## Mcknight, Kristin M CIV (USA)

**From:** rrs@usace.army.mil
**Sent:** Wednesday, November 20, 2024 1:37 PM
**To:** jheredia@monarch.energy; kevin.alexander@westwoodps.com; Mcknight, Kristin M CIV (USA)
**Subject:** [Non-DoD Source] Department of the Army Delineation Report and Jurisdictional Determination Request: SWG-2024-00285 - Fairlane Green Hydrogen

The U.S. Army Corps of Engineers, Galveston District has assigned your Delineation Report and Jurisdictional Determination request:

File Number: SWG-2024-00285

Project Manager: Kristin M Mcknight, Kristin.M.Nelson@usace.army.mil, 409-766-3826

Please reference this file number in all correspondence and communication with us concerning this request.

The U.S. Army Corps of Engineers Regulatory program is committed to providing you with the highest level of public service. Your request will be processed in the order it was received, and the assigned project manager will contact you if any additional information is required to complete the review of your request.

General information about the U.S. Army Corps of Engineers' Regulatory Program is available on the Regulatory Request System homepage at: https://rrs.usace.army.mil

Information specific for your region can be found at the Galveston District website at: http://www.swg.usace.army.mil/Missions/Regulatory.aspx

This mailbox is not monitored. If you have any questions, please contact your assigned project manager directly.

U.S. Army Corps of Engineers (USACE)

# REQUEST FOR JURISDICTIONAL DETERMINATION (JD)

For use of this form, see Sec 404 CWA, Sec 10 RHA, Sec 103 MPRSA; the proponent agency is CECW-CO-R.

***Form Approved -***
***OMB No. 0710-0024***
**Expires** 11/30/2024

The Agency Disclosure Notice (ADN)

The Public reporting burden for this collection of information is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or burden reduction suggestions to the Department of Defense, Washington Headquarters Services, at whs.mc-alex.esd.mbx.dd-dod-information-collections@mail.mil. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.

**DATA REQUIRED BY THE PRIVACY ACT OF 1974**

**Authority** Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332.

**Principal Purpose** The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the review area that are or that may be subject to federal jurisdiction under the regulatory authorities referenced above.

**Routine Uses** This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice or FOIA request as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in any approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website.

**Disclosure** Submission of requested information is voluntary, however, if the information is not provided there may be some delay in processing your request. Failure to provide this information will not result in an adverse action.
System of Record Notice (SORN): The information received is entered into our permit tracking database and a SORN has been completed (SORN #A1145b) and may be accessed at the following website:
**http://dpcld.defense.gov/Privacy/SORNsIndex/DOD-wide-SORN-Article-View/Article/570115/a1145b-ce.aspx**

1. To (*District Name*): Galveston District

2. I am requesting a JD on property located at (*Street Address*):

City/Township/Parish: Surfside Beach County: Brazoria County State: TX

Acreage of Parcel/Review Area for JD: 173.467919

Section: Township: Range:

Latitude (*decimal degrees*): 28.9616439 ° Longitude (decimal degrees): -95.3995827 °

*(For linear projects, please include the center point of the proposed alignment.)*

3. Please attach a survey/plat map and vicinity map identifying location and review area for the JD.

4. ☐ I currently own this property. ☐ I plan to purchase this property.

☐ I am an agent/consultant acting on behalf of the requester.

☒ Other (*please explain*):

I am an agent/consultant acting on behalf of the applicant.

5. Reason for request: (*check as many as applicable*)

- [ ] I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all aquatic resources.
- [ ] I intend to construct/develop a project or perform activities on this parcel which would be designed to avoid all jurisdictional aquatic resources under Corps authority.
- [ ] I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps, and the JD would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process.
- [ ] I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps; this request is accompanied by my permit application and the JD is to be used in the permitting process.
- [ ] I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is included on the district Section 10 list and/or is subject to the ebb and flow of the tide.
- [ ] A Corps JD is required in order to obtain my local/state authorization.
- [ ] I intend to contest jurisdiction over a particular aquatic resource and request the Corps confirm that jurisdiction does/does not exist over the aquatic resource on the parcel.
- [ ] I believe that the site may be comprised entirely of dry land.
- [X] Other:

6. Type of determination being requested:

- [X] I am requesting an approved JD  I am requesting a preliminary JD
- I am requesting a "no permit required" letter as I believe my proposed activity is not regulated.
- I am unclear as to which JD I would like to request and require additional information to inform my decision.

7. Typed or Printed Name: Joan Heredia  Email: jheredia@monarch.energy

Primary #: +16195074130

Company Name: Monarch Energy

Address: 101 Cooper Street
STE 400
Santa Cruz, CA 95060

By signing below, you are indicating that you have the authority, or are acting as the duly authorized agent of a person or entity with such authority, to and do hereby grant Corps personnel right of entry to legally access the site if needed to perform the JD. Your signature shall be an affirmation that you possess the requisite property rights to request a JD on the subject property.

| Signature: Kevin Alexander | Date: 11/12/2024 |
|---|---|

**Appendix H.** Supporting Information:

| Document Type | Document Created Date | Document Label | Information Source/Citation | Uploaded file name |
|---|---|---|---|---|
| Map plan plot or plat | 2024-11-05 | Fairlane Green Hydrogen Site Layout | Monarch Energy | 24MH072-EM7-5002-Fairlane Site Layout.pdf |
| Aerial Photograph | 2024-09-25 | Historical Aerial Photographs | Historicalinfo.com | AerialPhotos.pdf |
| Site Photograph | 2024-10-30 | Culverts and Ditch Photographs | Westwood Professional Services | Culvert Photographs Surrounding Project Areas.pdf |
| Other Information | 2024-08-19 | Wetland Delineation Report - covers area greater than NPR request area | Westwood Professional Services | Fairlane_WetlandReport_Assembled_20240806.pdf |
| Other Information | 2024-11-05 | Project Description | Monarch Energy | Monarch Energy - Fairlane Project Description - 2024.11.05.docx |
| Map plan plot or plat | 2024-11-12 | Project Boundary and Limits of Disturbance | Westwood Professional Services | Updated project boundary and limits of disturbance.pdf |
| | | | | |
| | | | | |
| | | | | |

WETLAND DELINEATION REPORT

# Fairlane Green Hydrogen Project

## Brazoria County, Texas

**AUGUST 6, 2024**

**PREPARED FOR:**

MONARCH ENERGY

**PREPARED BY:**

Westwood

Westwood

# Wetland Delineation Report

## Fairlane Green Hydrogen Project

Brazoria County, Texas

**Prepared For:**

Monarch Energy
101 Cooper St.
Santa Cruz, CA 95060

**Prepared By:**

Westwood Professional Services
2901 Dallas Parkway, Suite 400
Plano, TX 75093
(952) 937-5150

Project Number: R0050939.00
Date: August 6, 2024

# Table of Contents



# Tables



# Figures



# Exhibits



# Appendices

# 1.0 Purpose

This report and the attached exhibits and appendices constitute the wetland delineation report for the Fairlane Green Hydrogen Project located in Brazoria County, Texas. A field delineation of wetlands and waters was completed on approximately 173 acres of land (hereafter referred to as the "Delineation Area"). This report provides the required documentation for wetland boundary determinations in conformance with the United States Army Corps of Engineers (USACE) Wetlands Delineation Manual (Environmental Laboratory, Waterways Experiment Station, 1987) and the Regional Supplement to the USACE Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Supplement (US Army Engineer Research and Development Center, 2010).

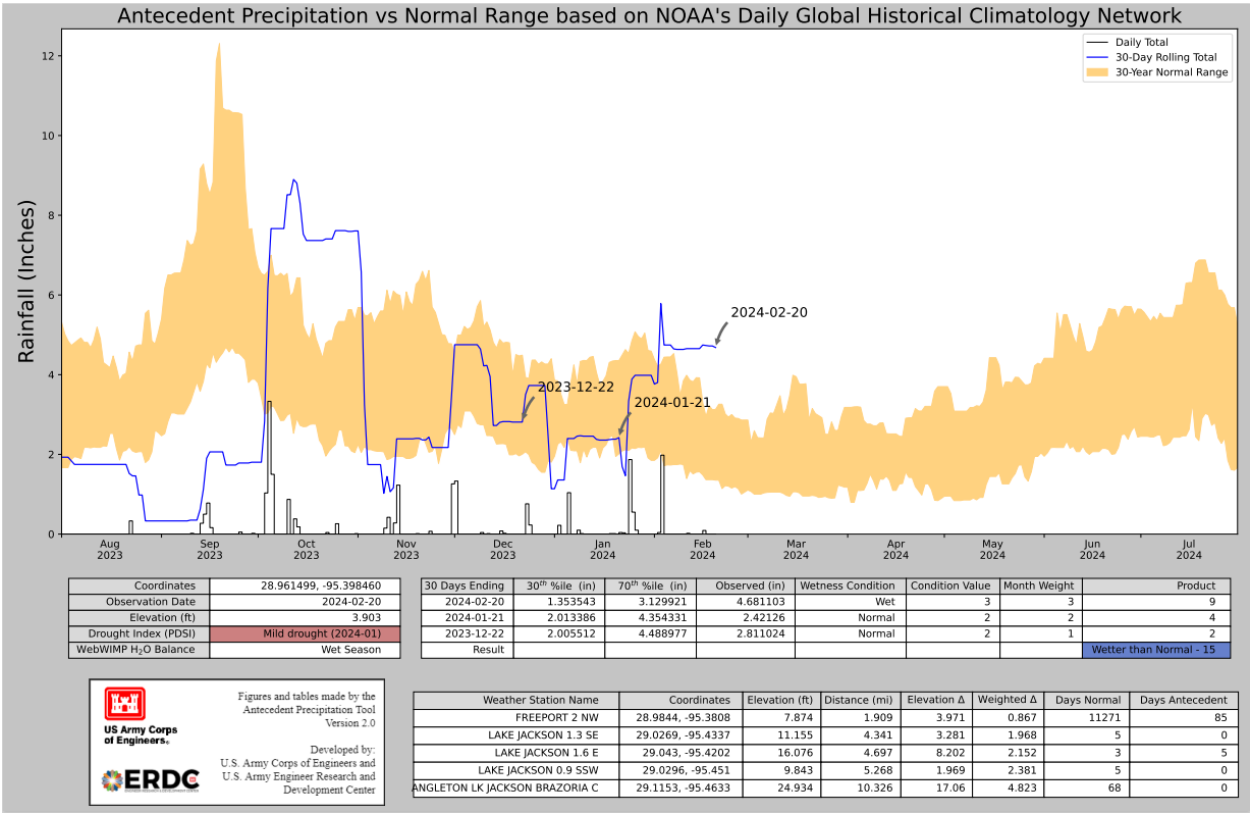
# 2.0 Site Location and Description

The Delineation Area consists of approximately 173 acres located along State Highway 36, near the city of Freeport, west of the Brazos River, located in Brazoria County, Texas (**Exhibit 1**). The Delineation Area consists of Emergent Herbaceous Wetlands, Barren Land cover and Developed land with Open Space, Low Intensity and Medium Intensity (Dewitz *et al.*, 2021). An industrial concrete operation called OnSite Concrete Solutions at 3525 County Road is located on the northeast side of the Delineation Area. Topography within the Delineation Area consists of microtopography. Land use surrounding the Delineation Area consists of sparce residential homes, industrial operations, and freshwater emergent wetlands.

The Delineation Area is situated within the Floodplains and Low Terraces ecoregion (Level IV Ecoregion 34c) and borders north of the Mid-Coast Barrier Islands and Coastal Marshes ecoregion (Level IV Ecoregion 34h) of the Western Gulf Coastal Plain (U.S. Environmental Protection Agency, 2013). The Delineation Area land cover is emergent herbaceous wetland with an area of barren land (rock/sand/clay) in the northwest corner where the concrete operation is located. A raised road along the eastern side of the Delineation Area is denoted as Developed, Open Space. Current road construction work near the southeast portion of the Delineation Area has placed removed concrete on top of fill resulting in an area characterized as Developed, Low Intensity and Medium Intensity land use (Dewitz and USGS, 2021). Examples of vegetative cover in the Delineation Area consisted of Bermuda grass (*Cynodon dactylon*), knotgrass (*Paspalum denticulatum*), hairy buttercup (*Ranunculus sardous),* Texas tickseed (*Coreopsis linifolia*), fringe-leaf wild petunia (*Ruellia humilis*), knotted spike-rush (*Eleocharis interstincta*), groundseltree (*Baccharis halimifolia*), and bladder pod (*Sesbania vesicaria*).

