  Total Number of Dominant Species Across All Strata:  Percent of Dominant Species That Are OBL, FACW, or FAC:  Prevalence Index worksheet:  Total % Cover of:  OBL species	Multiply by:  1 = 2 = 3 = 4 = 5 = \(\text{A}\) (  ators: tic Vegetation 50% 3.01
That Arr OBL, FACW, or FAC: (	= 20% of	Total Cover  total cover:  Total Cover	That Are OBL, FACW, or FAC:  Total Number of Dominant Species Across All Strata:  Percent of Dominant Species That Are OBL, FACW, or FAC:  Prevalence Index worksheet:  Total % Cover of:  OBL species x  FACW species x  FACU species x  FACU species x  Column Totals: (A	Multiply by:  1 = 2 = 3 = 4 = 5 = \(\text{A}\) (  ators: tic Vegetation 50% 3.01
Total Number of Dominant Species Across All Strate: (I)  Percent of Dominant Species That Are OBL, FACW, or FAC: (I)  Prevalence Index worksheet: Total % Cover of. Multiply by: OBL species x 1 = FACW Species x 2 = FACW Species x 3 = FACW Species x 4 = I FACW Species x 4 = I FACW Species x 5 = I FACW Sp	= 20% of	Total Cover total cover:  Total Cover	Total Number of Dominant Species Across All Strata:  Percent of Dominant Species That Are OBL, FACW, or FAC:  Prevalence Index worksheet:  Total % Cover of:  OBL species x FACW species x FACU species x FACU species x Column Totals: (A	Multiply by:  1 = 2 = 3 = 4 = 5 = \(\text{A}\) (  ators: tic Vegetation 50% 3.01
Species Across All Strata: (1)	= 20% of	Total Cover total cover:	Species Across All Strata:  Percent of Dominant Species That Are OBL, FACW, or FAC:  Prevalence Index worksheet:  Total % Cover of:  OBL species	Multiply by:  1 = 2 = 3 = 4 = 5 = A) (  ators: rtic Vegetation 50% 3.01
Percent of Dominant Species   That Are OBL, FACW. or FAC: () ()	= 20% of	Total Cover total cover:	Percent of Dominant Species That Are OBL, FACW, or FAC:  Prevalence Index worksheet:  Total % Cover of:  OBL species x  FACW species x  FAC species x  FACU species x  Column Totals: (A  Prevalence Index = B/A =  Hydrophytic Vegetation Indication	Multiply by:  1 = 2 = 3 = 4 = 5 = A) (  ators: rtic Vegetation 50% 3.01
Percent of Soll, FACW, of FAC;	=_ 20% of	Total Cover total cover:	That Are OBL, FACW, or FAC:  Prevalence Index worksheet:  Total % Cover of:  OBL species x  FACW species x  FACU species x  UPL species x  Column Totals: (A  Prevalence Index = B/A =  Hydrophytic Vegetation Indication	Multiply by:  1 = 2 = 3 = 4 = 5 = A)(  ators: tic Vegetation 50% 3.01
Prevalence Index worksheet:  Total % Cover of. Multiply by:  OBL species x1 = FACV species x3 = FACV species x3 = FACV species x4 = UPL specie	= 20% of	Total Cover  total cover:  Total Cover:	Prevalence Index worksheet:  Total % Cover of:  OBL species	Multiply by:  1 = 2 = 3 = 4 = 5 = A)(  ators: tic Vegetation 50% 3.01
Total % Cover of   Multiply by:	= 20% of	Total Cover total cover:	Total % Cover of:  OBL species	1 =
Total % Cover of:	= _ 20% of	Total Cover total cover:	Total % Cover of:  OBL species	1 =
= Total Cover 50% of total cover: 20% of total cover: 4A = UPL species	= _ 20% of	Total Cover	OBL species x  FACW species x  FAC species x  FACU species x  UPL species x  Column Totals: (A  Prevalence Index = B/A =  Hydrophytic Vegetation Indicated to the species of the species o	1 =
FACW species   X 2 =   FACW species   X 3 =   FACU species   X 3 =   FACU species   X 4 =   UPL species   X 4 =   UPL species   X 5 =   Column Totals:   (A)   Prevalence Index   = B/A =   Hydrophytic Vegetation Indicators:   1 - Rapid Test for Hydrophytic Vegetation   2 - Dominance Test is -50%   3 - Prevalence Index is 3.0   Problematic Hydrophytic Vegetation   2 - Dominance Test is -50%   3 - Prevalence Index is 3.0   Problematic Hydrophytic Vegetation   (Explain)   Indicators of hydric soil and wetland hydrology mu be present   Definitions of Four Vegetation Strata:   Tree - Woody plants, excluding vines, is than 3 in. DBH and greater than 3.28 ft (1 m) tall.   Hydrophytic Vegetation   Hydrophytic Vegetation   Hydrophytic Vegetation   Sapling/Shrub - Woody plants, excluding vines, is than 3 in. DBH and greater than 3.28 ft (1 m) tall.   Woody vine - All weody vines greater than 3.28 ft tall   Woody vine - All weody vines greater than 3.28 ft tall   Woody vine - All weody vines greater than 3.28 ft tall   Woody vine - All weody vine   Hydrophytic Vegetation   Hydrophytic Vegetation   Prevent?   Vegetation   Vegetat	_ 20% of	total cover:	FACW species x FAC species x FACU species x UPL species x Column Totals: (A Prevalence Index = B/A = Hydrophytic Vegetation Indica 1 - Rapid Test for Hydrophyt 2 - Dominance Test is > 3 - Prevalence Index is 3 Problematic Hydrophytic	2 =
### Stratum (Plot size:		- Total Cover	FAC species x FACU species x UPL species x Column Totals: (A Prevalence Index = B/A = Hydrophytic Vegetation Indica 1 - Rapid Test for Hydrophy 2 - Dominance Test is > 3 - Prevalence Index is 3 Problematic Hydrophytic	3 =
FACU species		- Total Cover	FACU species x UPL species x Column Totals: (A  Prevalence Index = B/A =  Hydrophytic Vegetation Indica 1 - Rapid Test for Hydrophy 2 - Dominance Test is > 3 - Prevalence Index is 3 Problematic Hydrophytic	4 =
UPL species		- Total Cover	UPL species x Column Totals: (A Prevalence Index = B/A =  Hydrophytic Vegetation Indica 1 - Rapid Test for Hydrophy 2 - Dominance Test is > 3 - Prevalence Index is 3 Problematic Hydrophytic	5 = (  ators: rtic Vegetation 50% 3.01
Column Totals:		- Total Cover	Column Totals: (A  Prevalence Index = B/A =  Hydrophytic Vegetation Indica 1 - Rapid Test for Hydrophyt 2 - Dominance Test is > 3 - Prevalence Index is 3 Problematic Hydrophytic	ators: tic Vegetation 50%
Prevalence Index = B/A =   Prevalence Index		- Total Cover	Prevalence Index = B/A =  Hydrophytic Vegetation Indica  1 - Rapid Test for Hydrophy  2 - Dominance Test is >  3 - Prevalence Index is 3  Problematic Hydrophytic	ators: tic Vegetation 50% 3.01
Prevalence Index = B/A =		- Total Cover	Hydrophytic Vegetation Indica  1 - Rapid Test for Hydrophy  2 - Dominance Test is >  3 - Prevalence Index is 3  Problematic Hydrophytic	ators: rtic Vegetation 50% 3.0 <sup>1</sup>
Hydrophytic Vegetation Indicators:   1 - Rapid Test for Hydrophytic Vegetation     2 - Dominance Test is >50%     3 - Prevalence Index is 3.0¹     Problematic Hydrophytic Vegetation '(Explain)     Explain   Problematic Hydrophytic Vegetation '(Explain)     Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.   Definitions of Four Vegetation Stratus     Tree - Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardles height.   Sapling/Shrub - Woody plants, excluding vines, 8 it than 3 in. DBH and greater than 3.28 ft (1 m) tall.     Herb - All herbaceous (non-woody) plants, regardled of size, and woody plants less than 3.28 ft tall.     Woody vine - All woody vines greater than 3.28 ft height.     Woody vine - All woody vines greater than 3.28 ft height.     Woody vine - All woody vines greater than 3.28 ft height.     Hydrophytic Vegetation		- Total Cover	Hydrophytic Vegetation Indica  1 - Rapid Test for Hydrophy  2 - Dominance Test is >  3 - Prevalence Index is 3  Problematic Hydrophytic	ators: rtic Vegetation 50% 3.0 <sup>1</sup>
1 - Rapid Test for Hydrophytic Vegetation   2 - Dominance Test is >50%   3 - Prevalence Index is 3.0	=	- Total Cover	1 - Rapid Test for Hydrophy 2 - Dominance Test is > 3 - Prevalence Index is 3 Problematic Hydrophytic	rtic Vegetation 50% 3.0 <sup>1</sup>
2 - Dominance Test is >50%		- Total Cover	2 - Dominance Test is > 3 - Prevalence Index is 3 - Problematic Hydrophytic	50% 3.0 <sup>1</sup>
3 - Prevalence Index is 3.0¹ Problematic Hydrophytic Vegetation¹ (Explain)  1 Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree — Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardles height.  Sapling/Shrub — Woody plants, excluding vines, 18 than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb — All herbaceous (non-woody) plants, regardl of size, and woody plants less than 3.28 ft tall.  Woody vine — All woody vines greater than 3.28 ft height.  1 Woody vine — All woody vines greater than 3.28 ft height.  1 Hydrophytic Vegetation¹  Explain — All woody vines greater than 3.28 ft height.	=	Total Cover	3 - Prevalence Index is 3	3.0 <sup>1</sup>
= Total Cover 50% of total cover: 20% of total	=	Total Cover	Problematic Hydrophytic	
Solve of total cover: 20% of total cover: (Explain)			<del>-</del>	c Vegetation <sup>1</sup>
"Indicators of hydric soil and wetland hydrology mube present, unless disturbed or problematic.  Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardles height.  Sapling/Shrub – Woody plants, excluding vines, let than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardl of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft height.  Total Cover  50% of total cover:  20% of total cover:  Hydrophytic Vegetation  Tree – Woody plants, excluding vines, let than 3 in. DBH and greater than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft height.  Hydrophytic Vegetation  Hydrophytic Vegetation  Indicators of hydric soil and wetland hydrology mube present?  Plantal Cover  Tree – Woody plants, excluding vines, let than 3 in. (7.6 cm more in diameter at breast height (DBH), regardles height.	_ 20% of	total cover:	(Explain)	
be present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardles height.  Sapling/Shrub – Woody plants, excluding vines, let than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft height.  Tree – Woody plants, excluding vines, let than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardle of size, and woody vines greater than 3.28 ft height.  Tree – Woody plants, excluding vines, let than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All woody vine – All woody vines greater than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft height.  Tree – Woody plants, excluding vines, let than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Hydrophytic Vegetation				
Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardles height.  Sapling/Shrub – Woody plants, excluding vines, let than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardl of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft height.  Tree – Woody plants, excluding vines, let than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardl of size, and woody plants less than 3.28 ft height.  Tree – Woody vine – All woody vines greater than 3.28 ft height.  Hydrophytic Vegetation Vegetation Present?			<sup>1</sup> Indicators of hydric soil and wet be present, unless disturbed or p	tland hydrology mus problematic.
Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardles height.  Sapling/Shrub – Woody plants, excluding vines, let than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft height.  Tree – Woody plants, excluding vines, let than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardle of size, and woody plants less than 3.28 ft height.  Woody vine – All woody vines greater than 3.28 ft height.  Hydrophytic Vegetation Present?  Ves No			Definitions of Four Vegetation	Strata:
Tree - Woody plants, excluding vines, in (7.0 dr. more in diameter at breast height (DBH), regardles height.				
height.  Sapling/Shrub – Woody plants, excluding vines, let than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardl of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft height.  Total Cover    Sow of total cover:			Tiee - Woody plants, excluding	
Sapling/Shrub – Woody plants, excluding vines, lethan 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardled of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft height.  = Total Cover  50% of total cover:				it (DBH), regardless
than 3 in. DBH and greater than 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardl of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft height.  50% of total cover:			-	
Herb – All herbaceous (non-woody) plants, regardly of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft height.  Total Cover  20% of total cover:    Total Cover   20% of total cover:   4   4   4   4   4   4   4   4   4				
of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft height.  Total Cover  So% of total cover:  20% of total cover:			-   than 3 lii. DBH and greater than	3.20 II (1 III) Idii.
Woody vine – All woody vines greater than 3.28 ft height.				
1 height.  2 = Total Cover  50% of total cover: 20% of total cover:  //oody Vine Stratum (Plot size: )  = Total Cover  = Total Cover  Hydrophytic Vegetation Present? Ves. No.			of size, and woody plants less th	nan 3.28 ft tall.
11			- Woody vine – All woody vines o	greater than 3.28 ft in
2 = Total Cover			, ,	,
= Total Cover  50% of total cover: 20% of total cover:  /oody Vine Stratum (Plot size: )  = Total Cover  Hydrophytic Vegetation Present? Ves No			_	
50% of total cover: 20% of total cover: //oody Vine Stratum (Plot size: )				
Coody Vine Stratum (Plot size: )		total cover:		
Hydrophytic Vegetation Present? Ves No			-	
Hydrophytic Vegetation Present? Ves No				
Hydrophytic = Total Cover Vegetation Yes No			-	
			-	
Hydrophytic Vegetation Present? Yes No			-	
= Total Cover Vegetation			-	
Present? Ves No				
50% of total cover: 20% of total cover: Present? Yes No	=	Total Cover		Na
	_ 20% of	total cover:	Present? Yes	
emarks: (If observed, list morphological adaptations below).	).			
emarks: (If observed, list morphological adaptations below		=_ 20% of	= Total Cover _ 20% of total cover: = Total Cover _ 20% of total cover:	more in diameter at breast height.  Sapling/Shrub – Woody plants, than 3 in. DBH and greater than there is a month of size, and woody plants less the woody vine – All woody vines of height.  Total Cover  20% of total cover:  Hydrophytic Vegetation Present? Yes

Project/Site:		City/0	County:	Sampling Date:	
				State: Sampling Point:	
Investigator(s):		Secti	ion, Township, Range:		
Landform (hillslope, terrace, e	etc.):	Loca	I relief (concave, conve	x, none): Slop	e (%):
				Dat	
				NWI classification:	
Are climatic / hydrologic cond					
				nal Circumstances" present? Yes	No
				, explain any answers in Remarks.)	110 _
Are Vegetation, Soil _				,	oturoo
SOWINARY OF FINDIN	GS - Attach site	map showing sai		ions, transects, important fe	atures,
Hydrophytic Vegetation Pres		No	Is the Sampled Area	ı	
Hydric Soil Present?		No	within a Wetland?	Yes No	_
Wetland Hydrology Present? Remarks:	r res	No			
HYDROLOGY					
Wetland Hydrology Indica	tors:			Secondary Indicators (minimum of	two requir
Primary Indicators (minimum	of one is required; che	ck all that apply)		Surface Soil Cracks (B6)	
Surface Water (A1)		quatic Fauna (B13)		Sparsely Vegetated Concave S	Surface (E
High Water Table (A2)		arl Deposits (B15) <b>(LR</b>		Drainage Patterns (B10)	
Saturation (A3) Water Marks (B1)		ydrogen Sulfide Odor (	(C1) along Living Roots (C3)	<ul><li> Moss Trim Lines (B16)</li><li> Dry-Season Water Table (C2)</li></ul>	
Sediment Deposits (B2)		resence of Reduced Iro		Crayfish Burrows (C8)	
Drift Deposits (B3)		ecent Iron Reduction in	, ,	Saturation Visible on Aerial Im	agery (C9
Algal Mat or Crust (B4)	T	nin Muck Surface (C7)		Geomorphic Position (D2)	
Iron Deposits (B5)		ther (Explain in Remar	ks)	Shallow Aquitard (D3)	
Inundation Visible on A	3 , ( )			FAC-Neutral Test (D5)	
Water-Stained Leaves ( Field Observations:	<u>B9)</u>			Sphagnum moss (D8) (LRR T	, U)
Surface Water Present?	Yes No	Depth (inches):			
Water Table Present?		Depth (inches):			
Saturation Present?		Depth (inches):		I Hydrology Present? Yes	No
(includes capillary fringe)					
Describe Recorded Data (st	ream gauge, monitoring	well, aerial photos, pro	evious inspections), if a	vallable:	
Remarks:					
t rainfall, very satu	rated ground:	across entire i	ıtility easemen	t.	
le ramian, vory bace	natoa groana i		atility education		

Immediately after rain event

= Total Cover  = Total Cover  f total cover:  = Total Cover  f total cover:	Number of Dominant Species That Are OBL, FACW, or FAC:  Total Number of Dominant Species Across All Strata:  Percent of Dominant Species That Are OBL, FACW, or FAC:  Prevalence Index worksheet:  Total % Cover of: Multiply by:  OBL species
= Total Cover  f total cover:  = Total Cover  f total cover:	That Are OBL, FACW, or FAC:  Total Number of Dominant Species Across All Strata:  Percent of Dominant Species That Are OBL, FACW, or FAC:  Prevalence Index worksheet:  Total % Cover of: Multiply by:  OBL species
= Total Cover of total cover:  = Total Cover for total cover:	Total Number of Dominant Species Across All Strata:  Percent of Dominant Species That Are OBL, FACW, or FAC:  Prevalence Index worksheet:
= Total Cover  f total cover:  = Total Cover  f total cover:	Percent of Dominant Species That Are OBL, FACW, or FAC:  Prevalence Index worksheet:  Total % Cover of: Multiply by:  OBL species x 1 =  FACW species x 2 =  FAC species x 3 =  FACU species x 4 =  UPL species x 5 =  Column Totals: (A)  Prevalence Index = B/A =  Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation 2 - Dominance Test is >50%  3 - Prevalence Index 3.0¹  Problematic Hydrophytic Vegetation¹ (Exp
= Total Cover of total cover:  = Total Cover for total cover:	Percent of Dominant Species That Are OBL, FACW, or FAC:  Prevalence Index worksheet:
= Total Cover of total cover:  = Total Cover for total cover:	That Are OBL, FACW, or FAC:  Prevalence Index worksheet:
= Total Cover of total cover:  = Total Cover for total cover:	Prevalence Index worksheet:  Total % Cover of: Multiply by:  OBL species
= Total Cover  If total cover:  = Total Cover  = Total Cover  If total cover:	Total % Cover of:  OBL species
= Total Cover of total cover:  = Total Cover	Total % Cover of:  OBL species
= Total Cover  f total cover:  = Total Cover  f total cover:	OBL species
= Total Cover	FACW species
= Total Cover of total cover:	FAC species
= Total Cover of total cover:	FACU species x 4 =
= Total Cover of total cover:	UPL species x 5 =
= Total Cover of total cover:	DPL species x 5 =
= Total Cover  If total cover:	Prevalence Index = B/A =  Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation  2 - Dominance Test is >50%  3 - Prevalence Index 3.0¹  Problematic Hydrophytic Vegetation¹ (Exp  ¹Indicators of hydric soil and wetland hydrology make present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardle height.
= Total Cover  f total cover:	Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation  2 - Dominance Test is >50%  3 - Prevalence Index 3.0¹ Problematic Hydrophytic Vegetation¹ (Exp  ¹Indicators of hydric soil and wetland hydrology mand be present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardle height.
= Total Cover of total cover:	Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation  2 - Dominance Test is >50%  3 - Prevalence Index 3.0¹ Problematic Hydrophytic Vegetation¹ (Exp  ¹Indicators of hydric soil and wetland hydrology mand be present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardle height.
= Total Cover of total cover:	1 - Rapid Test for Hydrophytic Vegetation2 - Dominance Test is >50%3 - Prevalence Index 3.0¹Problematic Hydrophytic Vegetation¹ (Exp¹Indicators of hydric soil and wetland hydrology make present, unless disturbed or problematic  Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 commore in diameter at breast height (DBH), regardle height.
= Total Cover  If total cover:	2 - Dominance Test is >50%  3 - Prevalence Index 3.0¹ Problematic Hydrophytic Vegetation¹ (Exp  ¹Indicators of hydric soil and wetland hydrology makes the present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardle height.
= Total Cover of total cover:	3 - Prevalence Index 3.01 Problematic Hydrophytic Vegetation1 (Exp  1 Indicators of hydric soil and wetland hydrology me be present, unless disturbed or problematic.  Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm more in diameter at breast height (DBH), regardle height.
= Total Cover  If total cover:	Problematic Hydrophytic Vegetation¹ (Exp  ¹Indicators of hydric soil and wetland hydrology m be present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 c more in diameter at breast height (DBH), regardle height.
of total cover:	<ul> <li>Indicators of hydric soil and wetland hydrology metable present, unless disturbed or problematic.</li> <li>Definitions of Four Vegetation Strata:</li> <li>Tree – Woody plants, excluding vines, 3 in. (7.6 commore in diameter at breast height (DBH), regardle height.</li> </ul>
	Indicators of hydric soil and wetland hydrology metable present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 commore in diameter at breast height (DBH), regardle height.
	be present, unless disturbed or problematic.  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 of more in diameter at breast height (DBH), regardle height.
	more in diameter at breast height (DBH), regardle height.
	Sapling/Shrub – Woody plants, excluding vines,
	_
	<ul> <li>Herb – All herbaceous (non-woody) plants, regar of size, and woody plants less than 3.28 ft tall.</li> </ul>
·	Of size, and woody plants less than 5.20 it tall.
- <del></del>	─ Woody vine – All woody vines greater than 3.28
<del></del>	height.
<del></del>	_
= Total Cover	
of total cover:	_
	_
	_
	— Hydrophytic
-	Vegetation Present? Yes No
	riesent: res No
	='

Project/Site:	roject/Site: City/Count		County:	Sar	npling Date:	
				State: Sampling Point:		
Investigator(s): Section, Township, Range:						
Landform (hillslope, terrace, etc.):						
		Lat:Long				
Soil Map Unit Name:						
Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)						
Are Vegetation, Soil	, or Hydrolog	y significantly distur	bed? Are "Norma	Il Circumstances" prese	nt? YesNo	
Are Vegetation, Soil	, or Hydrolog	y naturally problem	atic? (If needed,	explain any answers in	Remarks.)	
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.						
Hydrophytic Vegetation Pres	ent? Yes	No	In the Commind Aven			
Hydric Soil Present?		No	Is the Sampled Area within a Wetland?	Yes	No	
Wetland Hydrology Present?		No	within a wettand?	res	NO	
HYDROLOGY						
				Casandan Indicators	(minimum of two required)	
Wetland Hydrology Indicators:  Primary Indicators (minimum of one is required; check all that apply)				Secondary Indicators (minimum of two required)		
-	-			Surface Soil Cracks (B6)		
Surface Water (A1) High Water Table (A2)		Aquatic Fauna (B13) Marl Deposits (B15) <b>(LR</b>	D 11/	<ul><li>Sparsely Vegetated Concave Surface (B8)</li><li>Drainage Patterns (B10)</li></ul>		
Saturation (A3)		_ Hydrogen Sulfide Odor (		Moss Trim Lines (B16)		
Water Marks (B1)		<ul><li>Oxidized Rhizospheres a</li></ul>				
Sediment Deposits (B2)		Presence of Reduced Iro		Crayfish Burrows (C8)		
Drift Deposits (B3)		Recent Iron Reduction in				
Algal Mat or Crust (B4)	_	_ Thin Muck Surface (C7)		Geomorphic Position (D2)		
Iron Deposits (B5)		Other (Explain in Remarks)		Shallow Aquitard (D3)		
Inundation Visible on Aerial Imagery		ry (B7)		FAC-Neutral Test (D5)		
Water-Stained Leaves (B9) Sphagnum moss (D8) (LRR T, U)						
Field Observations:		D # (				
Surface Water Present?	· · · · · · · · · · · · · · · · · · ·	Depth (inches):				
Water Table Present?		Depth (inches):		Westland Hydrology Process Vec		
Saturation Present? (includes capillary fringe)	Yes No	No Depth (inches):		Wetland Hydrology Present? Yes No		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:						
Remarks:						

Wetland 1 is an isolated forested wetland.