## 2.1 Antecedent Precipitation

Antecedent precipitation data was available at the site for the 90 days prior to both the February 20, 2024, and July 2, 2024, site visits using Antecedent Precipitation Tool (APT) developed by the USACE. Results from this analysis indicate antecedent precipitation was wetter than normal for the February 20, 2024, site visit and normal for the July 2, 2024, site visit. Figure 2.1 and Figure 2.1a constitute the APT results used to determine antecedent precipitation for the 90 days prior to the delineations.

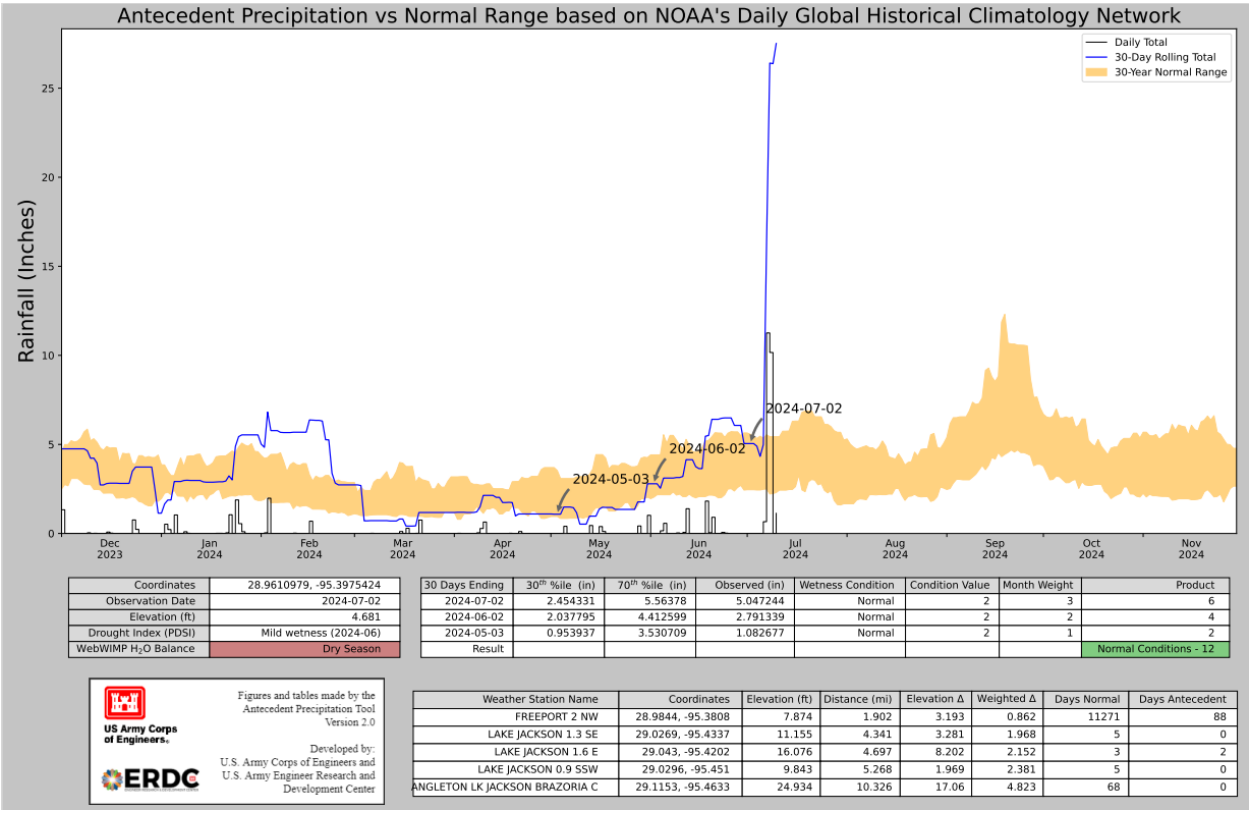



| | |
|---|---|
| Coordinates | 28.961499, -95.398460 |
| Observation Date | 2024-02-20 |
| Elevation (ft) | 3.903 |
| Drought Index (PDSI) | Mild drought (2024-01) |
| WebWIMP $H_2O$ Balance | Wet Season |

| 30 Days Ending | 30th %ile (in) | 70th %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product |
|---|---|---|---|---|---|---|---|
| 2024-02-20 | 1.353543 | 3.129921 | 4.681103 | Wet | 3 | 3 | 9 |
| 2024-01-21 | 2.013386 | 4.354331 | 2.42126 | Normal | 2 | 2 | 4 |
| 2023-12-22 | 2.005512 | 4.488977 | 2.811024 | Normal | 2 | 1 | 2 |
| Result | | | | | | | Wetter than Normal - 15 |

| Weather Station Name | Coordinates | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days Normal | Days Antecedent |
|---|---|---|---|---|---|---|---|
| FREEPORT 2 NW | 28.9844, -95.3808 | 7.874 | 1.909 | 3.971 | 0.867 | 11271 | 85 |
| LAKE JACKSON 1.3 SE | 29.0269, -95.4337 | 11.155 | 4.341 | 3.281 | 1.968 | 5 | 0 |
| LAKE JACKSON 1.6 E | 29.043, -95.4202 | 16.076 | 4.697 | 8.202 | 2.152 | 3 | 5 |
| LAKE JACKSON 0.9 SSW | 29.0296, -95.451 | 9.843 | 5.268 | 1.969 | 2.381 | 5 | 0 |
| ANGLETON LK JACKSON BRAZORIA C | 29.1153, -95.4633 | 24.934 | 10.326 | 17.06 | 4.823 | 68 | 0 |

*Figure 2.1: Antecedent Precipitation Tool V2.0 Graph for Fairlane Green Hydrogen Project in Brazoria County, Texas, for December 22, 2023, to February 20, 2024.*




| | |
|---|---|
| Coordinates | 28.9610979, -95.3975424 |
| Observation Date | 2024-07-02 |
| Elevation (ft) | 4.681 |
| Drought Index (PDSI) | Mild wetness (2024-06) |
| WebWIMP $H_2O$ Balance | Dry Season |

| 30 Days Ending | 30th %ile (in) | 70th %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product |
|---|---|---|---|---|---|---|---|
| 2024-07-02 | 2.454331 | 5.56378 | 5.047244 | Normal | 2 | 3 | 6 |
| 2024-06-02 | 2.037795 | 4.412599 | 2.791339 | Normal | 2 | 2 | 4 |
| 2024-05-03 | 0.953937 | 3.530709 | 1.082677 | Normal | 2 | 1 | 2 |
| Result | | | | | | | Normal Conditions - 12 |

| Weather Station Name | Coordinates | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days Normal | Days Antecedent |
|---|---|---|---|---|---|---|---|
| FREEPORT 2 NW | 28.9844, -95.3808 | 7.874 | 1.902 | 3.193 | 0.862 | 11271 | 88 |
| LAKE JACKSON 1.3 SE | 29.0269, -95.4337 | 11.155 | 4.341 | 3.281 | 1.968 | 5 | 0 |
| LAKE JACKSON 1.6 E | 29.043, -95.4202 | 16.076 | 4.697 | 8.202 | 2.152 | 3 | 2 |
| LAKE JACKSON 0.9 SSW | 29.0296, -95.451 | 9.843 | 5.268 | 1.969 | 2.381 | 5 | 0 |
| ANGLETON LK JACKSON BRAZORIA C | 29.1153, -95.4633 | 24.934 | 10.326 | 17.06 | 4.823 | 68 | 0 |

*Figure 2.1a: Antecedent Precipitation Tool V2.0 Graph for Fairlane Green Hydrogen Project in Brazoria County, Texas, for May 3, 2024, to July 2, 2024.*

# 3.0 Field Delineation Methodology

## 3.1 Mapping

Prior to delineating wetland boundaries in the field, Westwood reviewed the U.S. Geological Survey (USGS) topography (**Exhibit 1**), the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI), the USGS National Hydrography Dataset (NHD) Flowlines and Waterbodies, the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) (**Exhibit 2**), and the Natural Resource Conservation Service (NRCS) Soil Survey Geographic database (SSURGO2) for Brazoria County (Accessed 2024) (**Exhibit 3**).

## 3.2 Wetland Delineation Methodology

Field delineations were conducted on February 20, 2024, and July 2, 2024, by a Wetland Scientist from Westwood using the level two routine determination methods set forth in the USACE Wetlands Delineation Manual (Environmental Laboratory, Waterways Experiment Station 1987) and the supplemental methods set forth in the regional supplement to the USACE Wetland Delineation Manual: Atlantic and Gulf Coastal Plain manual (US Army Engineer Research and Development Center, 2010). Photographs of wetlands and Atlantic and Gulf Coastal Plains data forms including soils, vegetation, and hydrology are included in **Appendix A** of this report. Non-wetland and Upland Atlantic and Gulf Coastal Plains data forms and photographs are included in **Appendix B**.

Wetlands were classified according to Wetlands of the United States (U.S. Fish and Wildlife Service Circular 39; Shaw and Fredine, 1971) and Wetlands and Deepwater Habitats of the United States (FWS/OBS Publication 79/31; Cowardin *et al.*, 1979). Common and scientific names for vegetation, identified in this report and on the attached data forms, generally correspond with the nomenclature used in the 2024 National Wetland Plant List (USACE 2024). Plant indicator status was based upon the Atlantic and Gulf Coastal Plain rankings. Species dominance for vegetation measurements was based on the percent coverage visually estimated within a 30-foot radius of the sample point location for the tree and vine layers, a 15-foot radius for the shrub layer, and a five-foot radius for the herbaceous layer. Delineated wetland boundaries were mapped in the field using a Panasonic Toughbook® tablet and EOS Arrow 100® global positioning unit (GPS) capable of sub-meter accuracy (**Exhibit 4**).

## 3.3 Ordinary High Water Mark Determinations

One watercourse, created by connecting culverts, was delineated within the Delineation Area. Drainages within the Delineation Area were considered non-wetlands as they may not exhibit all parameters required for regulatory wetlands (i.e., predominance of hydrophytes, hydric soils, and jurisdictional hydrology). Accordingly, their boundary was delineated in the field by documenting their "ordinary high water marks" (OHWMs), as determined according to the USACE Regulatory Guidance Letter No. 05-05 (U.S. Army Corps of Engineers, 2005).

USACE regulations set forth at 33 CFR 328.3(e) defines the OHWM for purposes of Clean Water Act lateral jurisdiction:

> The term "ordinary high-water mark" means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

USACE Regulatory Guidance Letter No. 05-05 (U.S. Army Corps of Engineers, 2005) indicates the following physical characteristics are deemed reasonably reliable, and therefore presence of these characteristics was evaluated in the field when making OHWM determinations for drainages in the Delineation Area:

- Natural line impressed on the bank
- Changes in the character of soil
- Presence of litter and debris
- Vegetation matted down, bent, or absent
- Leaf litter disturbed or washed away
- Deposition
- Bed and banks
- Change in plant community
- Shelving
- Destruction of terrestrial vegetation
- Wracking
- Sediment sorting
- Scour
- Multiple observed flow events
- Water staining

Delineated watercourse boundaries were mapped in the field using a Panasonic Toughbook® tablet and EOS Arrow 100® unit capable of sub-meter accuracy (**Exhibit 4**). Datasheets and photographs documenting watercourse characteristics are included in **Appendix C**.

# 4.0 Results

## 4.1 Mapping

The USGS Quad mapping shows microtopography throughout the Delineation Area with an elevation of two to six feet above sea level (**Exhibit 1**). Land cover in the Delineation Area predominately consists of pasture with emergent herbaceous wetlands and shrub/scrub and herbaceous uplands in the northeast corner and along the developed area of low intensity along County Road 217. Upland developed areas of low and medium intensity also include filled land in the southeast corner.

The NWI mapping shows the Delineation Area is classified as a freshwater emergent wetland and a NHD waterbody (**Exhibit 2**).