EGETATION (Four Strata) – Use scientific na			<del></del>		:
ree Stratum (Plot size:)		Dominant Indicator Species? Status	Dominance Test worksl		
·			Number of Dominant Spe That Are OBL, FACW, or		(A)
			THAT AIC OBE, I NOW, OF	17.0.	(//)
			Total Number of Dominar		(D)
			Species Across All Strata	ı:	(B)
			Percent of Dominant Spe		
			That Are OBL, FACW, or	FAC:	(A/B)
-			Prevalence Index works	heet:	
-			Total % Cover of:	Multiply	/ by:
			OBL species		
		Total Cover	FACW species		
50% of total cover:	20% of	total cover:	FAC species		
apling/Shrub Stratum (Plot size:)			FACU species		
·				x 5 =	
			Column Totals:	(A)	(B)
			Prevalence Index =	= B/A =	
			Hydrophytic Vegetation		
			1 - Rapid Test for Hy		ation
			2 - Dominance Te		
			3 - Prevalence In	dex is 3.01	
		Total Cover	Problematic Hyd	drophytic Vegetat	tion <sup>1</sup> (Explair
50% of total cover:		total cover:	_	opyo rogotat	(=,,,,
			Definitions of Four Vego Tree – Woody plants, exo more in diameter at breas	etation Strata: cluding vines, 3 ir	n. (7.6 cm) o
			height.		
			Sapling/Shrub – Woody	plants, excluding	y vines, less
			than 3 in. DBH and greate		
			Herb – All herbaceous (n	on-woody) plante	e rogardloce
			of size, and woody plants		
0			NAT a selected on All consequent		0 00 ft !
1			Woody vine – All woody height.	vines greater tha	an 3.28 π in
2.					
		Total Cover			
50% of total cover:					
	20 /0 01	total cover.			
Voody Vine Stratum (Plot size:)					
•					
•					
			Hydrophytic		
	=	Total Cover	Vegetation	Na	
50% of total cover:	20% of	total cover:	Present? Yes	No	
emarks: (If observed, list morphological adaptations be	ow).				
(··, ··	/-				

SOIL Sampling Point: WDP1

Depth (inches)							n the absence of	marcators.,	
(Inches)	Matrix Color (moist)	%	Color (moist)	ox Featu %	res Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	
- 6	Color (moist)		Color (moist)			LUC	rexture	Remarks	
6 -	-	60							
6 -	5Y 6/2	35	7.5YR 5/8	5	<u>C</u>	PL / M	Clay		
-									
			-						_
	-								
			-						
<sup>1</sup> Type: C=C	oncentration, D=De	pletion, RM	=Reduced Matrix, M	IS=Mask	ed Sand Gi	ains.	<sup>2</sup> Location: PL	.=Pore Lining, M=Mat	rix.
Hydric Soil	Indicators: (Appli	cable to all	LRRs, unless other	erwise n	oted.)		Indicators for	Problematic Hydric	: Soils³:
Histosol	(A1)		Polyvalue B	elow Sur	face (S8) <b>(I</b>	LRR S, T, U	J) 1 cm Muc	k (A9) <b>(LRR O)</b>	
	pipedon (A2)		Thin Dark S					k (A10) <b>(LRR S)</b>	
	istic (A3)		Loamy Mucl	-		R O)		Vertic (F18) (outside	
	en Sulfide (A4)		Loamy Gley					Floodplain Soils (F19	
	d Layers (A5)	D T II\	Depleted Ma				Anomalou (MLRA	is Bright Loamy Soils	(F20)
_	: Bodies (A6) <b>(LRR</b> ucky Mineral (A7) <b>(I</b>		Redox Dark ) Depleted Da				•	nt Material (TF2)	
	resence (A8) (LRR		Redox Depr					low Dark Surface (TF	12)
	uck (A9) (LRR P, T)		Marl (F10) (		()			plain in Remarks)	/
	d Below Dark Surfa		Depleted Oc		1) <b>(MLRA 1</b>	51)		,	
Thick D	ark Surface (A12)		Iron-Mangar	nese Mas	sses (F12)	(LRR O, P,	T) <sup>3</sup> Indicato	rs of hydrophytic veg	etation and
	rairie Redox (A16)					「, U)		d hydrology must be	
-	Mucky Mineral (S1)	(LRR O, S)	Delta Ochric					disturbed or problem	atic.
	Gleyed Matrix (S4)		Reduced Ve						
-	Redox (S5) d Matrix (S6)		Piedmont FI				ғул) RA 149A, 153C, 15	3D)	
	ırface (S7) (LRR P,	S. T. U)	Anomalous	Drigitt Lo	ally Solis (	1 20) (IVILIV	A 143A, 1330, 10	, ,	
	Layer (if observed								
Type:		,							
	ches):						Hydric Soil Pre	esent? Yes	No
Remarks:							1.,,		
rtemanto.									
Drobles	Cailar Assu	دا المومو	, dri o						
Problem	n Soils; Assu	med Hy	/dric						
Problem	n Soils; Assu	med Hy	/dric						
Problem	n Soils; Assu	med Hy	/dric						
Problem	n Soils; Assu	med Hy	/dric						
Problem	n Soils; Assu	med Hy	/dric						
Problem	n Soils; Assu	med Hy	/dric						
Problem	n Soils; Assu	med Hy	/dric						
Problem	n Soils; Assu	med Hy	/dric						
Problem	n Soils; Assu	med Hy	/dric						
Problem	n Soils; Assu	med Hy	/dric						
Problem	n Soils; Assu	med Hy	/dric						
Problem	n Soils; Assu	med Hy	/dric						
Problem	n Soils; Assu	med Hy	/dric						
Problem	n Soils; Assu	med Hy	/dric						
Problem	n Soils; Assu	med Hy	/dric						
Problem	n Soils; Assu	med Hy	/dric						
Problem	n Soils; Assu	med Hy	/dric						
Problem	n Soils; Assu	med Hy	/dric						
Problem	n Soils; Assu	med Hy	/dric						
Problem	n Soils; Assu	med Hy	/dric						
Problem	n Soils; Assu	med Hy	/dric						

Project/Site:		City/Co	ounty:		Sampling Date:
Applicant/Owner:				State:	Sampling Point: WDP2
Investigator(s):					
Landform (hillslope, terrace, etc.):					
Subregion (LRR or MLRA):					Datum:
Soil Map Unit Name:					ation:
				<u></u>	
Are climatic / hydrologic conditions on the		-			
Are Vegetation, Soil, or F					present? YesNo
Are Vegetation, Soil, or F	lydrology	_ naturally problema	tic? (If need	ded, explain any answ	ers in Remarks.)
SUMMARY OF FINDINGS - At	tach site ma	p showing sam	pling point lo	cations, transect	s, important features, etc.
Hydrophytic Vegetation Present?	Voo	No			
Hydrophytic Vegetation Present? Hydric Soil Present?	Yes		Is the Sampled A		
Wetland Hydrology Present?	Yes		within a Wetland	? Yes	No
Remarks:					
HYDROLOGY					
Wetland Hydrology Indicators:				Secondary Indic	ators (minimum of two required)
Primary Indicators (minimum of one is a	equired; check a	all that apply)		Surface Soi	l Cracks (B6)
Surface Water (A1)	Aqua	tic Fauna (B13)		Sparsely Ve	egetated Concave Surface (B8)
High Water Table (A2)		Deposits (B15) (LRR			atterns (B10)
Saturation (A3)	-	ogen Sulfide Odor (C		Moss Trim	
Water Marks (B1)		zed Rhizospheres al		•	Water Table (C2)
Sediment Deposits (B2)		ence of Reduced Iron		Crayfish Bu	rrows (C8) /isible on Aerial Imagery (C9)
Drift Deposits (B3) Algal Mat or Crust (B4)		nt Iron Reduction in Muck Surface (C7)	Tilled Solls (Co)		c Position (D2)
Iron Deposits (B5)		(Explain in Remark	s)	Shallow Aq	
Inundation Visible on Aerial Image		(=/	-,	FAC-Neutra	
Water-Stained Leaves (B9)	,				moss (D8) (LRR T, U)
Field Observations:					
Surface Water Present? Yes	No [	Depth (inches):			
Water Table Present? Yes	No [	Depth (inches):			
	No [	Depth (inches):	Wetla	and Hydrology Prese	nt? Yes No
(includes capillary fringe)  Describe Recorded Data (stream gauge	e monitorina we	Il aerial photos prev	vious inspections)	if available	
Boosing Roserada Bata (etroam gaag.	o, monitoring wo	ii, donai priotos, pro-	nodo mopodilono),	ii avallabio.	
Remarks:					

## **VEGETATION (Four Strata) –** Use scientific names of plants.

	ames of pl	ants.	Sampling Point: WDP2
		Dominant Indicator	Dominance Test worksheet:
Tree Stratum (Plot size:)  1		Species? Status	Number of Dominant Species That Are OBL, FACW, or FAC:(A)
2			Total Number of Dominant
3			
l			
5.			Percent of Dominant Species That Are OBL, FACW, or FAC: (A/B
S			That Ale OBE, I AOW, OI I AO.
7.			Prevalence Index worksheet:
3.			Total % Cover of: Multiply by:
		Total Cover	OBL species x 1 =
50% of total cover:			FACW species x 2 =
Sapling/Shrub Stratum (Plot size:)	20 70 01		FAC species x 3 =
			FACU species x 4 =
			UPL species x 5 =
<u> </u>			Column Totals: (A) (B)
3			
l			Prevalence Index = $B/A = \underline{2.00}$
5			
S			Hydraphyajsa/vegstation/Indistributes/egetation
<b>7</b>			2 - Dominance Test is >50%
3			3 - Prevalence Index 3.0 <sup>1</sup>
	=	Total Cover	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
50% of total cover:	20% of	total cover:	
Herb Stratum (Plot size:)			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
l			be present, unless disturbed or problematic.
2.			Definitions of Four Vegetation Strata:
3			Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
ł			more in diameter at breast height (DBH), regardless of
5			height.
3			Sapling/Shrub – Woody plants, excluding vines, less
7.			than 3 in. DBH and greater than 3.28 ft (1 m) tall.
3.			Harb All berbassaus (non woody) plants, regardless
9.			<ul> <li>Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.</li> </ul>
10			
1			Woody vine – All woody vines greater than 3.28 ft in height.
12.			. Height.
12.		Total Cover	•
50% of total cover:			
Voody Vine Stratum (Plot size:)	20 /0 01	total cover.	
l			
2			
3			
4 -			
ō			Hydrophytic
	=	Total Cover	Vegetation Present? Yes No
50% of total cover:			

SOIL Sampling Point: WDP2

Profile Desc	cription: (Describe to the d	epth needed to docu	ment the i	ndicator or co	nfirm the absence	ce of indicators.)
Depth	Matrix	Redo	x Features	5		
(inches)	Color (moist) %	Color (moist)	%	Type <sup>1</sup> Loc	2 Texture	Remarks
-						
·				·——		- ·
l — -			· ——	· ·		
-						
		<del>-</del> -	<del></del>			-
		_				
		_				
_						
1			<del></del>		2	
	oncentration, D=Depletion, R					n: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators: (Applicable to					rs for Problematic Hydric Soils <sup>3</sup> :
Histosol				ce (S8) <b>(LRR S</b>		Muck (A9) <b>(LRR O)</b>
	pipedon (A2)			(LRR S, T, U)		Muck (A10) (LRR S)
	istic (A3)		-	(F1) <b>(LRR 0)</b>		uced Vertic (F18) (outside MLRA 150A,B)
Hydroge	en Sulfide (A4)	Loamy Gleye	ed Matrix (I	F2)	Pied	mont Floodplain Soils (F19) (LRR P, S, T)
Stratified	d Layers (A5)	Depleted Ma	trix (F3)			malous Bright Loamy Soils (F20)
_	Bodies (A6) (LRR P, T, U)	Redox Dark			(M	LRA 153B)
5 cm Mu	ucky Mineral (A7) (LRR P, T,	U) Depleted Da	rk Surface	(F7)		Parent Material (TF2)
Muck Pr	resence (A8) (LRR U)	Redox Depre		3)	Very	Shallow Dark Surface (TF12)
1 cm Mu	uck (A9) <b>(LRR P, T)</b>	Marl (F10) (I	.RR U)		Othe	er (Explain in Remarks)
Deplete	d Below Dark Surface (A11)	Depleted Oc	hric (F11) (	(MLRA 151)		
Thick Da	ark Surface (A12)	Iron-Mangan	ese Masse	es (F12) <b>(LRR</b>	<b>O</b> , <b>P</b> , <b>T</b> ) <sup>3</sup> Inc	dicators of hydrophytic vegetation and
Coast P	rairie Redox (A16) (MLRA 1	<b>50A)</b> Umbric Surfa	ace (F13) (	LRR P, T, U)	W	etland hydrology must be present,
Sandy N	Mucky Mineral (S1) (LRR O,	B) Delta Ochric	(F17) (ML	RA 151)	u	nless disturbed or problematic.
Sandy C	Gleyed Matrix (S4)	Reduced Ve	rtic (F18) <b>(</b> I	MLRA 150A, 1	50B)	
Sandy F	Redox (S5)	Piedmont Flo	oodplain So	oils (F19) <b>(MLF</b>	RA 149A)	
Stripped	l Matrix (S6)	Anomalous E	Bright Loan	ny Soils (F20)	(MLRA 149A, 153	BC, 153D)
Dark Su	rface (S7) (LRR P, S, T, U)					
Restrictive	Layer (if observed):					
Type:						
	ches):				Hydric Sc	oil Present? Yes No
	Ciles)				Tiyunc 30	on riesent: resNo
Remarks:						