FEMA data indicates that the Delineation Area is located within the mapped 100-year floodplain (Zone AE).

The Brazoria County Soil Survey identifies soils mapped within the Delineation Area (**Exhibit 3**). A summary of mapped soil units within the Delineation Area is included in **Table 4.1**. A majority of the Delineation Area is located within predominately non-hydric soil units, however, the remaining portions of the Delineation Area are located within hydric soil units.

***Table 4.1 – Hydric Soil Rating***

| Mapped Unit Symbol | Map Unit Name | Hydric Rating | Acres in Project Area | Percent of Project Area |
|---|---|---|---|---|
| **36** | Pledger clay, 0 to 1 percent slopes, rarely flooded | 1 | 94.0 | 54.3% |
| **42** | Velasco clay, 0 to 1 percent slopes, frequently flooded | 100 | 66.0 | 38.4% |
| **39** | Surfside clay, 0 to 1 percent slopes, occasionally flooded | 100 | 12.8 | 7.3% |
| **Total** | | | 172.8 | **100%** |

## 4.2 Field Wetland and Watercourse Delineation Results

On February 20, 2024, Westwood delineated two (2) wetland features totaling 74.1 acres, one (1) pond totaling 0.04 acres and one (1) watercourse feature totaling 0.12 acres. On July 2, 2024, Westwood delineated four (4) wetland features totaling 27.15 acres, adding 23.88 acres to the previously delineated WB-01, 0.83 acres to the previously delineated WB-02, and one (1) pond totaling 0.49 acres. Summaries of the field delineated wetlands are included below in **Tables 4.2.1** and the watercourse is included below in **4.2.2**. The location of the delineated wetlands and watercourse are shown in **Exhibit 4**. Locations that are non-wetland are shown in **Exhibit 5**.

### 4.2.1 Wetlands

Westwood delineated five (5) wetlands totaling 101.25 acres and two (2) ponds totaling 0.53 acres (**Exhibit 4**). These features are summarized in **Table 4.2.1** below. PO-02 was determined to be an excavated pond due to its historical change in shape and appearance in 2014. Before 2014 the area appeared to be a deep wetland area characterized as PEM1C. Photographs of the delineated feature and data forms documenting wetland characteristics of the sample point locations can be found in **Appendix A.** Non-wetland and Upland photographs and data forms can be found in **Appendix B**. Additional Photo Point photographs of the area can be found in **Appendix D**.

***Table 4.2.1 – Wetland and Pond Characteristics Summary Table***

| Wetland ID | Area (Acres) | Area (SQFT) | Mapped on NWI | Cowardin | Latitude | Longitude |
|---|---|---|---|---|---|---|
| **WB-01** | 47.383 | 2,064,014 | Yes | PEM1C PEM1A | 28.958109 | -95.394349 |
| **WB-02** | 51.4 | 2,238,948 | Yes | PEM1J | 28.960590 | -95.398811 |
| **WB-04** | 1.08 | 47,016 | Yes | PEM1J | 28.963444 | -95.401743 |
| **WB-05** | 0.55 | 23,836 | Yes | PEM1Adx | 28.959721 | -95.392483 |
| **WB-06** | 0.84 | 36,728 | Yes | PEM1Adx | 28.959722 | -95.392335 |
| **PO-01** | 0.04 | 1,742 | No | PUBHx | 28.962684 | -95.395035 |
| **PO-02** | 0.49 | 21,344 | Yes | PUBHx | 28.960209 | -95.394180 |

*Wetland Classes*: PEM1C - Palustrine Emergent, Persistent, Seasonally Flooded; PEM1A – Palustrine Emergent, Persistent, Temporarily Flooded; PEM1J – Palustrine Emergent, Persistent, Intermittently Flooded; PEM1Adx – Palustrine Emergent, Persistent, Temporarily Flooded, Partially Drained/Ditched, Excavated; PUBHx – Palustrine, Unconsolidated Bottom, Permanently Flooded, Excavated.

### 4.2.2 Watercourses

Westwood delineated one (1) watercourse within the Delineation Area (refer to **Table 4.2.2** for additional information). These features contained characteristics consistent with an OHWM. Additional information and photographs documenting the OHWM characteristics of the delineated watercourses are included in **Appendix C** of this report.

***Table 4.2.2 – Watercourse Characteristics Summary Table***

| Watercourse ID | Area (Acres) | Linear Feet | NHD Name | Hydrology Regime | Cowardin | Latitude | Longitude |
|---|---|---|---|---|---|---|---|
| **WC-01** | 0.12 | 464 | Unnamed | Ephemeral | R6 | 28.961776 | -95.394731 |

*Watercourse Classes*: R6 – Riverine, Ephemeral.

### 4.2.3 Non-Wetlands

A total of seven (7) non-wetland sample points were gathered within the Delineation Area, each were either lacking hydric soils, hydrology, or hydrophytic vegetation. The location of each non-wetland point and other non-wetland features are referenced in **Exhibit 5**. Data forms and photographs were gathered at each non-wetland sample location and are included in **Appendix B**.

# 5.0 Conclusions

Westwood delineated five (5) wetlands totaling 101.25 acres, two (2) ponds totaling 0.53 acres and one (1) watercourse totaling 464 feet within the Delineation Area for the Fairlane Green Hydrogen Project. The data supporting the delineations is presented in the exhibits, photographs, and data forms in this document. Please contact Westwood if you have questions regarding this report.

The findings of this report are based on Westwood's best professional judgement and experience with similar projects under similar conditions. As with all WOTUS, including wetlands, the final jurisdictional determination can only be made by the USACE.

# 6.0 References Cited

Cowardin, L.M. , V.M. Carter , F.C. Golet , and E.T. LaRoe . 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Fish and Wildlife Service, Biological Services Program, Washington, DC, USA. FWS/OBS-79/31. 103pp.

Dewitz, J., and U.S. Geological Survey, 2021, National Land Cover Database (NLCD) 2019 Products (ver. 2.0, June 2021): U.S. Geological Survey data release, doi:10.5066/P9KZCM54.

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, MS.

Griffith, Glenn., Bryce, Sandy., Omernik, James., Rogers, Anne.2007, Ecoregions of Texas (Handbook): Texas Commission of Environmental Quality (TCEQ). TXeco_Jan08_v8_Cmprsd.pdf (ecologicalregions.info)

Shaw, S.P. and C.G. Fredine. 1971. Wetlands of the United States. U.S. Fish and Wildlife Circular 39. U.S. Department of the Interior, Washington, D.C. 67 pp.

U.S. Army Corps of Engineers. 2022.Antecedent Precipitation Tool V1.0. Joseph L. Gutenson and Jason C. Deters. https://erdc-library.erdc.dren.mil/jspui/bitstream/11681/43160/3/ERDC-TN%20WRAP-22-1.pdf

U.S. Army Corps of Engineers. National Wetland Plant List Notice. Federal Register. Vol. 89, No. 30. Published 13 February 2024. 10059 pp. U.S. Army Corps of Engineers. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain. ERDC/EL TR-10-20. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

United States Department of Agriculture, Natural Resources Conservation Service, 2018. Field Indicators of Hydric Soils in the United States, Version 8.2. G.W. Hurt, and J.F. Berkowitz (eds.). USDA NRCS, in cooperation with the National Technical Committee for Hydric Soils.

U.S. Environmental Protection Agency. 2013. Level IV Ecoregions of the Continental United States: Corvallis, Oregon, U.S. EPA, National Health and Environmental Effects Research Laboratory, map scale 1:3,000,000. https://gaftp.epa.gov/EPADataCommons/ORD/Ecoregions/us/Eco_Level_IV_US.pdf

# 7.0 Certification

I certify that, to the best of my knowledge and belief, the wetland delineation completed for this Site is consistent with current wetland delineation practices and guidelines. I have the specific qualifications, education, training, and experience to complete wetland delineations and determinations in accordance with federal and state requirements.

Sincerely,

WESTWOOD PROFESSIONAL SERVICES, INC.

Kelly Swanson
Environmental Scientist

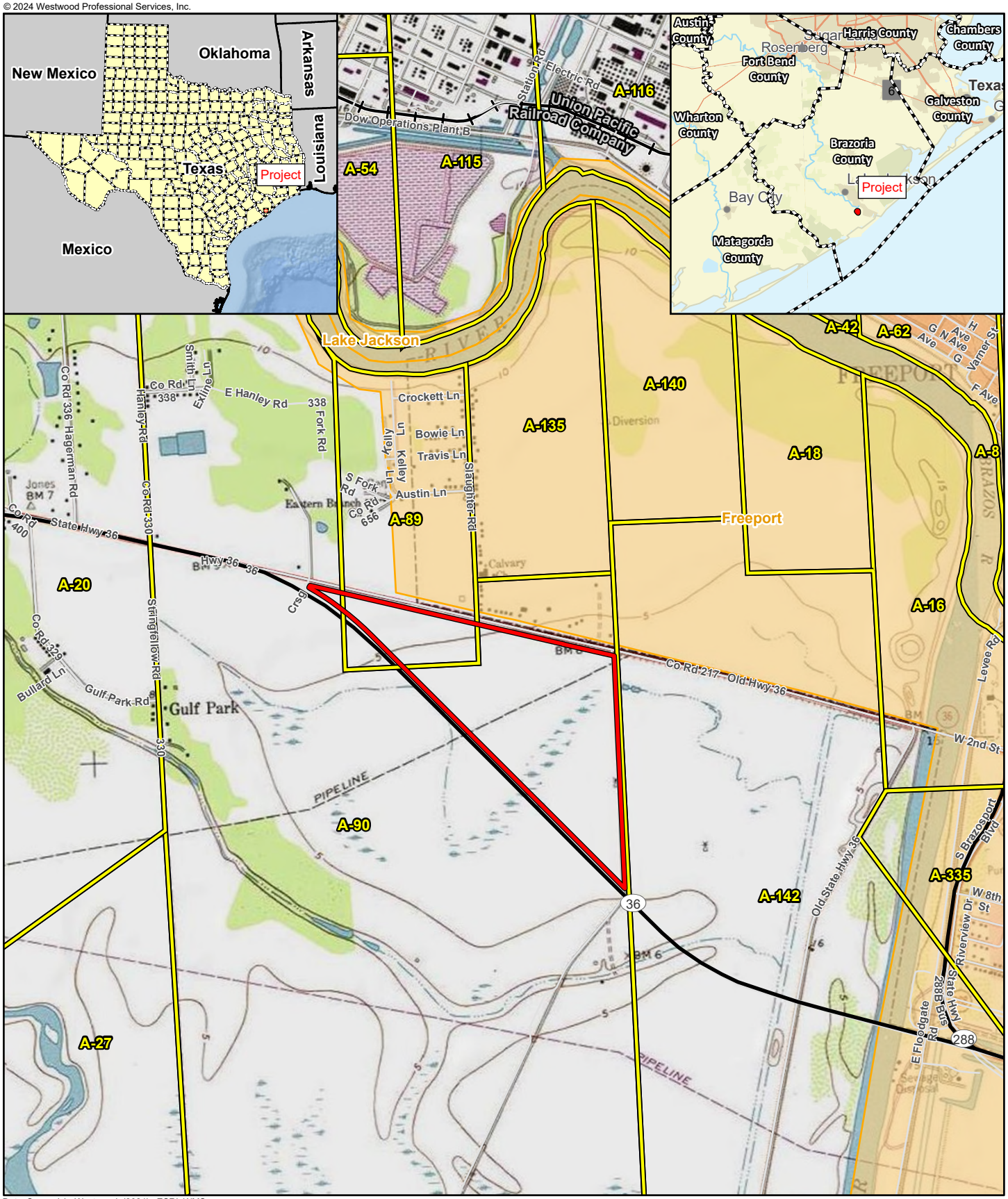
Kevin Alexander, Ph.D.
Senior Wetland Biologist

Westwood

# Exhibits

**Fairlane Green Hydrogen Project**

Brazoria County, Texas




Data Source(s): Westwood (2024); ESRI WMS USA Topo Basemap World Street Map (Accessed 2024); U.S. Census Bureau (2021 & 2022); OTLS (2022).

Feet
0 2,000

Westwood
Toll Free (888) 937-5150 westwoodps.com
Westwood Professional Services, Inc.

## Legend

- Project Area
- State Boundary
- County Boundary
- Original Texas Land Survey
- Municipal Boundary
- Major Road
- Road
- Railroad

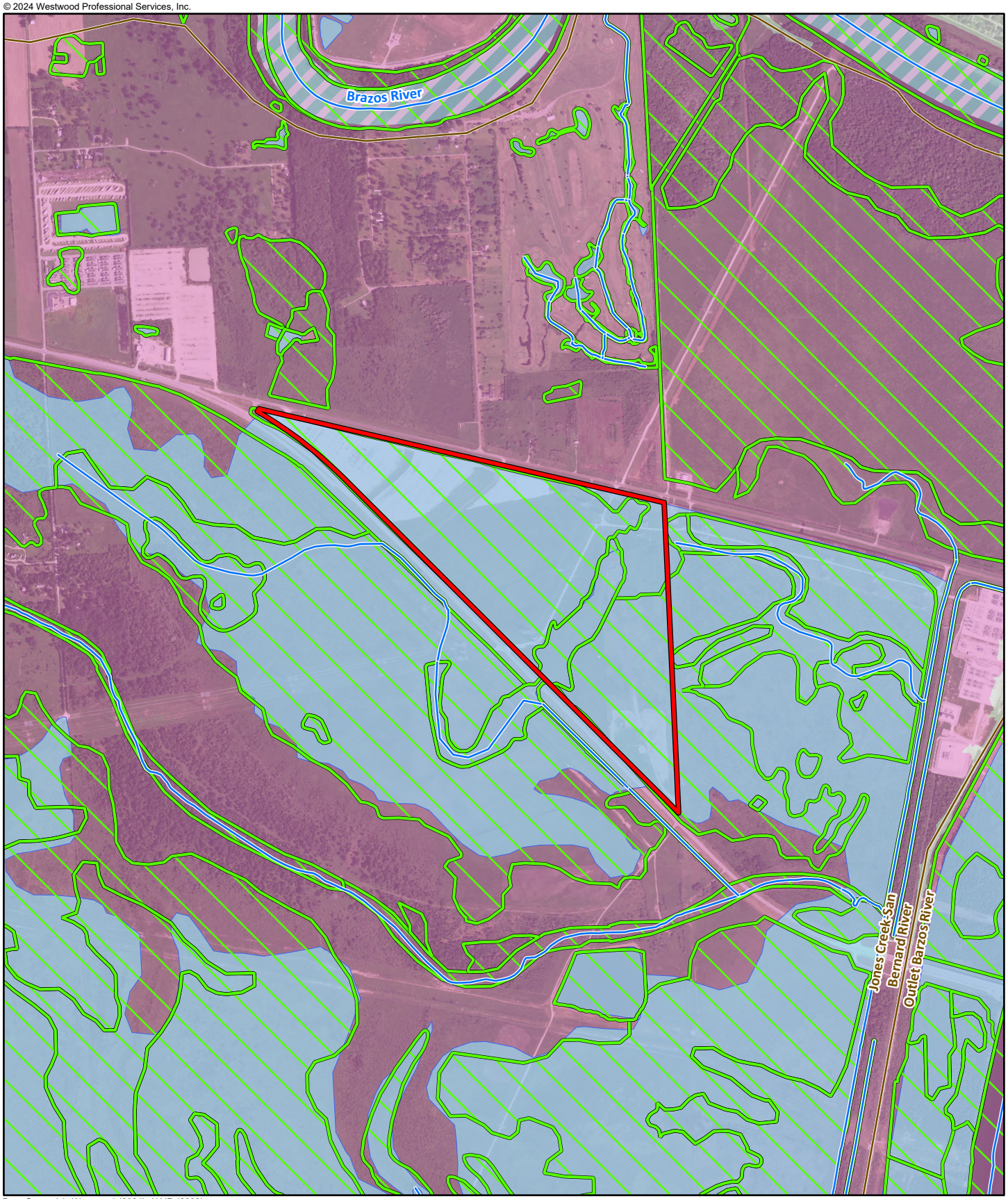
# Monarch Fairlane Project

Brazoria County, Texas

N

## Project Location & USGS Topography

EXHIBIT 1




Data Source(s): Westwood (2024); NAIP (2022); NWI (2022); NHD (2023); FEMA (2023).

## Legend

- Project Area
- Watershed Boundary
- NWI Wetland
- NHD Waterbody
- NHD Flowline

**FEMA Flood Zone**

- 100-Year Floodplain
- Regulatory Floodway
- 500-Year Floodplain

Feet
0 1,500

N

# Monarch Fairlane Project

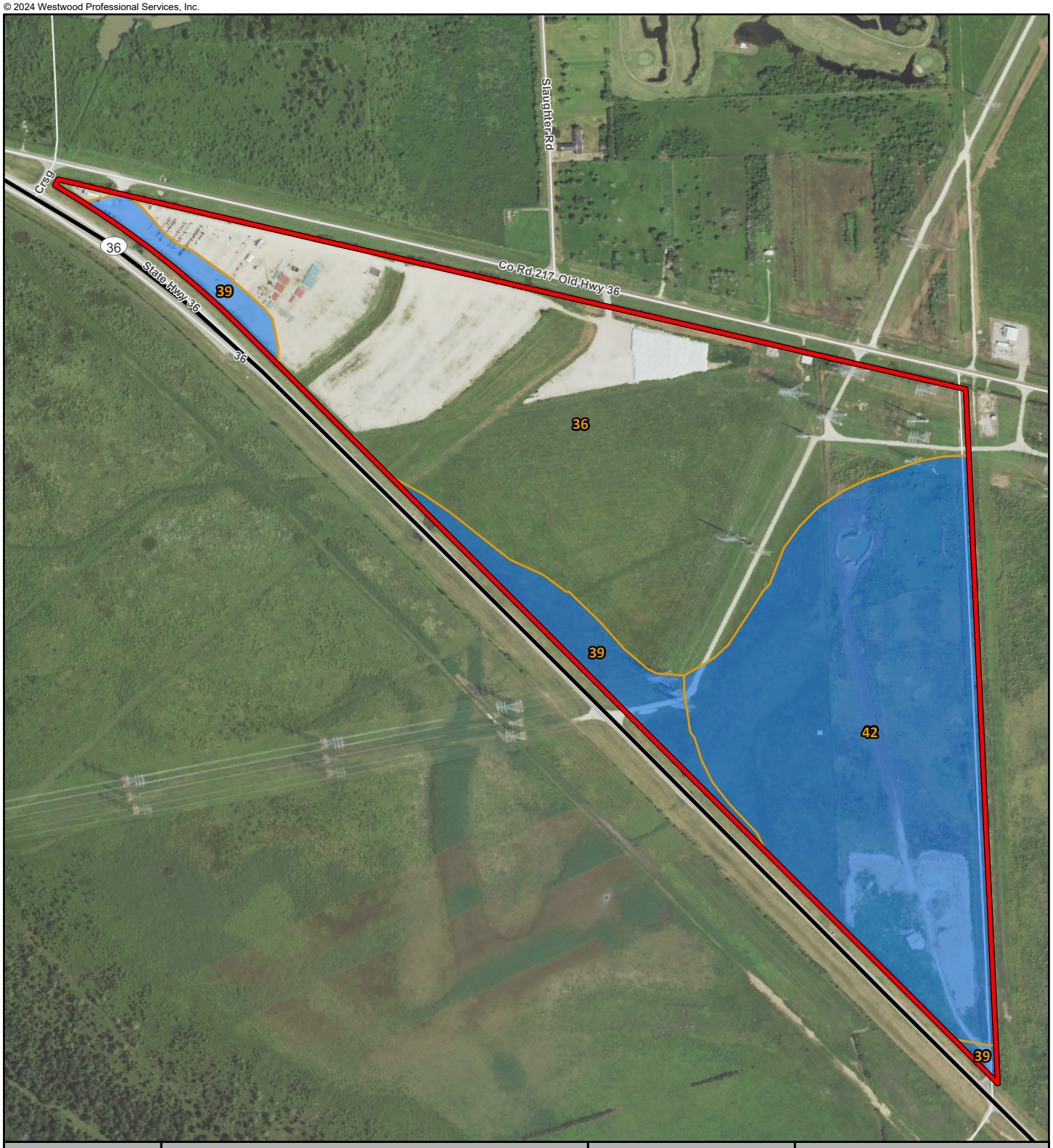
Brazoria County, Texas

Water Resources

EXHIBIT 2

Westwood
Toll Free (888) 937-5150 westwoodps.com
Westwood Professional Services, Inc.

Map Document: N:\00509939.00_GIS_ArcPro\R00509939_040_WetlandExhibitsUpdate_20240712\R00509939_040_WetlandExhibitsUpdate_20240712.aprx 7/12/2024 11:18 AM BPryzby




| Map Unit Symbol | Map Unit Name | Hydric Classification | Percent Hydric Classification |
|---|---|---|---|
| 36 | Pledger clay, 0 to 1 percent slopes, rarely flooded | Predominantly Non-Hydric | 1 |
| 42 | Velasco clay, 0 to 1 percent slopes, frequently flooded | All Hydric | 100 |
| 39 | Surfside clay, 0 to 1 percent slopes, occasionally flooded | All Hydric | 100 |

Data Source(s): Westwood (2024); NAIP (2022); NRCS Web Soil Survey (Accessed 2024); U.S. Census Bureau (2022).

Feet
0 700

## Legend

- Project Area
- Soil Unit Boundary
- Major Road
- Road

**Hydric Classification**

- All Hydric

# Monarch Fairlane Project

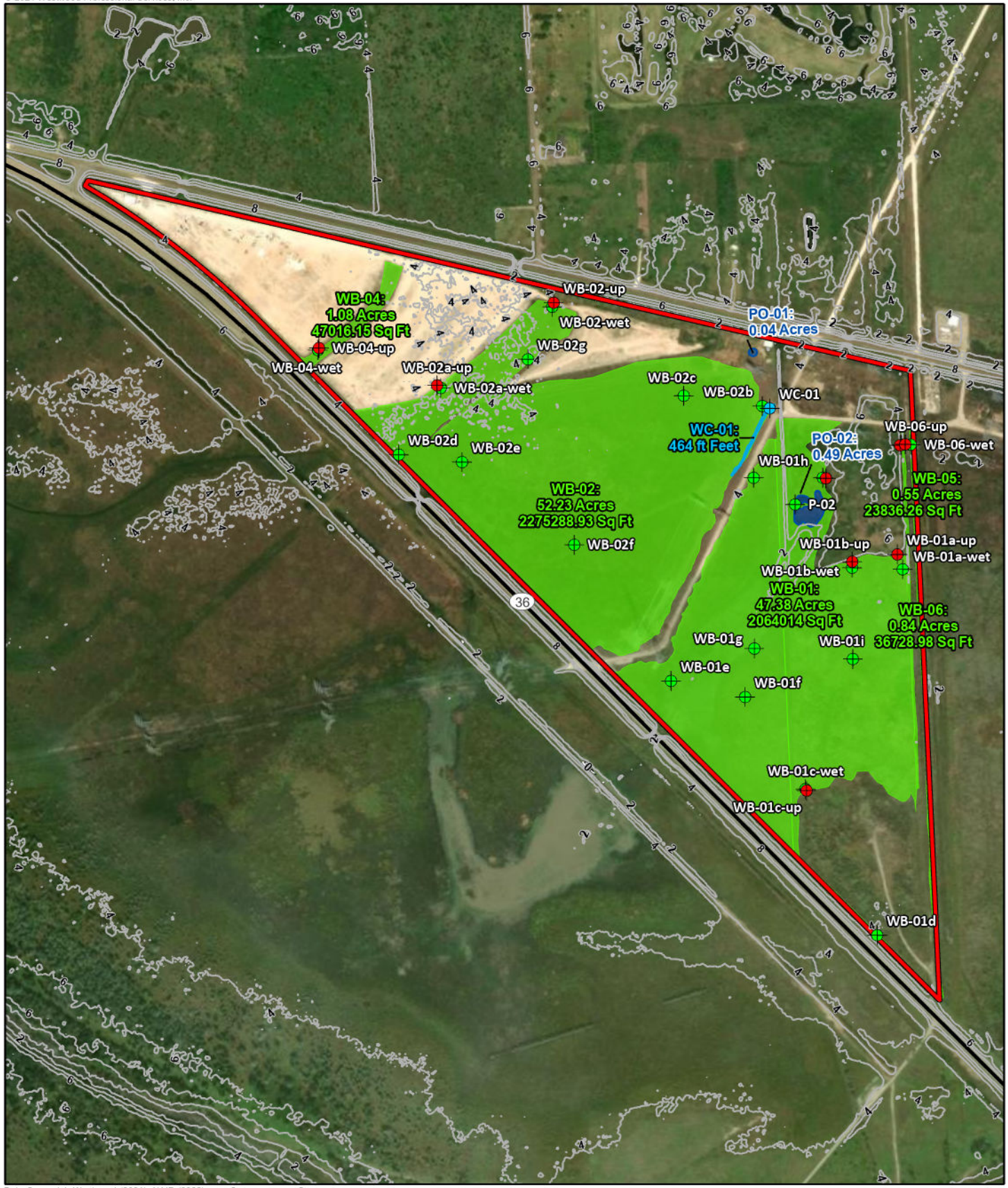
Brazoria County, Texas

N

Soils

EXHIBIT 3

Westwood
Toll Free (888) 937-5150 westwoodps.com
Westwood Professional Services, Inc.