Project/Site:	City/County:			Sampling Date:
Applicant/Owner:			State:	Sampling Point: WDP3
Investigator(s):				
Landform (hillslope, terrace, etc.):				
Subregion (LRR or MLRA):	· · · · · · · · · · · · · · · · · · ·		, <u>-</u>	Datum:
Soil Map Unit Name:				ation:
				<u> </u>
Are climatic / hydrologic conditions on the site				
Are Vegetation, Soil, or Hydro				present? YesNo
Are Vegetation, Soil, or Hydro	logy naturally problematic?	(If needed, e	explain any answe	ers in Remarks.)
SUMMARY OF FINDINGS - Attack	n site map showing sampling	point location	ons, transects	s, important features, etc.
Hydrophytic Vegetation Present? Yes	es No Is the			
	as No	Sampled Area	.,	
	es No	n a Wetland?	Yes	No
Remarks:				
HYDROLOGY				
Wetland Hydrology Indicators:			Secondary Indica	ators (minimum of two required)
Primary Indicators (minimum of one is requi	red: check all that apply)		Surface Soil	
Surface Water (A1)	Aquatic Fauna (B13)			getated Concave Surface (B8)
High Water Table (A2)	Marl Deposits (B15) (LRR U)		Sparsely ve	
Saturation (A3)	Hydrogen Sulfide Odor (C1)		Moss Trim L	
Water Marks (B1)	Oxidized Rhizospheres along Liv	ing Roots (C3)		Water Table (C2)
Sediment Deposits (B2)	Presence of Reduced Iron (C4)	. ,	Crayfish Bur	· ·
Drift Deposits (B3)	Recent Iron Reduction in Tilled S	Soils (C6)	Saturation V	isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Thin Muck Surface (C7)		Geomorphic	Position (D2)
Iron Deposits (B5)	Other (Explain in Remarks)		Shallow Aqu	
Inundation Visible on Aerial Imagery (B	7)		FAC-Neutral	
Water-Stained Leaves (B9)			Sphagnum r	noss (D8) (LRR T, U)
Field Observations: Surface Water Present? Yes	No. Donth (inches):			
	No Depth (inches): No Depth (inches): <u>1</u>	<del></del>		
	No Depth (inches): 0	Wetland H	dydrology Prese	nt? Yes No
(includes capillary fringe)				it: lesNO
Describe Recorded Data (stream gauge, mo	onitoring well, aerial photos, previous ir	spections), if ava	nilable:	
Remarks:				

## **VEGETATION (Four Strata) –** Use scientific names of plants.

<b>EGETATION</b> (Four Strata)	<ul> <li>Use scientific r</li> </ul>	names of pla	ants.	Sampling Point: WDP3
			Dominant Indicator	Dominance Test worksheet:
Free Stratum (Plot size: I	,		Species? Status	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
				Total Number of Dominant
J				Species Across All Strata: 4 (B)
÷				Beauty of Beauty and Occasion
j				Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (A/B
)				
, <u> </u>				Prevalence Index worksheet:
J				Total % Cover of: Multiply by:
			Total Cover	OBL species x 1 =
50	% of total cover:	20% of	total cover:	FACW species x 2 =
apling/Shrub Stratum (Plot size:	)			FAC species x 3 =
·				FACU species x 4 =
				UPL species x 5 =
				Column Totals: <u>85</u> (A) <u>170</u> (B)
·				Prevalence Index = B/A = 2.00
i				
				Hydrophytic Vegetation Indicators:  1 - Rapid Test for Hydrophytic Vegetation
·				2 - Dominance Test is >50%
J				3 - Prevalence Index 3.0 <sup>1</sup>
			Total Cover	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
50	% of total cover:			Problematic rhydrophytic Vegetation (Explain)
Herb Stratum (Plot size:				The disease of booking only and contained booking on the
				<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2.				Definitions of Four Vegetation Strata:
3				
				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) o
l				more in diameter at breast height (DBH), regardless of height.
5.				
5				<b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.
7				
3. ].			<u> </u>	<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
				of size, and woody plants less than 5.20 ft tail.
0				<b>Woody vine</b> – All woody vines greater than 3.28 ft in
1				height.
2		85%	Total Cover	
EC	% of total cover: 42			
	·	20% 01	total cover: 17	
Noody Vine Stratum (Plot size:				
2.				
3.				
ł. -				
5				Hydrophytic
			Total Cover	Vegetation Present? Yes No
	% of total cover:		total cover:	
Remarks: (If observed, list morpho			total cover.	

SOIL Sampling Point: WDP3

Profile Desc	cription: (Describe to the de	pth needed to docur	ment the	indicator or co	onfirm the	absence	of indicate	ors.)	
Depth	Matrix	Redo	x Feature	es					
(inches)	Color (moist) %	Color (moist)	%	Type <sup>1</sup> Loc	; 2	Texture		Remarks	
-									
							-		
	·	-							
		<u> </u>							
-									
	·								
_									_
1			<del></del>	<del></del>	<del></del>	2			
	oncentration, D=Depletion, RN							ining, M=Matr	
Hydric Soil	Indicators: (Applicable to a	I LRRs, unless othe	rwise no	ted.)	ı	Indicators	for Proble	matic Hydric	Soils":
Histosol	` '			ace (S8) <b>(LRR \$</b>			1uck (A9) <b>(L</b>	•	
	pipedon (A2)			9) (LRR S, T, U)	) _		luck (A10)		
Black H	istic (A3)	Loamy Muck	y Mineral	(F1) <b>(LRR O)</b>	=	Reduc	ed Vertic (F	18) <b>(outside</b>	MLRA 150A,B)
Hydroge	en Sulfide (A4)	Loamy Gleye	ed Matrix	(F2)	_	Piedm	ont Floodpla	ain Soils (F19)	(LRR P, S, T)
Stratifie	d Layers (A5)	Depleted Ma	trix (F3)		_	Anoma	lous Bright	Loamy Soils	(F20)
Organic	Bodies (A6) (LRR P, T, U)	Redox Dark	Surface (	F6)		(MLF	RA 153B)		
5 cm Mu	ucky Mineral (A7) (LRR P, T, U	J) Depleted Da	rk Surfac	e (F7)	_	Red Pa	arent Mater	ial (TF2)	
Muck Pi	resence (A8) (LRR U)	Redox Depre			_	Very S	hallow Dark	k Surface (TF	12)
	uck (A9) (LRR P, T)	Marl (F10) <b>(L</b>			_		Explain in I		
	d Below Dark Surface (A11)			(MLRA 151)					
Thick Da	ark Surface (A12)	Iron-Mangan	ese Mass	ses (F12) <b>(LRR</b>	O, P, T)	<sup>3</sup> Indic	ators of hyd	drophytic vege	tation and
Coast P	rairie Redox (A16) (MLRA 15	OA) Umbric Surfa	ace (F13)	(LRR P, T, U)		wet	land hydrol	ogy must be p	resent,
Sandy N	Mucky Mineral (S1) (LRR O, S	Delta Ochric	(F17) (M	LRA 151)		unle	ess disturbe	ed or problema	atic.
-	Gleyed Matrix (S4)			(MLRA 150A,	150B)			·	
	Redox (S5)			Soils (F19) <b>(ML</b> I					
-	Matrix (S6)	Anomalous E					, 153D)		
	rface (S7) (LRR P, S, T, U)	<u>—</u>	Ü	, , ,	`		,		
	Layer (if observed):								
Type:	,								
	-l \.				l		D 40	V	NI -
	ches):				Н	ydric Soil	Present?	Yes	No
Remarks:									

Project/Site:		City/C	county:	Sa	mpling Date:
Applicant/Owner:					
Investigator(s):					
Landform (hillslope, terrace, etc			·		
Subregion (LRR or MLRA):					
Soil Map Unit Name:				<u>-</u>	
Are climatic / hydrologic conditi	ions on the site typ	pical for this time of year? Y	'es No	(If no, explain in Rema	arks.)
Are Vegetation, Soil	, or Hydrolog	y significantly distur	bed? Are "Norma	al Circumstances" prese	ent? YesNo
Are Vegetation, Soil	, or Hydrolog	y naturally problema	atic? (If needed,	explain any answers in	Remarks.)
SUMMARY OF FINDING	SS – Attach s	ite map showing san	npling point locati	ons, transects, in	nportant features, etc.
Hydrophytic Vegetation Prese	ant? Vec	No			
Hydric Soil Present?		No	Is the Sampled Area		
Wetland Hydrology Present?		No	within a Wetland?	Yes	No
Remarks:					
HYDROLOGY					
Wetland Hydrology Indicato	ors:			Secondary Indicators	(minimum of two required)
Primary Indicators (minimum	of one is required;	check all that apply)		Surface Soil Crac	cks (B6)
Surface Water (A1)		_ Aquatic Fauna (B13)		Sparsely Vegeta	ted Concave Surface (B8)
High Water Table (A2)		_ Marl Deposits (B15) (LRI		Drainage Pattern	
Saturation (A3)	_	_ Hydrogen Sulfide Odor (0	,	Moss Trim Lines	` '
Water Marks (B1)		_ Oxidized Rhizospheres a		Dry-Season Wate	
Sediment Deposits (B2)		_ Presence of Reduced Iro		Crayfish Burrows	` '
Drift Deposits (B3)		_ Recent Iron Reduction in	Tilled Soils (C6)		e on Aerial Imagery (C9)
Algal Mat or Crust (B4)		_ Thin Muck Surface (C7)	>	Geomorphic Pos	` ,
Iron Deposits (B5)		_ Other (Explain in Remark	(S)	Shallow Aquitard	
Inundation Visible on Aer Water-Stained Leaves (B	0 , ( ,			FAC-Neutral Tes Sphagnum moss	
Field Observations:	59)			Spriagrium moss	(D6) (LKK 1, U)
Surface Water Present?	Yes No	Depth (inches):			
Water Table Present?		Depth (inches):			
Saturation Present?		Depth (inches):		Hydrology Present?	Yes No
(includes capillary fringe)					163 10
Describe Recorded Data (stre	eam gauge, monito	oring well, aerial photos, pre	vious inspections), if av	ailable:	
Remarks:					

Immediately following rain event

EGETATION (Four Strata) – Use scientific na	<u> </u>	Sampling Point:
ree Stratum (Plot size:)	Absolute Dominant Indicat % Cover Species? Status	
·		Number of Dominant Species     That Are OBL, FACW, or FAC: (A)
		<u> </u>
		Species Across All Strata: (B)
		Percent of Dominant Species
		That Are OBL, FACW, or FAC: (A/
·		Prevalence Index worksheet:
		Total % Cover of: Multiply by:
	= Total Cover	OBL species x 1 =
50% of total cover:	20% of total cover:	FACW species x 2 =
apling/Shrub Stratum (Plot size:)		FAC species x 3 =
		FACU species x 4 =
		UPL species x 5 =
		Column Totals: (A) (E
-		_
·		
		2 - Dominance Test is >50%
		3 - Prevalence Index 1
	= Total Cover	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
50% of total cover:	20% of total cover:	
lerb Stratum (Plot size: )		Indicators of hydric soil and wetland hydrology must
,		
		Definitions of Four Vegetation Strata:
		_
		Tioo Troody planto, oxolading tilloo, o ill. (7.0 oll)
		more in diameter at breast height (DBH), regardless height.
		<del>-</del>
•		, , , , , , , , , , , , , , , , , , ,
		than 3 in. DBH and greater than 3.28 ft (1 m) tall.
		Herb – All herbaceous (non-woody) plants, regardles
		of size, and woody plants less than 3.28 ft tall.
0		- Woody vine – All woody vines greater than 3.28 ft in
1		height.
2.		_
	= Total Cover	
50% of total cover:	20% of total cover:	
	20 % Of total cover.	_
/oody Vine Stratum (Plot size:)		
		_
		_
		_
		_
		- Hydrophytic
	= Total Cover	Vegetation
50% of total cover:	20% of total cover:	Present? Yes No
emarks: (If observed, list morphological adaptations be		<del>-</del> 1
emand. In observed, list morphological adaptations be	10 <b>11</b> /.	