Data Source(s): Westwood (2024); NAIP (2022); U.S. Census Bureau (2021); USGS 3DEP (Accessed 2024).

Feet
0 700

Westwood

Toll Free (888) 937-5150 westwoodps.com
Westwood Professional Services, Inc.

## Legend

- Project Area
- Field Delineated Wetland
- Field Delineated Watercourse
- Field Delineated Pond
- Major Road
- 10ft Contour
- 2ft Contour
- Wetland Sample Point
- Upland Sample Point
- Watercourse Sample Point

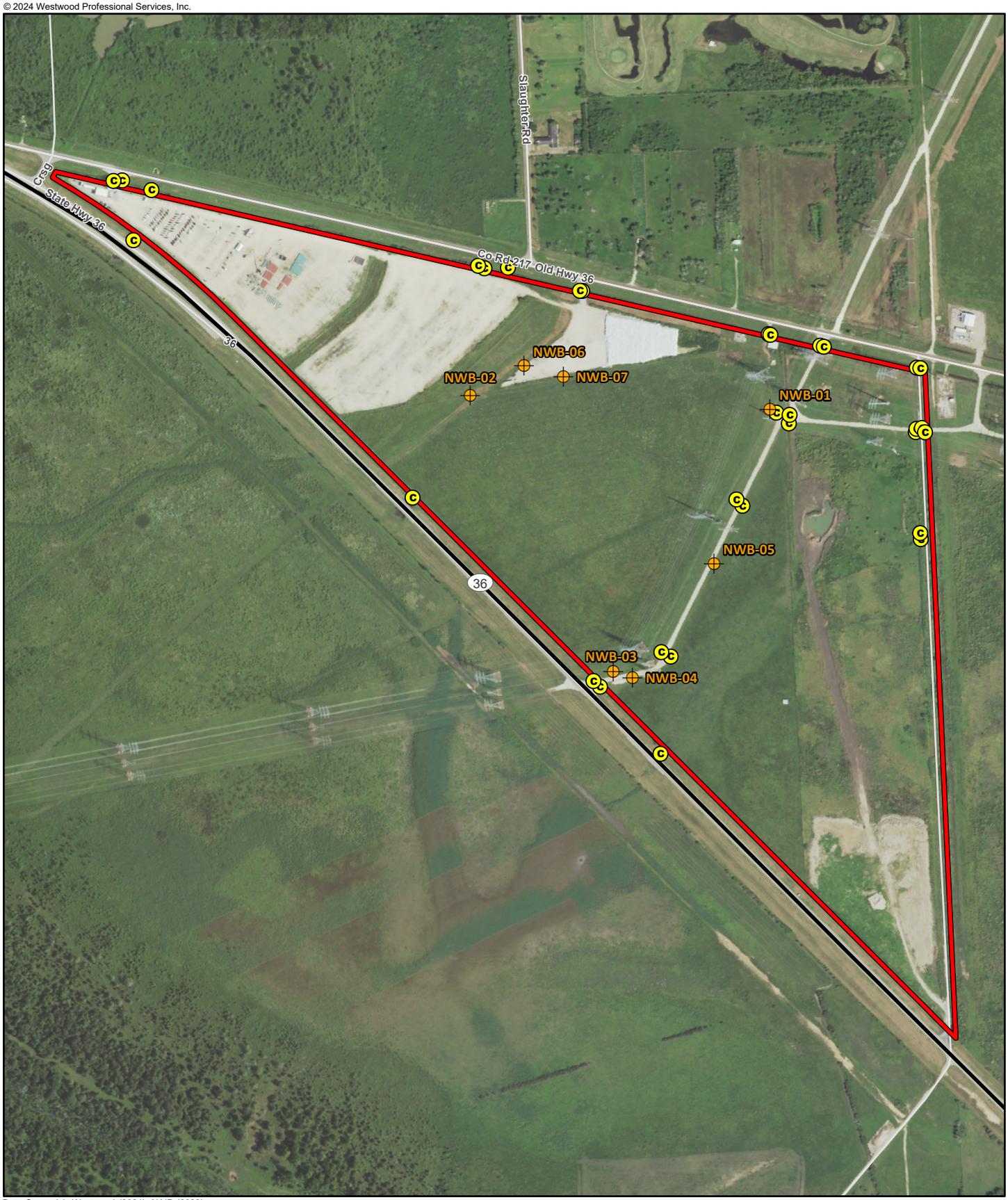
# Monarch Fairlane Project

Brazoria County, Texas

N

## Field Delineated Features

EXHIBIT 4




Data Source(s): Westwood (2024); NAIP (2022); U.S. Census Bureau (2021)).

## Legend

- Project Area
- Major Road
- Road
- Non-Wetland Sample Point
- Culvert

0 700 Feet

N

# Monarch Fairlane Project

Brazoria County, Texas

## Non-Wetland Features

EXHIBIT 5

Westwood
Toll Free (888) 937-5150 westwoodps.com
Westwood Professional Services, Inc.

Map Document: N:\00509939.00_GIS_ArcPro\R00509939_040_WetlandExhibitsUpdate_20240712\R00509939_040_WetlandExhibitsUpdate_20240712.aprx 7/16/2024 10:40 AM BPryzby

Westwood

# Appendix A

## Wetland Delineation Data Forms and Photographs

**Fairlane Green Hydrogen Project**

Brazoria County, Texas

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-07-02

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-01-up

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Rise Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.960753 Long: -95.394021 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: No

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No | **Is the Sampled Area within a Wetland?** Yes No ✔ |
| Hydric Soil Present? | Yes | No ✔ | |
| Wetland Hydrology Present? | Yes | No ✔ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes | No ✔ | Depth (inches): |
| Water Table Present? | Yes | No ✔ | Depth (inches): |
| Saturation Present? (includes capillary fringe) | Yes | No ✔ | Depth (inches): |

**Wetland Hydrology Present?** Yes No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No water present

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

Sampling Point: WB-01-up

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| **Sapling/Shrub Stratum** (Plot size: 15) | | | |
| 1. *Baccharis halimifolia* | 10 | Y | FAC |
| 2. *Chloracantha spinosa* | 5 | Y | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 15.0 = Total Cover | | |
| 50% of total cover: 7.5 | 20% of total cover: 3.0 | | |
| **Herb Stratum** (Plot size: 5) | | | |
| 1. *Cynodon dactylon* | 50 | Y | FACU |
| 2. *Iva annua* | 10 | N | FAC |
| 3. *Clinopodium arkansanum* | 5 | N | FACW |
| 4. *Paspalum denticulatum* | 5 | N | FACW |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 70.0 = Total Cover | | |
| 50% of total cover: 35.0 | 20% of total cover: 14.0 | | |
| **Woody Vine Stratum** (Plot size: 30) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.67 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0.00 | x 1 = | 0.00 |
| FACW species | 15.00 | x 2 = | 30.00 |
| FAC species | 20.00 | x 3 = | 60.00 |
| FACU species | 50.00 | x 4 = | 200.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 85.00 (A) | | 290.00 (B) |

Prevalence Index = B/A = 3.41

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-01-up

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-20 | 10YR 3/2 | 90 | 7.5YR 4/6 | 10 | C | M | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** ☐ **No** ✔

Remarks:

No wetland soil indicators

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-07-02

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-01-wet

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.960754 Long: -95.394071 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Vegetation too dense to detect secondary markers

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

Sampling Point: WB-01-wet

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| Sapling/Shrub Stratum (Plot size: 15) | | | |
| 1. *Baccharis halimifolia* | 10 | Y | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 10.0 = Total Cover | | |
| 50% of total cover: 5.0 | 20% of total cover: 2.0 | | |
| Herb Stratum (Plot size: 5) | | | |
| 1. *Phyla lanceolata* | 40 | Y | OBL |
| 2. *Paspalum denticulatum* | 40 | Y | OBL |
| 3. *Clinopodium brownei* | 20 | Y | OBL |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 100.0 = Total Cover | | |
| 50% of total cover: 50.0 | 20% of total cover: 20.0 | | |
| Woody Vine Stratum (Plot size: 30) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 100.00 | x 1 = | 100.00 |
| FACW species | 0.00 | x 2 = | 0.00 |
| FAC species | 10.00 | x 3 = | 30.00 |
| FACU species | 0.00 | x 4 = | 0.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 110.00 (A) | | 130.00 (B) |

Prevalence Index = B/A = 1.18

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ✔ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ✔ No ☐

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-01-wet

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 3/1 | 90 | 7.5YR 4/6 | 10 | C | M | C | |
| 12-20 | 10YR 3/2 | 90 | 7.5YR 4/6 | 10 | C | M | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☑ No ☐

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-07-02

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-01a-up

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Rise Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.959564 Long: -95.392649 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: No

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No ✔ | **Is the Sampled Area within a Wetland?** Yes ____ No ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ | |
| Wetland Hydrology Present? | Yes ____ | No ✔ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No water present

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

Sampling Point: WB-01a-up

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| **Sapling/Shrub Stratum** (Plot size: 15) | | | |
| 1. *Baccharis halimifolia* | 20 | Y | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 20.0 = Total Cover | | |
| 50% of total cover: 10.0 | 20% of total cover: 4.0 | | |
| **Herb Stratum** (Plot size: 5) | | | |
| 1. *Cynodon dactylon* | 50 | Y | FACU |
| 2. *Ruellia humilis* | 15 | N | FACU |
| 3. *Ambrosia psilostachya* | 10 | N | FAC |
| 4. *Mimosa strigillosa* | 5 | N | FAC |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 80.0 = Total Cover | | |
| 50% of total cover: 40.0 | 20% of total cover: 16.0 | | |
| **Woody Vine Stratum** (Plot size: 30) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0.00 | x 1 = | 0.00 |
| FACW species | 0.00 | x 2 = | 0.00 |
| FAC species | 35.00 | x 3 = | 105.00 |
| FACU species | 65.00 | x 4 = | 260.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 100.00 (A) | | 365.00 (B) |

Prevalence Index = B/A = 3.65

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☐ No ✓

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-01a-up

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-20 | 10YR 3/2 | 90 | 7.5YR 4/6 | 10 | C | M | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☐ No ☑

Remarks:

No wetland soil indicators

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-07-02

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-01a-wet

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.959337 Long: -95.392564 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Vegetation too dense to detect secondary markers

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

Sampling Point: WB-01a-wet

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| Sapling/Shrub Stratum (Plot size: 15) | | | |
| 1. *Baccharis halimifolia* | 10 | Y | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 10.0 = Total Cover | | |
| 50% of total cover: 5.0 | 20% of total cover: 2.0 | | |
| Herb Stratum (Plot size: 5) | | | |
| 1. *Sporobolus virginicus* | 80 | Y | FACW |
| 2. *Lythrum alatum* | 20 | N | OBL |
| 3. *Paspalum denticulatum* | 5 | N | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 105.0 = Total Cover | | |
| 50% of total cover: 52.5 | 20% of total cover: 21.0 | | |
| Woody Vine Stratum (Plot size: 30) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 20.00 | x 1 = | 20.00 |
| FACW species | 85.00 | x 2 = | 170.00 |
| FAC species | 10.00 | x 3 = | 30.00 |
| FACU species | 0.00 | x 4 = | 0.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 115.00 (A) | | 220.00 (B) |