SOIL	Sampling Point:
------	-----------------

	cription: (Describe	to the depth				or commi	i the absence	oi indicato	rs.)	
Depth	Matrix Color (moist)	%	Color (moist)	x Feature %	s Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remarks	
(inches)	Color (Illoist)		Color (Inoist)	70	туре	LUC	rexture	-	Remarks	<u> </u>
-										
-					· ——					
-										
										<del></del>
-										
<sup>1</sup> Type: C=C	Concentration, D=Dep	pletion, RM=Re	educed Matrix, MS	S=Masked	d Sand Gra	ains.			ining, M=Ma	
Hydric Soil	Indicators: (Applie	cable to all LR	Rs, unless other	rwise not	ed.)		Indicators	for Proble	matic Hydri	c Soils³:
Histosol	(A1)		Polyvalue Be	elow Surfa	ice (S8) <b>(L</b>	RR S. T. L	J) 1 cm M	uck (A9) <b>(L</b>	RR O)	
	pipedon (A2)		Thin Dark Su					uck (A10)	•	
	listic (A3)		Loamy Muck							MLRA 150A,B)
	en Sulfide (A4)					. 0)				9) (LRR P, S, T)
	, ,		Loamy Gleye		(' <i>- )</i>					
	d Layers (A5)	. T II)	Depleted Ma	. ,	-0\			-	Loamy Soils	o (1 <sup>-</sup> ∠U)
	Bodies (A6) (LRR F		Redox Dark					A 153B)		
	ucky Mineral (A7) (L		Depleted Da					rent Mater		
	resence (A8) (LRR I		Redox Depre		8)				Surface (TF	-12)
1 cm M	uck (A9) (LRR P, T)		Marl (F10) <b>(L</b>	₋RR U)			Other (	Explain in f	Remarks)	
Deplete	d Below Dark Surfac	ce (A11)	Depleted Ocl							
Thick D	ark Surface (A12)		Iron-Mangan	iese Mass	es (F12) (	LRR O, P,	T) <sup>3</sup> Indica	ators of hyd	drophytic veg	getation and
Coast F	Prairie Redox (A16) (	MLRA 150A)	Umbric Surfa	ace (F13)	(LRR P, T	, U)	wetl	and hydrol	ogy must be	present,
Sandy I	Mucky Mineral (S1) (	LRR O, S)	Delta Ochric	(F17) (ML	LRA 151)		unle	ss disturbe	d or problem	natic.
Sandy (	Gleyed Matrix (S4)		Reduced Ver	rtic (F18)	(MLRA 15	0A, 150B)				
	Redox (S5)		Piedmont Flo							
-	d Matrix (S6)		Anomalous F	Rright Loai	my Soils (I	-200 (IVII R	A 149A 153C	153D)		
Strippe	d Matrix (S6)	9 T II)	Anomalous E	Bright Loa	my Soils (	-20) <b>(MLR</b>	A 149A, 153C,	153D)		
Stripped Dark Su	urface (S7) (LRR P,		Anomalous E	Bright Loa	my Soils (	-20) <b>(MLR</b>	A 149A, 153C,	153D)		
Stripped Dark Strictive			Anomalous E	Bright Loa	my Soils (I	-20) <b>(MLR</b>	A 149A, 153C,	153D)		
Stripped Dark Su	urface (S7) (LRR P,	):		Bright Loa	my Soils (	-20) <b>(MILK</b>	A 149A, 153C,	153D)		
Stripped Dark St Restrictive Type:	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loa	my Soils (i	-20) (MLR	A 149A, 153C,	·	Yes	_ No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loa	my Soils (i	-20) (MLR		·	Yes	No
Stripped Dark St Restrictive Type:	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loa	my Soils (i	-20) (MLR		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loa	my Soils (i	-20) (MLR		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loa	my Solls (	-20) (MLR		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Solis (	-20) (MLK		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Solis (	-20) (MLR		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Solis (	-20) (MLR		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Solis (	-20) (MLR		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Solis (	-20) (MLR		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Solis (	-20) (MLR		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Solis (i	-20) (MLR		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Solis (i	-20) (MLR		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Solis (	-20) (MLK		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Soils (i	-20) (MLK		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loa	my Soils (i	-20) (MLK		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loa	my Soils (i	-20) (MLK		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loa	my Soils (i	-20) (MLK		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Soils (i	-20) (MLK		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Soils (i	-20) (MLK		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Solis (i	-20) (MLK		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Soils (i	-20) (MLK		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Soils (i	-20) (MLK		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Soils (i	-20) (MLK		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Soils (i	-20) (MLK		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Solis (i	-20) (MLK		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Solis (i	-20) (MLK		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Solls (	-20) (MLK		·	Yes	No
Stripped Dark Strictive Restrictive Type: Depth (in	urface (S7) (LRR P, Layer (if observed)	:	_	Bright Loai	my Solis (	-20) (MLK		·	Yes	No

Project/Site:		City/Co	ounty:		Sampling Date:
Applicant/Owner:				State:	Sampling Point:
Investigator(s):		Sectio	n, Township, Range:		
Landform (hillslope, terrace, etc.):					
Subregion (LRR or MLRA):					
Soil Map Unit Name:			_		
Are climatic / hydrologic conditions o					
Are Vegetation, Soil,		-			resent? YesNo
Are Vegetation, Soil,  SUMMARY OF FINDINGS -				explain any answe	
Hydrophytic Vegetation Present? Hydric Soil Present? Wetland Hydrology Present? Remarks:	Yes	No _ No _ No	Is the Sampled Area within a Wetland?	Yes	No
HYDROLOGY					
Wetland Hydrology Indicators:				Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum of one	e is required; chec	ck all that apply)		Surface Soil	<u> </u>
Surface Water (A1)	-	uatic Fauna (B13)		· · · · · · · · · · · · · · · · · · ·	getated Concave Surface (B8)
High Water Table (A2)		arl Deposits (B15) (LRR	! U)	Drainage Pat	
Saturation (A3)	Ну	drogen Sulfide Odor (C	:1)	Moss Trim Li	nes (B16)
Water Marks (B1)	Ox	idized Rhizospheres al	ong Living Roots (C3)	Dry-Season	Water Table (C2)
Sediment Deposits (B2)	Pro	esence of Reduced Iror	n (C4)	Crayfish Burr	rows (C8)
Drift Deposits (B3)	Re	ecent Iron Reduction in	Tilled Soils (C6)	Saturation Vi	sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		in Muck Surface (C7)		Geomorphic	
Iron Deposits (B5)		her (Explain in Remark	s)	Shallow Aqui	
Inundation Visible on Aerial Im Water-Stained Leaves (B9)	agery (B7)			FAC-Neutral	
Field Observations:				Spriagnum n	noss (D8) <b>(LRR T, U)</b>
	s No	_ Depth (inches):			
		_ Depth (inches):			
		_ Depth (inches):		Hydrology Presen	t? Yes No
(includes capillary fringe)					
Describe Recorded Data (stream g	auge, monitoring	well, aerial photos, prev	vious inspections), if av	ailable:	
Remarks:					

	A1 1 1	ants.	T		t:
Free Stratum (Plot size:)		Dominant Indicator Species? Status			
·			<ul> <li>Number of Dominant S</li> <li>That Are OBL, FACW,</li> </ul>		(A)
				· ·	(/ //
					(B)
			Opecies Across Air Str		(D)
			Percent of Dominant S		(A /D
			That Are OBL, FACW,	or FAC:	(A/B)
			Prevalence Index wo	rksheet:	
			Total % Cover of:	Multiply	y by:
			OBL species	x 1 =	
500/ 51 1		Total Cover	FACW species		
50% of total cover:	20% of	total cover:	FAC species		
apling/Shrub Stratum (Plot size:)			FACU species		
				x 5 =	
			Column Totals:	(A)	(b)
			- Prevalence Index	= B/A = _	
				Hydrophytic Vegeta	ation
			3 - Prevalence	Index 3.0 <sup>1</sup>	
		Total Cover	<del></del>	lydrophytic Vegeta	tion¹ (Explain
50% of total cover:		total cover:		.,	(_/,p.c
			Tiee – Woody plants,	urbed or problema: egetation Strata: excluding vines, 3 i	n. (7.6 cm) oi
			more in diameter at broken height.	east neight (DBH),	regardless of
·			Sapling/Shrub – Woo than 3 in. DBH and gre		
			- I than 3 iii. DBH and gre	ater than 3.20 it (1	III) tall.
			- Herb – All herbaceous		
			of size, and woody pla	nts less than 3.28 f	t tall.
0			Woody vine – All woo	dy vines greater tha	an 3.28 ft in
1			height.		
2			-		
	=	Total Cover			
50% of total cover:	20% of	total cover:	_		
Voody Vine Stratum (Plot size:)					
•			_		
			_		
·					
			I hadronkadio		
		Total Cover	- Hydrophytic Vegetation		
				es No	
	ZU% ()I	total cover:	_		

SOIL	Sampling Point:
SOIL	Sampling Point:

Fype: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.  Fype: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.  Fyelyvalue Below Surface (S8) (LRR S, T, U)  istic Epipedon (A2)  lack Histic (A3)  ydrogen Sulfide (A4)  yers (A5)  Organic Bodies (A6) (LRR P, T, U)  5 cm Mucky Mineral (A7) (LRR P, T, U)  1 cm Muck (A10) (LRR P, S, T)  Polyvalue Below Surface (S8) (LRR S, T, U)  1 cm Muck (A10) (LRR S)  Reduced Vertic (F18) (outside MLRA 150)  Piedmont Floodplain Soils (F19) (LRR P, S, T)  Organic Bodies (A6) (LRR P, T, U)  Depleted Matrix (F2)  Muck Presence (A8) (LRR U)  1 cm Muck (A9) (LRR P, T)  Wow Dark Surface (A11)  hick Dark Surface (A11)  hick Dark Surface (A12)  Sandy Mucky Mineral (S1) (LRR 0, S)  Delta Ochric (F13) (LRR 0, T, U)  Sandy Mucky Mineral (S1) (LRR 0, S)  Delta Ochric (F17) (MLRA 150)  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Piedmont Floodplain Soils (F19) (LRR P, T, U)  Other (Explain in Remarks)  ow tetland hydrology must be present, unless disturbed or problematic.  Sandy Gleyed Matrix (S4)  Sandy Redox (S5)  Stripped Matrix (S6)  ark Surface (S7) (LRR P, S, T, everticative Layer (if observed):  Type:  Depth (inches):  Hydric Soil Present? Yes No	Depth _	Matrix		Features			
Fype: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.    Fype: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.   2	(inches)	Color (moist) %	Color (moist)	% Type <sup>1</sup>	Loc <sup>2</sup>	<u> Fexture</u>	Remarks
Fype: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.    Fype: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.   2	<u> </u>						
Fype: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.    Fype: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.   2	_						
ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)    Polyvalue Below Surface (S8) (LRR S, T, U)							
ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)    Polyvalue Below Surface (S8) (LRR S, T, U)							
ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)    Polyvalue Below Surface (S8) (LRR S, T, U)	-						
ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)    Polyvalue Below Surface (S8) (LRR S, T, U)							
ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)    Polyvalue Below Surface (S8) (LRR S, T, U)							
ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)    Polyvalue Below Surface (S8) (LRR S, T, U)			_				
ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)    Polyvalue Below Surface (S8) (LRR S, T, U)	-						
ydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)    Polyvalue Below Surface (S8) (LRR S, T, U)			M-Dadwaad Matrix MC	-Maakad Cand Cr		21	DI - Dana Lining M-Matrix
Polyvalue Below Surface (S8) (LRR S, T, U)							
istic Epipedon (A2)	iyanc son inc	ilicators. (Applicable to a					•
Loamy Mucky Mineral (F1) (LRR O)  gydrogen Sulfide (A4)  gydroyel Author (BADA)  gydroyel Autho	<del>_</del>						. , .
yers (A5)					R O) _		
Organic Bodies (A6) (LRR P, T, U) Redox Dark Surface (F6) (MLRA 153B)  5 cm Mucky Mineral (A7) (LRR P, T, U) Depleted Dark Surface (F7) ent Material (TF2)  Muck Presence (A8) (LRR U) Redox Depressions (F8) Very Shallow Dark Surface (TF12)  1 cm Muck (A9) (LRR P, T) Marl (F10) (LRR U) Other (Explain in Remarks)  ow Dark Surface (A11) Depleted Ochric (F11) (MLRA 151)  hick Dark Surface (A12) Iron-Manganese Masses (F12) (LRR O, P, T) Indicators of hydrophytic vegetation and Coast Prairie Redox (A16) (MLRA 150A) Umbric Surface (F13) (LRR P, T, U) wetland hydrology must be present, Sandy Mucky Mineral (S1) (LRR O, S) Delta Ochric (F17) (MLRA 151) unless disturbed or problematic.  Sandy Gleyed Matrix (S4) Reduced Vertic (F18) (MLRA 150A, 150B)  Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 149A)  Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)  ark Surface (S7) (LRR P, S, T, Hydric Soil Present? Yes No Depth (inches):  Type:  Depth (inches):  Hydric Soil Present? Yes No Depted Dark Surface (F6) Mark Surface (F7)  ent Material (TF2)  en	ydrogen :	Sulfide (A4)			_		. , , ,
	_	• ' '			-		
Muck Presence (A8) (LRR U) Redox Depressions (F8) Very Shallow Dark Surface (TF12)  1 cm Muck (A9) (LRR P, T) Marl (F10) (LRR U) Other (Explain in Remarks)  ow Dark Surface (A11) Depleted Ochric (F11) (MLRA 151)  hick Dark Surface (A12) Iron-Manganese Masses (F12) (LRR O, P, T) Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.  Sandy Mucky Mineral (S1) (LRR O, S) Delta Ochric (F17) (MLRA 151) unless disturbed or problematic.  Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 149A)  Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)  Type:  Depth (inches): Hydric Soil Present? Yes No	-					(MLF	
	5 cm Muck	y Mineral (A7) (LRR P, T, I	U) Depleted Darl	k Surface (F7)	=		
ow Dark Surface (A11)	Muck Pres	ence (A8) <b>(LRR U)</b>			_		
hick Dark Surface (A12)	1 cm Muck	(A9) <b>(LRR P, T)</b>	Marl (F10) (LI	RR U)	_	Other (	(Explain in Remarks)
Coast Prairie Redox (A16) (MLRA 150A) Umbric Surface (F13) (LRR P, T, U) wetland hydrology must be present, Sandy Mucky Mineral (S1) (LRR O, S) Delta Ochric (F17) (MLRA 151) unless disturbed or problematic Sandy Gleyed Matrix (S4) Reduced Vertic (F18) (MLRA 150A, 150B) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 149A) Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) ark Surface (S7) (LRR P, S, T, restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No		ow Dark Surface (A11)	Depleted Och	ric (F11) (MLRA 1	51)		
Sandy Mucky Mineral (S1) (LRR O, S) Delta Ochric (F17) (MLRA 151) unless disturbed or problematic Sandy Gleyed Matrix (S4) Reduced Vertic (F18) (MLRA 150A, 150B) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 149A) Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) ark Surface (S7) (LRR P, S, T, Restrictive Layer (if observed): Type: Depth (inches): Hydric Soil Present? Yes No	hick Dark	Surface (A12)	Iron-Mangane	ese Masses (F12) (	LRR O, P, T)	<sup>3</sup> Indic	ators of hydrophytic vegetation and
Sandy Gleyed Matrix (S4) Reduced Vertic (F18) (MLRA 150A, 150B) Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 149A) Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) ark Surface (S7) (LRR P, S, T,  testrictive Layer (if observed):  Type: Depth (inches): Hydric Soil Present? Yes No	Coast Prai	rie Redox (A16) (MLRA 15	<b>0A)</b> Umbric Surface	ce (F13) <b>(LRR P, T</b>	', U)	wet	land hydrology must be present,
Sandy Redox (S5) Piedmont Floodplain Soils (F19) (MLRA 149A) Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D) ark Surface (S7) (LRR P, S, T,  lestrictive Layer (if observed):  Type: Depth (inches): Hydric Soil Present? Yes No	Sandy Mud	cky Mineral (S1) (LRR O, S	) Delta Ochric (	(F17) <b>(MLRA 151)</b>		unle	ess disturbed or problematic.
Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)  ark Surface (S7) (LRR P, S, T,  destrictive Layer (if observed):  Type: Depth (inches): Hydric Soil Present? Yes No	Sandy Gle	yed Matrix (S4)	Reduced Vert	tic (F18) (MLRA 15	0A, 150B)		
Stripped Matrix (S6) Anomalous Bright Loamy Soils (F20) (MLRA 149A, 153C, 153D)  ark Surface (S7) (LRR P, S, T,  destrictive Layer (if observed):  Type: Depth (inches): Hydric Soil Present? Yes No							
ark Surface (S7) (LRR P, S, T, lestrictive Layer (if observed):  Type:  Depth (inches): Hydric Soil Present? Yes No	-						, 153D)
Type: Hydric Soil Present? Yes No				• , ,	, ,	· ·	,
Type:            Depth (inches):         Hydric Soil Present? Yes No							
Depth (inches): Hydric Soil Present? Yes No							
	• • • • • • • • • • • • • • • • • • • •						
emarks:	Depth (inche	es):			H;	ydric Soil	Present? Yes No
	Remarks:						

Project/Site:		City/C	ounty:		Sampling Date:
Applicant/Owner:				State:	Sampling Point:
					Slope (%):
					Datum:
Soil Map Unit Name:					
Are climatic / hydrologic condition					
Are Vegetation, Soil					resent? YesNo
Are Vegetation, Soil	, or Hydrology	naturally problema	atic? (If needed,	, explain any answe	rs in Remarks.)
SUMMARY OF FINDING	S - Attach sit	e map showing sam	pling point locati	ions, transects	, important features, etc.
Hydrophytic Vegetation Prese	nt? Ves	No			
Hydric Soil Present?	·	No	Is the Sampled Area		
Wetland Hydrology Present?		No	within a Wetland?	Yes	No
Remarks:					
HYDROLOGY					
Wetland Hydrology Indicato	re:			Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum o		heck all that annly)		Surface Soil	
Surface Water (A1)	-	Aquatic Fauna (B13)			getated Concave Surface (B8)
High Water Table (A2)		Marl Deposits (B15) (LRF	S (1)	Drainage Pat	
Saturation (A3)		Hydrogen Sulfide Odor (C		Moss Trim Li	
Water Marks (B1)		Oxidized Rhizospheres a			Water Table (C2)
Sediment Deposits (B2)		Presence of Reduced Iro		Crayfish Burr	
Drift Deposits (B3)		Recent Iron Reduction in			sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		Thin Muck Surface (C7)		Geomorphic	Position (D2)
Iron Deposits (B5)	_	Other (Explain in Remark	is)	Shallow Aqui	tard (D3)
Inundation Visible on Aeri	al Imagery (B7)			FAC-Neutral	
Water-Stained Leaves (B9	3)		<b>,</b>	Sphagnum m	noss (D8) (LRR T, U)
Field Observations:					
Surface Water Present?		Depth (inches):			
Water Table Present?		Depth (inches):			
Saturation Present? (includes capillary fringe)	Yes No	Depth (inches):	Wetland	Hydrology Presen	t? Yes No
Describe Recorded Data (stre	am gauge, monitor	ing well, aerial photos, pre	vious inspections), if a	/ailable:	
Remarks:					
İ					

EGETATION (Four Strata) – Use scientific n			Sampling Point:	
Free Stratum (Plot size:)		Dominant Indicator Species? Status	Dominance Test worksheet:	
			Number of Dominant Species That Are OBL, FACW, or FAC:	(A)
1			matale obe, i Aow, of i Ao.	(/\)
2			Total Number of Dominant	<b>(D)</b>
3			Species Across All Strata:	(B)
4			Percent of Dominant Species	
5.			That Are OBL, FACW, or FAC:	(A/B)
6			Prevalence Index worksheet:	
7			Total % Cover of: Multiply b	ov:
8			OBL species x 1 =	
		Total Cover	FACW species x 2 =	
50% of total cover:	20% of	total cover:	FAC species x 3 =	
Sapling/Shrub Stratum (Plot size:)			FACU species x 4 =	
1			UPL species x 5 =	
2				
3			Column Totals: (A)	(B)
4			Prevalence Index = B/A =	
5			Hydrophytic Vegetation Indicators:	
6			1 - Rapid Test for Hydrophytic Vegetati	ion
7			2 - Dominance Test is >50%	
8			3 - Prevalence Index 3.0 <sup>1</sup>	
		Total Cover	Problematic Hydrophytic Vegetation	on¹ (Explain)
50% of total cover:		total cover:		) ( <u>=</u> ,,p.o)
Herb Stratum (Plot size:)			1	
1			<sup>1</sup> Indicators of hydric soil and wetland hydrol be present, unless disturbed or problematic	
			Definitions of Four Vegetation Strata:	·•
2			Deminions of Four Vegetation Ottata.	
3			Tree – Woody plants, excluding vines, 3 in.	
4			more in diameter at breast height (DBH), re height.	gardless of
5				
6			Sapling/Shrub – Woody plants, excluding than 3 in DRU and greater than 3.39 ft (4.5)	
7			than 3 in. DBH and greater than 3.28 ft (1 n	ı) talı.
8			Herb – All herbaceous (non-woody) plants,	
9			of size, and woody plants less than 3.28 ft t	all.
10			Woody vine – All woody vines greater than	3.28 ft in
11			height.	
12				
	:	Total Cover		
50% of total cover:	20% of	total cover:		
Woody Vine Stratum (Plot size:)				
1				
2				
3				
4.				
5.			Hydrophytic	
		Total Cover	Vegetation	
50% of total cover:			Present? Yes No	
Remarks: (If observed, list morphological adaptations be	iow).			