Prevalence Index = B/A = 1.91

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-01a-wet

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 3/1 | 90 | 7.5YR 4/6 | 10 | C | M | C | |
| 12-20 | 10YR 3/2 | 95 | 7.5YR 4/6 | 5 | C | M | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☑ No ☐

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-07-02

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-01b-up

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Rise Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.959476 Long: -95.393435 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: No

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No ✔ | **Is the Sampled Area within a Wetland?** Yes ____ No ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ | |
| Wetland Hydrology Present? | Yes ____ | No ✔ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No water present

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

Sampling Point: WB-01b-up

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| Sapling/Shrub Stratum (Plot size: 15) | | | |
| 1. *Baccharis halimifolia* | 20 | Y | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 20.0 = Total Cover | | |
| 50% of total cover: 10.0 | 20% of total cover: 4.0 | | |
| Herb Stratum (Plot size: 5) | | | |
| 1. *Cynodon dactylon* | 50 | Y | FACU |
| 2. *Ruellia humilis* | 15 | Y | FACU |
| 3. *Ambrosia psilostachya* | 10 | N | FAC |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 75.0 = Total Cover | | |
| 50% of total cover: 37.5 | 20% of total cover: 15.0 | | |
| Woody Vine Stratum (Plot size: 30) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.33 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0.00 | x 1 = | 0.00 |
| FACW species | 0.00 | x 2 = | 0.00 |
| FAC species | 30.00 | x 3 = | 90.00 |
| FACU species | 65.00 | x 4 = | 260.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 95.00 (A) | | 350.00 (B) |

Prevalence Index = B/A = 3.68

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☐ No ✔

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-01b-up

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-20 | 10YR 3/2 | 90 | 7.5YR 4/6 | 10 | C | M | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** ☐ **No** ☑

Remarks:

No wetland soil indicators

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-07-02

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-01b-wet

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.959385 Long: -95.393411 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Vegetation too dense to detect secondary markers clearly

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

Sampling Point: WB-01b-wet

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| Sapling/Shrub Stratum (Plot size: 15) | | | |
| 1. *Baccharis halimifolia* | 10 | Y | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 10.0 = Total Cover | | |
| 50% of total cover: 5.0 | 20% of total cover: 2.0 | | |
| Herb Stratum (Plot size: 5) | | | |
| 1. *Sporobolus virginicus* | 80 | Y | FACW |
| 2. *Lythrum alatum* | 20 | N | OBL |
| 3. *Paspalum denticulatum* | 5 | N | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 105.0 = Total Cover | | |
| 50% of total cover: 52.5 | 20% of total cover: 21.0 | | |
| Woody Vine Stratum (Plot size: 30) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 20.00 | x 1 = | 20.00 |
| FACW species | 85.00 | x 2 = | 170.00 |
| FAC species | 10.00 | x 3 = | 30.00 |
| FACU species | 0.00 | x 4 = | 0.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 115.00 (A) | | 220.00 (B) |

Prevalence Index = B/A = 1.91

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-01b-wet

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 3/1 | 90 | 7.5YR 4/6 | 10 | C | M | C | |
| 12-20 | 10YR 3/2 | 95 | 7.5YR 4/6 | 5 | C | M | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☑ No ☐

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-07-02

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-01c-up

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Rise Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.956012 Long: -95.394348 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ____ No ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ | |
| Wetland Hydrology Present? | Yes ____ | No ✔ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No water present

Remarks:

Hydrology changed due to fill

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

Sampling Point: WB-01c-up

| Tree Stratum (Plot size: 30 ) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| **Sapling/Shrub Stratum** (Plot size: 15 ) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| **Herb Stratum** (Plot size: 5 ) | | | |
| 1. *Cynodon dactylon* | 65 | Y | FACU |
| 2. *Ambrosia psilostachya* | 20 | Y | FAC |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 85.0 = Total Cover | | |
| 50% of total cover: 42.5 | 20% of total cover: 17.0 | | |
| **Woody Vine Stratum** (Plot size: 30 ) | | | |
| 1. *Smilax bona-nox* | 10 | Y | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 10.0 = Total Cover | | |
| 50% of total cover: 5.0 | 20% of total cover: 2.0 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.67 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0.00 | x 1 = | 0.00 |
| FACW species | 0.00 | x 2 = | 0.00 |
| FAC species | 30.00 | x 3 = | 90.00 |
| FACU species | 65.00 | x 4 = | 260.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 95.00 (A) | | 350.00 (B) |

Prevalence Index = B/A = 3.68

**Hydrophytic Vegetation Indicators:**

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [ ] 3 - Prevalence Index is ≤3.0[1]
- [ ] Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes [x] No [ ]

Remarks: (If observed, list morphological adaptations below).

Fill area

**SOIL**

Sampling Point: WB-01c-up

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 3/2 | 50 | 7.5YR 5/8 | 5 | C | M | CL | Fill layer |
| | | | 10YR 7/3 | 45 | C | M | CL | |
| 6-20 | 10YR 3/2 | 70 | 7.5YR 5/8 | 30 | C | M | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☐ No ☑

Remarks:

No wetland soil indicators
Sand, gravel fill

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-07-02

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-01c-wet

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.956035 Long: -95.394366 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ☐ | **Is the Sampled Area within a Wetland?** Yes ✔ No ☐ |
| Hydric Soil Present? | Yes ✔ | No ☐ | |
| Wetland Hydrology Present? | Yes ✔ | No ☐ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ☐ | No ✔ | Depth (inches): |
| Water Table Present? | Yes ☐ | No ✔ | Depth (inches): |
| Saturation Present? (includes capillary fringe) | Yes ☐ | No ✔ | Depth (inches): |

**Wetland Hydrology Present?** Yes ✔ No ☐

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Vegetation too dense to detect secondary markers

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

Sampling Point: WB-01c-wet

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30 ) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| **Sapling/Shrub Stratum** (Plot size: 15 ) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| **Herb Stratum** (Plot size: 5 ) | | | |
| 1. *Sporobolus virginicus* | 75 | Y | FACW |
| 2. *Lythrum alatum* | 20 | Y | OBL |
| 3. *Paspalum denticulatum* | 5 | N | OBL |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 100.0 = Total Cover | | |
| 50% of total cover: 50.0 | 20% of total cover: 20.0 | | |
| **Woody Vine Stratum** (Plot size: 30 ) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 25.00 | x 1 = | 25.00 |
| FACW species | 75.00 | x 2 = | 150.00 |
| FAC species | 0.00 | x 3 = | 0.00 |
| FACU species | 0.00 | x 4 = | 0.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 100.00 (A) | | 175.00 (B) |

Prevalence Index = B/A = 1.75

**Hydrophytic Vegetation Indicators:**

- ✓ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ✓ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ✓ No ☐

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-01c-wet

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 3/1 | 90 | 7.5YR 4/6 | 10 | C | M | C | |
| 12-20 | 10YR 3/2 | 95 | 7.5YR 4/6 | 5 | C | M | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** ✔ **No** ☐

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-07-02

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-01d

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.953775 Long: -95.393203 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Vegetation too dense to detect secondary markers

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

Sampling Point: WB-01d

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| Sapling/Shrub Stratum (Plot size: 15) | | | |
| 1. *Baccharis halimifolia* | 10 | Y | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 10.0 = Total Cover | | |
| 50% of total cover: 5.0 | 20% of total cover: 2.0 | | |
| Herb Stratum (Plot size: 5) | | | |
| 1. *Iva annua* | 30 | Y | FAC |
| 2. *Lythrum alatum* | 20 | Y | OBL |
| 3. *Phyla lanceolata* | 10 | N | OBL |
| 4. *Clinopodium brownei* | 10 | N | OBL |
| 5. *Sporobolus virginicus* | 10 | N | FACW |
| 6. *Paspalum denticulatum* | 5 | N | OBL |
| 7. *Sesbania drummondii* | 5 | N | FACW |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 90.0 = Total Cover | | |
| 50% of total cover: 45.0 | 20% of total cover: 18.0 | | |
| Woody Vine Stratum (Plot size: 30) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 45.00 | x 1 = | 45.00 |
| FACW species | 15.00 | x 2 = | 30.00 |
| FAC species | 40.00 | x 3 = | 120.00 |
| FACU species | 0.00 | x 4 = | 0.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 100.00 (A) | | 195.00 (B) |

Prevalence Index = B/A = 1.95

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ✔ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ✔ No ☐

Remarks: (If observed, list morphological adaptations below).

Off raised fill

**SOIL**

Sampling Point: WB-01d

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 3/1 | 90 | 7.5YR 4/6 | 10 | C | M | C | |
| 12-20 | 10YR 3/2 | 90 | 7.5YR 4/6 | 10 | C | M | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** ✔ **No** ☐

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-02-20

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-01e

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.957734 Long: -95.396631 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ✔ | No ____ | Depth (inches): 4 |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: WB-01e

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Sapling/Shrub Stratum (Plot size: 15) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Herb Stratum (Plot size: 5) | | | |
|---|---|---|---|
| 1. *Eleocharis interstincta* | 60 | Y | OBL |
| 2. *Coreopsis linifolia* | 20 | Y | FACW |
| 3. *Lycium carolinianum* | 20 | Y | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 100.0 = Total Cover | | |

50% of total cover: 50.0 20% of total cover: 20.0

| Woody Vine Stratum (Plot size: 30) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| | Total % Cover of: | | Multiply by: |
|---|---|---|---|
| OBL species | 60.00 | x 1 = | 60.00 |
| FACW species | 40.00 | x 2 = | 80.00 |
| FAC species | 0.00 | x 3 = | 0.00 |
| FACU species | 0.00 | x 4 = | 0.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 100.00 (A) | | 140.00 (B) |

Prevalence Index = B/A = 1.4

**Hydrophytic Vegetation Indicators:**

- ✓ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ✓ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ✓ No ☐

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-01e

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR 3/2 | 100 | | | | | C | |
| 8-18 | 10YR 3/2 | 97 | 10YR 4/6 | 3 | RM | M/PL | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** ✔ **No** ☐

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-02-20

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-01f

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.957468 Long: -95.395356 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ✔ | No ____ | Depth (inches): 2 |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: WB-01f

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Sapling/Shrub Stratum (Plot size: 15) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Herb Stratum (Plot size: 5) | | | |
|---|---|---|---|
| 1. *Eleocharis interstincta* | 40 | Y | OBL |
| 2. *Ambrosia psilostachya* | 40 | Y | FAC |
| 3. *Coreopsis linifolia* | 10 | N | FACW |
| 4. *Ranunculus sardous* | 7 | N | FAC |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 97.0 = Total Cover | | |

50% of total cover: 48.5 20% of total cover: 19.4

| Woody Vine Stratum (Plot size: 30) | | | |
|---|---|---|---|
| 1. *Rubus trivialis* | 3 | N | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 3.0 = Total Cover | | |

50% of total cover: 1.5 20% of total cover: 0.6

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 40.00 | x 1 = | 40.00 |
| FACW species | 10.00 | x 2 = | 20.00 |
| FAC species | 47.00 | x 3 = | 141.00 |
| FACU species | 3.00 | x 4 = | 12.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 100.00 (A) | | 213.00 (B) |

Prevalence Index = B/A = 2.13

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-01f

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 3/2 | 90 | 7.5YR 5/8 | 10 | RM | M/PL | C | |
| 12-18 | 10YR 3/2 | 100 | | | | | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☑ No ☐

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-02-20

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-01g

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.961219 Long: -95.371315 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ✔ | No ____ | Depth (inches): 4 |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: WB-01g

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Sapling/Shrub Stratum (Plot size: 15) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Herb Stratum (Plot size: 5) | | | |
|---|---|---|---|
| 1. *Eleocharis interstincta* | 60 | Y | OBL |
| 2. *Coreopsis linifolia* | 20 | Y | FACW |
| 3. *Lycium carolinianum* | 20 | Y | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 100.0 = Total Cover | | |

50% of total cover: 50.0 20% of total cover: 20.0

| Woody Vine Stratum (Plot size: 30) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 60.00 | x 1 = | 60.00 |
| FACW species | 40.00 | x 2 = | 80.00 |
| FAC species | 0.00 | x 3 = | 0.00 |
| FACU species | 0.00 | x 4 = | 0.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 100.00 (A) | | 140.00 (B) |

Prevalence Index = B/A = 1.4

**Hydrophytic Vegetation Indicators:**

- ✓ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ✓ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ✓ No ☐

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-01g

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| -8 | 10YR 3/2 | 100 | | | | | C | |
| 8-18 | 10YR 3/2 | 95 | 10YR 3/6 | 5 | RM | M/PL | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** ✔ **No** ☐

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-02-20

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-01h

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.960766 Long: -95.395102 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ✔ | No ____ | Depth (inches): 2 |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: WB-01h

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Sapling/Shrub Stratum (Plot size: 15) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Herb Stratum (Plot size: 5) | | | |
|---|---|---|---|
| 1. *Eleocharis interstincta* | 40 | Y | OBL |
| 2. *Ambrosia psilostachya* | 40 | Y | FAC |
| 3. *Coreopsis linifolia* | 10 | N | FACW |
| 4. *Ranunculus sardous* | 10 | N | FAC |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 100.0 = Total Cover | | |

50% of total cover: 50.0 20% of total cover: 20.0

| Woody Vine Stratum (Plot size: 30) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 40.00 | x 1 = | 40.00 |
| FACW species | 10.00 | x 2 = | 20.00 |
| FAC species | 50.00 | x 3 = | 150.00 |
| FACU species | 0.00 | x 4 = | 0.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 100.00 (A) | | 210.00 (B) |

Prevalence Index = B/A = 2.1

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-01h

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 3/2 | 90 | 7.5YR 5/8 | 10 | RM | M/PL | C | |
| 12-18 | 10YR 3/2 | 100 | | | | | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☑ No ☐

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-07-02

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-01i

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.957991 Long: -95.393472 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Vegetation too dense to detect secondary markers

**VEGETATION (Four Strata) –** Use scientific names of plants. Sampling Point: WB-01i

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| Sapling/Shrub Stratum (Plot size: 15) | | | |
| 1. *Baccharis halimifolia* | 10 | Y | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 10.0 = Total Cover | | |
| 50% of total cover: 5.0 | 20% of total cover: 2.0 | | |
| Herb Stratum (Plot size: 5) | | | |
| 1. *Sporobolus virginicus* | 65 | Y | FACW |
| 2. *Lythrum alatum* | 20 | Y | OBL |
| 3. *Paspalum denticulatum* | 5 | N | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 90.0 = Total Cover | | |
| 50% of total cover: 45.0 | 20% of total cover: 18.0 | | |
| Woody Vine Stratum (Plot size: 30) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 20.00 | x 1 = | 20.00 |
| FACW species | 70.00 | x 2 = | 140.00 |
| FAC species | 10.00 | x 3 = | 30.00 |
| FACU species | 0.00 | x 4 = | 0.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 100.00 (A) | | 190.00 (B) |

Prevalence Index = B/A = 1.9

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-01i

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 3/1 | 90 | 7.5YR 4/6 | 10 | C | M | C | |
| 12-20 | 10YR 3/2 | 95 | 7.5YR 4/6 | 5 | C | M | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☑ No ☐

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-07-02

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-02-up

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Rise Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.963561 Long: -95.398468 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No ✔ | **Is the Sampled Area within a Wetland?** Yes ____ No ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ | |
| Wetland Hydrology Present? | Yes ____ | No ✔ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No water present

Remarks:

Hydrology changed due to fill

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

Sampling Point: WB-02-up

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Sapling/Shrub Stratum (Plot size: 15) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Herb Stratum (Plot size: 5) | | | |
|---|---|---|---|
| 1. *Ambrosia psilostachya* | 40 | Y | FAC |
| 2. *Cynodon dactylon* | 20 | Y | FACU |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 60.0 = Total Cover | | |

50% of total cover: 30.0 20% of total cover: 12.0

| Woody Vine Stratum (Plot size: 30) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0.00 | x 1 = | 0.00 |
| FACW species | 0.00 | x 2 = | 0.00 |
| FAC species | 40.00 | x 3 = | 120.00 |
| FACU species | 20.00 | x 4 = | 80.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 60.00 (A) | | 200.00 (B) |

Prevalence Index = B/A = 3.33

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☐ No ✓

Remarks: (If observed, list morphological adaptations below).

Gravel road

**SOIL**

Sampling Point: WB-02-up

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 2 | 10yr 7/3 | 100 | | | | | | Sand and gravel fill |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: sand and gravel

Depth (inches): 2

**Hydric Soil Present?** Yes ☐ No ☑

Remarks:

No wetland soil indicators
Sand, gravel fill

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-07-02

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-02-wet

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.963500 Long: -95.398470 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Vegetation too dense to detect secondary markers clearly.

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

Sampling Point: WB-02-wet

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30 ) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| **Sapling/Shrub Stratum** (Plot size: 15 ) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| **Herb Stratum** (Plot size: 5 ) | | | |
| 1. *Sporobolus virginicus* | 45 | Y | FACW |
| 2. *Lythrum alatum* | 20 | Y | OBL |
| 3. *Paspalum denticulatum* | 10 | N | OBL |
| 4. *Ruellia humilis* | 5 | N | FACU |
| 5. *Oenothera elata* | 5 | N | FACW |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 85.0 = Total Cover | | |
| 50% of total cover: 42.5 | 20% of total cover: 17.0 | | |
| **Woody Vine Stratum** (Plot size: 30 ) | | | |
| 1. *Rubus trivialis* | 15 | Y | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 15.0 = Total Cover | | |
| 50% of total cover: 7.5 | 20% of total cover: 3.0 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.67 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 30.00 | x 1 = | 30.00 |
| FACW species | 50.00 | x 2 = | 100.00 |
| FAC species | 0.00 | x 3 = | 0.00 |
| FACU species | 20.00 | x 4 = | 80.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 100.00 (A) | | 210.00 (B) |

Prevalence Index = B/A = 2.1

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-02-wet

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 3/1 | 90 | 7.5YR 4/6 | 10 | C | M | C | |
| 12-20 | 10YR 3/2 | 95 | 7.5YR 4/6 | 5 | C | M | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☑ No ☐

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-07-02

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-02a-up

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Rise Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.962334 Long: -95.400492 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No ✔ | **Is the Sampled Area within a Wetland?** Yes ____ No ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ | |
| Wetland Hydrology Present? | Yes ____ | No ✔ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No water present

Remarks:

Hydrology changed due to fill

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

Sampling Point: WB-02a-up

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| **Sapling/Shrub Stratum** (Plot size: 15) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| **Herb Stratum** (Plot size: 5) | | | |
| 1. *Cynodon dactylon* | 65 | Y | FACU |
| 2. *Ambrosia psilostachya* | 20 | N | FAC |
| 3. *Coreopsis linifolia* | 20 | N | FACW |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 105.0 = Total Cover | | |
| 50% of total cover: 52.5 | 20% of total cover: 21.0 | | |
| **Woody Vine Stratum** (Plot size: 30) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0.00 | x 1 = | 0.00 |
| FACW species | 20.00 | x 2 = | 40.00 |
| FAC species | 20.00 | x 3 = | 60.00 |
| FACU species | 65.00 | x 4 = | 260.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 105.00 (A) | | 360.00 (B) |

Prevalence Index = B/A = 3.43

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☐ No ✔

Remarks: (If observed, list morphological adaptations below).

Fill area

**SOIL**

Sampling Point: WB-02a-up

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 3/2 | 50 | 7.5YR 5/8 | 5 | C | M | CL | Fill layer |
| | | | 10YR 7/3 | 45 | C | M | CL | |
| 6-20 | 10YR 3/2 | 70 | 7.5YR 5/8 | 30 | C | M | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☐ No ☑

Remarks:

No wetland soil indicators
Sand, gravel fill

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-07-02

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-02a-wet

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.962315 Long: -95.400472 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Vegetation too dense to detect secondary markers clearly.

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

Sampling Point: WB-02a-wet

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30 ) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| **Sapling/Shrub Stratum** (Plot size: 15 ) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| **Herb Stratum** (Plot size: 5 ) | | | |
| 1. *Clinopodium brownei* | 20 | Y | OBL |
| 2. *Lythrum alatum* | 15 | Y | OBL |
| 3. *Sporobolus virginicus* | 15 | Y | FACW |
| 4. *Oenothera elata* | 10 | N | FACW |
| 5. *Eryngium hookeri* | 10 | N | FACW |
| 6. *Paspalum denticulatum* | 10 | N | OBL |
| 7. *Ruellia humilis* | 5 | N | FACU |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 85.0 = Total Cover | | |
| 50% of total cover: 42.5 | 20% of total cover: 17.0 | | |
| **Woody Vine Stratum** (Plot size: 30 ) | | | |
| 1. *Vigna luteola* | 15 | Y | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 15.0 = Total Cover | | |
| 50% of total cover: 7.5 | 20% of total cover: 3.0 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 45.00 | x 1 = | 45.00 |
| FACW species | 50.00 | x 2 = | 100.00 |
| FAC species | 0.00 | x 3 = | 0.00 |
| FACU species | 5.00 | x 4 = | 20.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 100.00 (A) | | 165.00 (B) |

Prevalence Index = B/A = 1.65

**Hydrophytic Vegetation Indicators:**

- ✓ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ✓ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ✓ No ☐

Remarks: (If observed, list morphological adaptations below).

Off fill

**SOIL**

Sampling Point: WB-02a-wet

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 3/1 | 85 | 7.5YR 4/6 | 10 | C | M | C | Some fill |
| | | | 10YR 7/3 | 5 | C | M | C | |
| 12-20 | 10YR 3/2 | 93 | 7.5YR 4/6 | 5 | C | M | C | Some fill |
| | | | 10YR 7/3 | 2 | C | M | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ✔ No ☐

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-02-20

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-02b

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.961890 Long: -95.394933 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ✔ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ✔ | No ____ | Depth (inches): 2 |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: WB-02b

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| Sapling/Shrub Stratum (Plot size: 15) | | | |
| 1. *Sesbania vesicaria* | 5 | Y | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 5.0 = Total Cover | | |
| 50% of total cover: 2.5 | 20% of total cover: 1.0 | | |
| Herb Stratum (Plot size: 5) | | | |
| 1. *Eleocharis interstincta* | 40 | Y | OBL |
| 2. *Coreopsis linifolia* | 10 | N | FACW |
| 3. *Ranunculus sardous* | 10 | N | FAC |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 60.0 = Total Cover | | |
| 50% of total cover: 30.0 | 20% of total cover: 12.0 | | |
| Woody Vine Stratum (Plot size: 30) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 40.00 | x 1 = | 40.00 |
| FACW species | 10.00 | x 2 = | 20.00 |
| FAC species | 15.00 | x 3 = | 45.00 |
| FACU species | 0.00 | x 4 = | 0.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 65.00 (A) | | 105.00 (B) |

Prevalence Index = B/A = 1.62

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ✔ 2 - Dominance Test is >50%
- ✔ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ✔ No ☐

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-02b

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 3/2 | 90 | 7.5YR 5/8 | 10 | RM | M/PL | C | |
| 12-18 | 10YR 3/2 | 100 | | | | | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** ✔ **No** ☐

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-02-20

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-02c

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.961548 Long: -95.382261 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ✔ | No ____ | Depth (inches): 1 |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: WB-02c

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Sapling/Shrub Stratum (Plot size: 15) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Herb Stratum (Plot size: 5) | | | |
|---|---|---|---|
| 1. *Eleocharis interstincta* | 40 | Y | OBL |
| 2. *Ambrosia psilostachya* | 40 | Y | FAC |
| 3. *Coreopsis linifolia* | 10 | N | FACW |
| 4. *Ranunculus sardous* | 10 | N | FAC |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 100.0 = Total Cover | | |

50% of total cover: 50.0 20% of total cover: 20.0

| Woody Vine Stratum (Plot size: 30) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 40.00 | x 1 = | 40.00 |
| FACW species | 10.00 | x 2 = | 20.00 |
| FAC species | 50.00 | x 3 = | 150.00 |
| FACU species | 0.00 | x 4 = | 0.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 100.00 (A) | | 210.00 (B) |