SOIL	Sampling Point:
------	-----------------

Profile Desc	cription: (Describe t	to the depth nee	ded to docum	ent the i	ndicator	or confirm	the absence o	f indicators.)	
Depth	Matrix			c Features	<u> </u>				
(inches)	Color (moist)	<u>%</u> Co	lor (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks	_
_			_						
									-
									_
_									
		<del></del>							_
									_
									_
<sup>1</sup> Type: C=C	oncentration, D=Depl	etion, RM=Redu	ced Matrix, MS	=Masked	Sand Gr	ains.	<sup>2</sup> Location: F	PL=Pore Lining, M=Matrix.	
	Indicators: (Applica							or Problematic Hydric Soils <sup>3</sup> :	
Histosol	(A1)		Polyvalue Bel	low Surfac	ce (S8) <b>(L</b>	.RR S. T. U	1 cm Mu	ick (A9) <b>(LRR O)</b>	
	oipedon (A2)		Thin Dark Su					ick (A10) <b>(LRR S)</b>	
	stic (A3)		Loamy Mucky					d Vertic (F18) (outside MLRA 150A,	B)
	en Sulfide (A4)		Loamy Gleye			·	<del></del>	nt Floodplain Soils (F19) (LRR P, S,	-
	d Layers (A5)		Depleted Mat		-			ous Bright Loamy Soils (F20)	-
	Bodies (A6) (LRR P,	T, U)	Redox Dark S		6)			A 153B)	
5 cm Mu	ıcky Mineral (A7) (LR	R P, T, U)	Depleted Dar	k Surface	(F7)		Red Par	ent Material (TF2)	
Muck Pr	resence (A8) (LRR U		Redox Depre		3)		Very Sh	allow Dark Surface (TF12)	
1 cm Mu	ıck (A9) (LRR P, T)		Marl (F10) <b>(L</b> l	RR U)			Other (E	xplain in Remarks)	
-	d Below Dark Surface	e (A11)	Depleted Och				0		
	ark Surface (A12)		Iron-Mangane					tors of hydrophytic vegetation and	
	rairie Redox (A16) (N					, U)		nd hydrology must be present,	
-	Mucky Mineral (S1) (L	.RR O, S)	Delta Ochric				unles	s disturbed or problematic.	
-	Gleyed Matrix (S4)		Reduced Ver				0.4.\		
	Redox (S5) I Matrix (S6)		Piedmont Flo					(E2D)	
	rface (S7) <b>(LRR P, S</b>		Aliomaious B	ngni Loan	lly Solis (	rzu) (IVILK	A 149A, 153C, <sup>,</sup>	1930)	
	Layer (if observed):	, 1, 0)							
Type:	Layer (ii observea).								
	-I \.						Unadala Oali B	N-	
	ches):						Hydric Soil P	resent? Yes No	-
Remarks:									



#### Environmental Services, Inc.

12 January 2021

US Fish and Wildlife Service Ecological Services Field Office – Clear Lake 17629 El Camino Real, Suite 211 Houston, Texas 77058-3051

**RE:** Proposed Jefferson County Drainage District No. 6 Project:

**Ditch 505 Detention** 

China, Jefferson County, Texas

HJN 21005-001EA

Dear Sirs:

Jefferson County Drainage District No. 6 (DD6) implements and maintains drainage projects throughout the Districts' 486 square mile area located in Jefferson County and includes the cities of Beaumont, Bevil Oaks, China and Nome, Texas. DD6 also works with other jurisdictions to identify flood-prone areas, to encourage inclusion of flood-damage avoidance measures in land development. DD6 has applied to the Federal Emergency Management Agency (FEMA) for grant funding to assist with the improvement to drainage in and around the community of Fannett in Jefferson County. Environmental reviews are required under the National Environmental Policy Act (NEPA) and the Council on Environmental Quality Guidelines, 40 CFR Parts 1500 to 1508. This coordination letter is being provided for your agency's' response in conformance with NEPA procedures.

The project will involve the construction of an approximately 240-acre detention basin on Ditch 505 just north of Interstate 10 and south of Clubb Road (see project figures in Appendix 1). Additional culverts will also be installed under Clubb Road to improve conveyance into the detention basin from areas upstream. The detention basin will be excavated approximately 4 feet deep in addition to a detention berm placed around the lower portion of the basin to increase detention capacity. The primary benefit area is in the community of Fannett downstream of the proposed basin with benefits also realized upstream of the basin along Clubb Road.

Appendix 1 contains maps depicting the proposed drainage improvement project, including an aerial view of the project area and a topographic map of the project area. Land use of the surrounding area is agricultural and residential.

The site is generally characterized as grazing pasture with man-made ditches. Dominant vegetation includes pasture grasses including dallisgrass (*Paspalum dilatatum*), bermudagrass (*Cynodon dactylon*), and various weeds including deep-rooted sedge (*Cyperus* entrerianus), ragweed (*Ambrosia* sp.), Brazilian vervain (*Verbena brasiliensis*), sumpweed (*Iva* annua). Scattered trees and shrubs including sugarberry (*Celtis laevigata*), sweetgum (*Liquidambar* styraciflua), Chinese tallow (*Triadica sebifera*), water oak (*Quercus nigra*), and yaupon (*Ilex vomitoria*) are present along portions of the ditches and periphery of the site. On-site photographs are provided in Appendix 2.



Federally listed threatened or endangered (T/E) species known to occur in Jefferson County include eastern black rail (*Laterallus jamaicensis* ssp. *Jamaicensis*), piping plover (*Charadrius melodus*), red knot (*Calidris canutus rufa*), West Indian manatee (*Trichechus manatus*), green sea turtle (*Chelonia mydas*), Atlantic hawksbill sea turtle (*Eretmochelys imbricata*), Kemp's ridley sea turtle (*Lepidochelys kempii*), leatherback sea turtle (*Dermochelys coriacea*), and loggerhead sea turtle (*Caretta caretta*) (IPAC, 2021 – Appendix 3).

Horizon observed no federally listed T/E species or potential habitats on or within the immediate vicinity of the project area. We believe that a "No Effect" finding is appropriate for this project. We understand that the Service does not reply in writing to No Effect determinations. Therefore, we are requesting herein whether your office has any additional information on the potential occurrence of listed T/E species in the project vicinity that we should consider in making a findings recommendation to FEMA.

Please review the attached figures and information concerning the proposed project to determine if the project is consistent with your agency's environmental regulations or policies. Please respond by letter at your earliest convenience. Your prompt attention to this matter would be greatly appreciated, as your signed concurrence letter is necessary to complete the application for grant funding from FEMA.

Please call me should you have any questions concerning this project or if I can be of any further assistance.

Sincerely,

For Horizon Environmental Services, Inc.

C. Lee Sherrod

Senior Project Manager



# APPENDIX 1

**PROJECT FIGURES** 



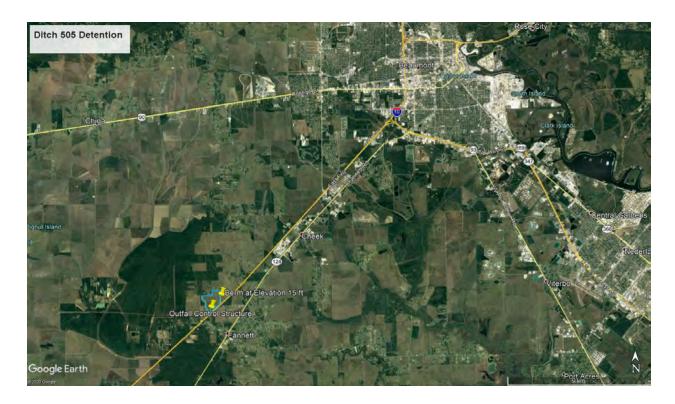


Figure 1: Location



Figure 2: Project





Figure 3: Topo



## **APPENDIX 2**

**PHOTOGRAPHS** 





PHOTO 1
Typical view of Property



PHOTO 3 Ditch 505



PHOTO 2
Typical view of Property



PHOTO 4 Ditch 505



# APPENDIX 3 IPAC SPECIES LIST



# United States Department of the Interior



#### FISH AND WILDLIFE SERVICE

Texas Coastal Ecological Services Field Office 4444 Corona Drive, Suite 215 Corpus Christi, TX 78411 Phone: (281) 286-8282 Fax: (281) 488-5882

http://www.fws.gov/southwest/es/TexasCoastal/ http://www.fws.gov/southwest/es/ES Lists Main2.html

In Reply Refer To: January 12, 2021

Consultation Code: 02ETTX00-2021-SLI-0825

Event Code: 02ETTX00-2021-E-01889 Project Name: Ditch 505 Detention

Subject: List of threatened and endangered species that may occur in your proposed project

location or may be affected by your proposed project

#### To Whom It May Concern:

The U.S. Fish and Wildlife Service (Service) field offices in Clear Lake, Tx, and Corpus Christi, Tx, have combined administratively to form the Texas Coastal Ecological Services Field Office. A map of the Texas Coastal Ecological Services Field Office area of responsibility can be found at: <a href="http://www.fws.gov/southwest/es/TexasCoastal/Map.html">http://www.fws.gov/southwest/es/TexasCoastal/Map.html</a>. All project related correspondence should be sent to the field office responsible for the area in which your project occurs. For projects located in southeast Texas please write to: Field Supervisor; U.S. Fish and Wildlife Service; 17629 El Camino Real Ste. 211; Houston, Texas 77058. For projects located in southern Texas please write to: Field Supervisor; U.S. Fish and Wildlife Service; P.O. Box 81468; Corpus Christi, Texas 78468-1468. For projects located in six counties in southern Texas (Cameron, Hidalgo, Starr, Webb, Willacy, and Zapata) please write: Santa Ana NWR, ATTN: Ecological Services Sub Office, 3325 Green Jay Road, Alamo, Texas 78516.

The enclosed species list identifies federally threatened, endangered, and proposed to be listed species; designated critical habitat; and candidate species that may occur within the boundary of your proposed project and/or may be affected by your proposed project.

New information from updated surveys, changes in the abundance and distribution of species, changes in habitat conditions, or other factors could change the list. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. The Service recommends that verification be completed by visiting the ECOS-IPaC website <a href="http://ecos.fws.gov/ipac/">http://ecos.fws.gov/ipac/</a> at regular intervals during project planning and implementation for updates to species list and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

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Candidate species have no protection under the Act but are included for consideration because they could be listed prior to the completion of your project. The other species information should help you determine if suitable habitat for these listed species exists in any of the proposed project areas or if project activities may affect species on-site, off-site, and/or result in "take" of a federally listed species.

"Take" is defined as harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. In addition to the direct take of an individual animal, habitat destruction or modification can be considered take, regardless of whether it has been formally designated as critical habitat, if the activity results in the death or injury of wildlife by removing essential habitat components or significantly alters essential behavior patterns, including breeding, feeding, or sheltering.

#### **Section 7**

Section 7 of the Act requires that all Federal agencies consult with the Service to ensure that actions authorized, funded or carried out by such agencies do not jeopardize the continued existence of any listed threatened or endangered species or adversely modify or destroy critical habitat of such species. It is the responsibility of the Federal action agency to determine if the proposed project may affect threatened or endangered species. If a "may affect" determination is made, the Federal agency shall initiate the section 7 consultation process by writing to the office that has responsibility for the area in which your project occurs.

**Is not likely to adversely affect** - the project may affect listed species and/or critical habitat; however, the effects are expected to be discountable, insignificant, or completely beneficial. Certain avoidance and minimization measures may need to be implemented in order to reach this level of effects. The Federal agency or the designated non-Federal representative should seek written concurrence from the Service that adverse effects have been eliminated. Be sure to include all of the information and documentation used to reach your decision with your request for concurrence. The Service must have this documentation before issuing a concurrence.

**Is likely to adversely affect -** adverse effects to listed species may occur as a direct or indirect result of the proposed action or its interrelated or interdependent actions, and the effect is not discountable, insignificant, or beneficial. If the overall effect of the proposed action is beneficial to the listed species but also is likely to cause some adverse effects to individuals of that species, then the proposed action "is likely to adversely affect" the listed species. An "is likely to adversely affect" determination requires the Federal action agency to initiate formal section 7 consultation with this office.

**No effect** - the proposed action will not affect federally listed species or critical habitat (i.e., suitable habitat for the species occurring in the project county is not present in or adjacent to the action area). No further coordination or contact with the Service is necessary. However, if the project changes or additional information on the distribution of listed or proposed species becomes available, the project should be reanalyzed for effects not previously considered.

Regardless of your determination, the Service recommends that you maintain a complete record of the evaluation, including steps leading to the determination of affect, the qualified personnel conducting the evaluation, habitat conditions, site photographs, and any other related articles.

Please be advised that while a Federal agency may designate a non-Federal representative to conduct informal consultations with the Service, assess project effects, or prepare a biological assessment, the Federal agency must notify the Service in writing of such a designation. The Federal agency shall also independently review and evaluate the scope and contents of a biological assessment prepared by their designated non-Federal representative before that document is submitted to the Service.

The Service's Consultation Handbook is available online to assist you with further information on definitions, process, and fulfilling Act requirements for your projects at: <a href="http://www.fws.gov/endangered/esa-library/pdf/esa\_section7">http://www.fws.gov/endangered/esa-library/pdf/esa\_section7</a> handbook.pdf

#### **Section 10**

If there is no federal involvement and the proposed project is being funded or carried out by private interests and/or non-federal government agencies, and the project as proposed may affect listed species, a section 10(a)(1)(B) permit is recommended. The Habitat Conservation Planning Handbook is available at: http://www.fws.gov/endangered/esa-library/pdf/HCP\_Handbook.pdf

#### **Service Response**

Please note that the Service strives to respond to requests for project review within 30 days of receipt, however, this time period is not mandated by regulation. Responses may be delayed due to workload and lack of staff. Failure to meet the 30-day timeframe does not constitute a concurrence from the Service that the proposed project will not have impacts to threatened and endangered species.

#### Proposed Species and/or Proposed Critical Habitat

While consultations are required when the proposed action may affect listed species, section 7(a) (4) was added to the ESA to provide a mechanism for identifying and resolving potential conflicts between a proposed action and proposed species or proposed critical habitat at an early planning stage. The action agency should seek conference from the Service to assist the action agency in determining effects and to advise the agency on ways to avoid or minimize adverse effect to proposed species or proposed critical habitat.

#### **Candidate Species**

Candidate species are species that are being considered for possible addition to the threatened and endangered species list. They currently have no legal protection under the ESA. If you find you have potential project impacts to these species the Service would like to provide technical assistance to help avoid or minimize adverse effects. Addressing potential impacts to these species at this stage could better provide for overall ecosystem healh in the local area and ay avert potential future listing.

Several species of freshwater mussels occur in Texas and four are candidates for listing under the ESA. The Service is also reviewing the status of six other species for potential listing under the ESA. One of the main contributors to mussel die offs is sedimentation, which smothers and suffocates mussels. To reduce sedimentation within rivers, streams, and tributaries crossed by a

project, the Service recommends that that you implement the best management practices found at: <a href="http://www.fws.gov/southwest/es/TexasCoastal/FreshwaterMussels.html">http://www.fws.gov/southwest/es/TexasCoastal/FreshwaterMussels.html</a>.

Candidate Conservation Agreements (CCAs) or Candidate Conservation Agreements with Assurances (CCAAs) are voluntary agreements between the Service and public or private entities to implement conservation measures to address threats to candidate species. Implementing conservation efforts before species are listed increases the likelihood that simpler, flexible, and more cost-effective conservation options are available. A CCAA can provide participants with assurances that if they engage in conservation actions, they will not be required to implement additional conservation measures beyond those in the agreement. For additional information on CCAs/CCAAs please visit the Service's website at <a href="http://www.fws.gov/endangered/what-we-do/cca.html">http://www.fws.gov/endangered/what-we-do/cca.html</a>.

#### **Migratory Birds**

The Migratory Bird Treaty Act (MBTA) implements various treaties and conventions for the protection of migratory birds. Under the MBTA, taking, killing, or possessing migratory birds is unlawful. Many may nest in trees, brush areas or other suitable habitat. The Service recommends activities requiring vegetation removal or disturbance avoid the peak nesting period of March through August to avoid destruction of individuals or eggs. If project activities must be conducted during this time, we recommend surveying for active nests prior to commencing work. A list of migratory birds may be viewed at <a href="http://www.fws.gov/migratorybirds/regulationspolicies/mbta/mbtandx.html">http://www.fws.gov/migratorybirds/regulationspolicies/mbta/mbtandx.html</a>.

The bald eagle (*Haliaeetus leucocephalus*) was delisted under the Act on August 9, 2007. Both the bald eagle and the goden eagle (*Aquila chrysaetos*) are still protected under the MBTA and BGEPA. The BGEPA affords both eagles protection in addition to that provided by the MBTA, in particular, by making it unlawful to "disturb" eagles. Under the BGEPA, the Service may issue limited permits to incidentally "take" eagles (e.g., injury, interfering with normal breeding, feeding, or sheltering behavior nest abandonment). For more information on bald and golden eagle management guidlines, we recommend you review information provided at http://www.fws.gov/midwest/eagle/pdf/NationalBaldEagleManagementGuidelines.pdf.

The construction of overhead power lines creates threats of avian collision and electrocution. The Service recommends the installation of underground rather than overhead power lines whenever possible. For new overhead lines or retrofitting of old lines, we recommend that project developers implement, to the maximum extent practicable, the Avian Power Line Interaction Committee guidelines found at <a href="http://www.aplic.org/">http://www.aplic.org/</a>.

Meteorological and communication towers are estimated to kill millions of birds per year. We recommend following the guidance set forth in the Service Interim Guidelines for Recommendations on Communications Tower Siting, Constructions, Operation and Decommissioning, found online at: <a href="http://www.fws.gov/habitatconservation/">http://www.fws.gov/habitatconservation/</a> communicationtowers.html, to minimize the threat of avian mortality at these towers. Monitoring at these towers would provide insight into the effectiveness of the minimization measures. We request the results of any wildlife mortality monitoring at towers associated with this project.

We request that you provide us with the final location and specifications of your proposed towers, as well as the recommendations implemented. A Tower Site Evaluation Form is also available via the above website; we recommend you complete this form and keep it in your files. If meteorological towers are to be constructed, please forward this completed form to our office.

More information concerning sections 7 and 10 of the Act, migratory birds, candidate species, and landowner tools can be found on our website at: <a href="http://www.fws.gov/southwest/es/">http://www.fws.gov/southwest/es/</a>
TexasCoastal/ProjectReviews.html.

#### **Wetlands and Wildlife Habitat**

Wetlands and riparian zones provide valuable fish and wildlife habitat as well as contribute to flood control, water quality enhancement, and groundwater recharge. Wetland and riparian vegetation provides food and cover for wildlife, stabilizes banks and decreases soil erosion.

These areas are inherently dynamic and very sensitive to changes caused by such activities as overgrazing, logging, major construction, or earth disturbance. Executive Order 11990 asserts that each agency shall provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial value of wetlands in carrying out the agency's responsibilities. Construction activities near riparian zones should be carefully designed to minimize impacts. If vegetation clearing is needed in these riparian areas, they should be re-vegetated with native wetland and riparian vegetation to prevent erosion or loss of habitat. We recommend minimizing the area of soil scarification and initiating incremental re-establishment of herbaceous vegetation at the proposed work sites. Denuded and/or disturbed areas should be re-vegetated with a mixture of native legumes and grasses.

Species commonly used for soil stabilization are listed in the Texas Department of Agriculture's (TDA) Native Tree and Plant Directory, available from TDA at P.O. Box 12847, Austin, Texas 78711. The Service also urges taking precautions to ensure sediment loading does not occur to any receiving streams in the proposed project area. To prevent and/or minimize soil erosion and compaction associated with construction activities, avoid any unnecessary clearing of vegetation, and follow established rights-of-way whenever possible. All machinery and petroleum products should be stored outside the floodplain and/or wetland area during construction to prevent possible contamination of water and soils.

Wetlands and riparian areas are high priority fish and wildlife habitat, serving as important sources of food, cover, and shelter for numerous species of resident and migratory wildlife. Waterfowl and other migratory birds use wetlands and riparian corridors as stopover, feeding, and nesting areas. We strongly recommend that the selected project site not impact wetlands and riparian areas, and be located as far as practical from these areas. Migratory birds tend to concentrate in or near wetlands and riparian areas and use these areas as migratory flyways or corridors. After every effort has been made to avoid impacting wetlands, you anticipate unavoidable wetland impacts will occur; you should contact the appropriate U.S. Army Corps of Engineers office to determine if a permit is necessary prior to commencement of construction activities.

If your project will involve filling, dredging, or trenching of a wetland or riparian area it may require a Clean Water Act Section 404 permit from the U.S. Army Corps of Engineers (COE).

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For permitting requirements please contact the U.S. Corps of Engineers, District Engineer, P.O. Box 1229, Galveston, Texas 77553-1229, (409) 766-3002.

#### **Beneficial Landscaping**

In accordance with Executive Order 13112 on Invasive Species and the Executive Memorandum on Beneficial Landscaping (42 C.F.R. 26961), where possible, any landscaping associated with project plans should be limited to seeding and replanting with native species. A mixture of grasses and forbs appropriate to address potential erosion problems and long-term cover should be planted when seed is reasonably available. Although Bermuda grass is listed in seed mixtures, this species and other introduced species should be avoided as much as possible. The Service also recommends the use of native trees, shrubs, and herbaceous species that are adaptable, drought tolerant and conserve water.

#### **State Listed Species**

The State of Texas protects certain species. Please contact the Texas Parks and Wildlife Department (Endangered Resources Branch), 4200 Smith School Road, Austin, Texas 78744 (telephone 512/389-8021) for information concerning fish, wildlife, and plants of State concern or visit their website at: <a href="http://www.tpwd.state.tx.us/huntwild/wild/wildlife\_diversity/texas\_rare\_species/listed\_species/">http://www.tpwd.state.tx.us/huntwild/wildlife\_diversity/texas\_rare\_species/listed\_species/</a>.

If we can be of further assistance, or if you have any questions about these comments, please contact 281/286-8282 if your project is in southeast Texas, or 361/994-9005, ext. 246, if your project is in southern Texas. Please refer to the Service consultation number listed above in any future correspondence regarding this project.

#### Attachment(s):

Official Species List

# **Official Species List**

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

**Texas Coastal Ecological Services Field Office** 4444 Corona Drive, Suite 215 Corpus Christi, TX 78411 (281) 286-8282

# **Project Summary**

Consultation Code: 02ETTX00-2021-SLI-0825 Event Code: 02ETTX00-2021-E-01889

Project Name: Ditch 505 Detention
Project Type: LAND - DRAINAGE

Project Description: Drainage/Flood Control Improvements

Project Location:

Approximate location of the project can be viewed in Google Maps: <a href="https://www.google.com/maps/@29.9441731,-94.25978748861814,14z">https://www.google.com/maps/@29.9441731,-94.25978748861814,14z</a>



Counties: Jefferson County, Texas

# **Endangered Species Act Species**

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries<sup>1</sup>, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. <u>NOAA Fisheries</u>, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

#### **Mammals**

NAME STATUS

#### West Indian Manatee Trichechus manatus

Threatened

There is **final** critical habitat for this species. The location of the critical habitat is not available.

This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements.

Species profile: https://ecos.fws.gov/ecp/species/4469

#### **Birds**

NAME STATUS

#### Eastern Black Rail Laterallus jamaicensis ssp. jamaicensis

Threatened

No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/10477">https://ecos.fws.gov/ecp/species/10477</a>

# Piping Plover *Charadrius melodus*

Threatened

 $Population: [At lantic \ Coast \ and \ Northern \ Great \ Plains \ populations] \ - \ Wherever \ found, \ except$ 

those areas where listed as endangered.

There is **final** critical habitat for this species. The location of the critical habitat is not available.

Species profile: <a href="https://ecos.fws.gov/ecp/species/6039">https://ecos.fws.gov/ecp/species/6039</a>

#### Red Knot Calidris canutus rufa

Threatened

No critical habitat has been designated for this species. Species profile: <a href="https://ecos.fws.gov/ecp/species/1864">https://ecos.fws.gov/ecp/species/1864</a>

## **Reptiles**

NAME

#### Green Sea Turtle Chelonia mydas

Threatened

Population: North Atlantic DPS

There is **final** critical habitat for this species. The location of the critical habitat is not available.

Species profile: <a href="https://ecos.fws.gov/ecp/species/6199">https://ecos.fws.gov/ecp/species/6199</a>

#### Hawksbill Sea Turtle Eretmochelys imbricata

Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.

Species profile: https://ecos.fws.gov/ecp/species/3656

#### Kemp's Ridley Sea Turtle *Lepidochelys kempii*

Endangered

There is **proposed** critical habitat for this species. The location of the critical habitat is not

available.

Species profile: <a href="https://ecos.fws.gov/ecp/species/5523">https://ecos.fws.gov/ecp/species/5523</a>

#### Leatherback Sea Turtle Dermochelys coriacea

Endangered

There is **final** critical habitat for this species. The location of the critical habitat is not available.

Species profile: https://ecos.fws.gov/ecp/species/1493

#### Loggerhead Sea Turtle Caretta caretta

Threatened

Population: Northwest Atlantic Ocean DPS

There is **final** critical habitat for this species. The location of the critical habitat is not available.

Species profile: <a href="https://ecos.fws.gov/ecp/species/1110">https://ecos.fws.gov/ecp/species/1110</a>

#### **Critical habitats**

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.