Prevalence Index = B/A = 2.1

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-02c

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 3/2 | 90 | 7.5YR 5/8 | 10 | RM | M/PL | C | |
| 12-18 | 10YR 3/2 | 100 | | | | | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☑ No ☐

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-02-20

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-02d

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.961301 Long: -95.401218 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ✔ | No ____ | Depth (inches): 2 |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: WB-02d

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Sapling/Shrub Stratum (Plot size: 15) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Herb Stratum (Plot size: 5) | | | |
|---|---|---|---|
| 1. *Eleocharis interstincta* | 40 | Y | OBL |
| 2. *Coreopsis linifolia* | 10 | Y | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 50.0 = Total Cover | | |

50% of total cover: 25.0 20% of total cover: 10.0

| Woody Vine Stratum (Plot size: 30) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| | Total % Cover of: | | Multiply by: | |
|---|---|---|---|---|
| OBL species | 40.00 | x 1 = | 40.00 | |
| FACW species | 10.00 | x 2 = | 20.00 | |
| FAC species | 0.00 | x 3 = | 0.00 | |
| FACU species | 0.00 | x 4 = | 0.00 | |
| UPL species | 0.00 | x 5 = | 0.00 | |
| Column Totals: | 50.00 | (A) | 60.00 | (B) |

Prevalence Index = B/A = 1.2

**Hydrophytic Vegetation Indicators:**

- ✓ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ✓ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ✓ No ☐

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-02d

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-8 | 10YR 3/2 | 100 | | | | | C | |
| 12-18 | 10YR 3/2 | 95 | 10YR 3/6 | 5 | RM | M/PL | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** ✔ **No** ☐

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-02-20

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-02e

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.978914 Long: -95.386769 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ✔ | No ____ | Depth (inches): 2 |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: WB-02e

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| **Sapling/Shrub Stratum** (Plot size: 15) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| **Herb Stratum** (Plot size: 5) | | | |
| 1. *Eleocharis interstincta* | 40 | Y | OBL |
| 2. *Ambrosia psilostachya* | 40 | Y | FAC |
| 3. *Coreopsis linifolia* | 10 | N | FACW |
| 4. *Ranunculus sardous* | 7 | N | FAC |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 97.0 = Total Cover | | |
| 50% of total cover: 48.5 | 20% of total cover: 19.4 | | |
| **Woody Vine Stratum** (Plot size: 30) | | | |
| 1. *Rubus trivialis* | 3 | N | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 3.0 = Total Cover | | |
| 50% of total cover: 1.5 | 20% of total cover: 0.6 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 40.00 | x 1 = | 40.00 |
| FACW species | 10.00 | x 2 = | 20.00 |
| FAC species | 47.00 | x 3 = | 141.00 |
| FACU species | 3.00 | x 4 = | 12.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 100.00 (A) | | 213.00 (B) |

Prevalence Index = B/A = 2.13

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-02e

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 3/2 | 90 | 7.5YR 5/8 | 10 | RM | M/PL | C | |
| 12-18 | 10YR 3/2 | 100 | | | | | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☑ No ☐

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-02-20

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-02f

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.959855 Long: -95.398229 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ✔ | No ____ | Depth (inches): 2 |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: WB-02f

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Sapling/Shrub Stratum (Plot size: 15) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Herb Stratum (Plot size: 5) | | | |
|---|---|---|---|
| 1. *Eleocharis interstincta* | 40 | Y | OBL |
| 2. *Coreopsis linifolia* | 10 | Y | FACW |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 50.0 = Total Cover | | |

50% of total cover: 25.0 20% of total cover: 10.0

| Woody Vine Stratum (Plot size: 30) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 40.00 | x 1 = | 40.00 |
| FACW species | 10.00 | x 2 = | 20.00 |
| FAC species | 0.00 | x 3 = | 0.00 |
| FACU species | 0.00 | x 4 = | 0.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 50.00 (A) | | 60.00 (B) |

Prevalence Index = B/A = 1.2

**Hydrophytic Vegetation Indicators:**

- ✓ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ✓ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ✓ No ☐

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-02f

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 3/2 | 90 | 7.5YR 5/8 | 10 | RM | M/PL | C | |
| 12-18 | 10YR 3/2 | 100 | 10YR 3/6 | | | | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ✔ No ☐

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-02-20

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-02g

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.966048 Long: -95.427322 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ✔ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ✔ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ✔ | No ____ | Depth (inches): 2 |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: WB-02g

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Sapling/Shrub Stratum (Plot size: 15) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Herb Stratum (Plot size: 5) | | | |
|---|---|---|---|
| 1. *Eleocharis interstincta* | 80 | Y | OBL |
| 2. *Coreopsis linifolia* | 10 | N | FACW |
| 3. *Ranunculus sardous* | 10 | N | FAC |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 100.0 = Total Cover | | |

50% of total cover: 50.0 20% of total cover: 20.0

| Woody Vine Stratum (Plot size: 30) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 80.00 | x 1 = | 80.00 |
| FACW species | 10.00 | x 2 = | 20.00 |
| FAC species | 10.00 | x 3 = | 30.00 |
| FACU species | 0.00 | x 4 = | 0.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 100.00 (A) | | 130.00 (B) |

Prevalence Index = B/A = 1.3

**Hydrophytic Vegetation Indicators:**

- ✓ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ✓ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ✓ No ☐

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-02g

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 3/2 | 90 | 7.5YR 5/8 | 10 | RM | M/PL | C | |
| 12-18 | 10YR 3/2 | 100 | | | | | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** **Yes** ✔ **No** ☐

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-07-02

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-04-up

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Shoulder Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.962980 Long: -95.402559 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No ✔ | **Is the Sampled Area within a Wetland?** Yes ____ No ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ | |
| Wetland Hydrology Present? | Yes ____ | No ✔ | |

Remarks:
Edge of fill area

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
No water present

Remarks:
Change of hydrology due to fill

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

Sampling Point: WB-04-up

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| **Sapling/Shrub Stratum** (Plot size: 15) | | | |
| 1. *Baccharis halimifolia* | 10 | Y | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 10.0 = Total Cover | | |
| 50% of total cover: 5.0 | 20% of total cover: 2.0 | | |
| **Herb Stratum** (Plot size: 5) | | | |
| 1. *Cynodon dactylon* | 30 | Y | FACU |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 30.0 = Total Cover | | |
| 50% of total cover: 15.0 | 20% of total cover: 6.0 | | |
| **Woody Vine Stratum** (Plot size: 30) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0.00 | x 1 = | 0.00 |
| FACW species | 0.00 | x 2 = | 0.00 |
| FAC species | 10.00 | x 3 = | 30.00 |
| FACU species | 30.00 | x 4 = | 120.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 40.00 (A) | | 150.00 (B) |

Prevalence Index = B/A = 3.75

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☐ No ✓

Remarks: (If observed, list morphological adaptations below).

Mowed area off fill

**SOIL**

Sampling Point: WB-04-up

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 3/2 | 55 | 7.5YR 5/8 | 5 | C | M | CL | Fill layer |
| | | | 10YR 7/3 | 45 | C | M | CL | |
| 6-20 | 10YR 3/2 | 80 | 7.5YR 5/8 | 5 | C | M | CL | Fill layer |
| | | | 10YR 7/3 | 15 | C | M | CL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☐ No ☑

Remarks:

No wetland soil indicators. Fill

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-07-02

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-04-wet

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.962952 Long: -95.402577 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Vegetation too dense to detect secondary markers

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

Sampling Point: WB-04-wet

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Sapling/Shrub Stratum (Plot size: 15) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Herb Stratum (Plot size: 5) | | | |
|---|---|---|---|
| 1. *Sorghum halepense* | 45 | Y | FACU |
| 2. *Clinopodium brownei* | 20 | Y | OBL |
| 3. *Paspalum denticulatum* | 20 | Y | OBL |
| 4. *Lythrum alatum* | 15 | N | OBL |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 100.0 = Total Cover | | |

50% of total cover: 50.0 20% of total cover: 20.0

| Woody Vine Stratum (Plot size: 30) | | | |
|---|---|---|---|
| 1. *Vigna luteola* | 15 | Y | FACW |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 15.0 = Total Cover | | |

50% of total cover: 7.5 20% of total cover: 3.0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 75.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 55.00 | x 1 = | 55.00 |
| FACW species | 15.00 | x 2 = | 30.00 |
| FAC species | 0.00 | x 3 = | 0.00 |
| FACU species | 45.00 | x 4 = | 180.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 115.00 (A) | | 265.00 (B) |

Prevalence Index = B/A = 2.3

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Off fill

**SOIL**

Sampling Point: WB-04-wet

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 3/2 | 80 | 7.5YR 4/6 | 10 | C | M | C | Some fill |
| | | | 10YR 7/3 | 10 | C | M | C | |
| 12-20 | 10YR 3/2 | 90 | 7.5YR 4/6 | 5 | C | M | C | Some fill |
| | | | 10YR 7/3 | 5 | C | M | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☑ No ☐

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-07-02

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-05-up

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Rise Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.961228 Long: -95.392544 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: No

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ____ No ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

No water present

Remarks:

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

Sampling Point: WB-05-up

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30 ) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| **Sapling/Shrub Stratum** (Plot size: 15 ) | | | |
| 1. *Baccharis halimifolia* | 20 | Y | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 20.0 = Total Cover | | |
| 50% of total cover: 10.0 | 20% of total cover: 4.0 | | |
| **Herb Stratum** (Plot size: 5 ) | | | |
| 1. *Cynodon dactylon* | 40 | Y | FACU |
| 2. *Ambrosia psilostachya* | 30 | Y | FAC |
| 3. *Cyperus articulatus* | 10 | N | OBL |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 80.0 = Total Cover | | |
| 50% of total cover: 40.0 | 20% of total cover: 16.0 | | |
| **Woody Vine Stratum** (Plot size: 30 ) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.67 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 10.00 | x 1 = | 10.00 |
| FACW species | 0.00 | x 2 = | 0.00 |
| FAC species | 50.00 | x 3 = | 150.00 |
| FACU species | 40.00 | x 4 = | 160.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 100.00 (A) | | 320.00 (B) |

Prevalence Index = B/A = 3.2

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-05-up

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-20 | 10YR 3/2 | 90 | 7.5YR 4/6 | 10 | C | M | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☐ No ☑

Remarks:

No wetland soil indicators

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-07-02

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-05-wet

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.961232 Long: -95.392520 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: No

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

Vegetation too dense to detect secondary markers

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

Sampling Point: WB-05-wet

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| **Sapling/Shrub Stratum** (Plot size: 15) | | | |
| 1. *Baccharis halimifolia* | 10 | Y | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 10.0 = Total Cover | | |
| 50% of total cover: 5.0 | 20% of total cover: 2.0 | | |
| **Herb Stratum** (Plot size: 5) | | | |
| 1. *Sporobolus virginicus* | 80 | Y | FACW |
| 2. *Paspalum denticulatum* | 5 | N | OBL |
| 3. *Mimosa strigillosa* | 5 | N | FAC |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 90.0 = Total Cover | | |
| 50% of total cover: 45.0 | 20% of total cover: 18.0 | | |
| **Woody Vine Stratum** (Plot size: 30) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 5.00 | x 1 = | 5.00 |
| FACW species | 80.00 | x 2 = | 160.00 |
| FAC species | 15.00 | x 3 = | 45.00 |
| FACU species | 0.00 | x 4 = | 0.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 100.00 (A) | | 210.00 (B) |

Prevalence Index = B/A = 2.1

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☑ 2 - Dominance Test is >50%
- ☑ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☑ No ☐

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-05-wet

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 3/1 | 90 | 7.5YR 4/6 | 10 | C | M | C | |
| 12-20 | 10YR 3/2 | 90 | 7.5YR 4/6 | 10 | C | M | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☑ No ☐

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-07-02

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-06-up

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Rise Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.961239 Long: -95.392454 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: No

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No ✔ | **Is the Sampled Area within a Wetland?** Yes ____ No ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ | |
| Wetland Hydrology Present? | Yes ____ | No ✔ | |

Remarks:
Fill material used for dirt road

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
No water present

Remarks:
Change of hydrology due to fill

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

Sampling Point: WB-06-up

| | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| **Tree Stratum** (Plot size: 30 ) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| | 50% of total cover: 0.0 | 20% of total cover: 0.0 | |
| **Sapling/Shrub Stratum** (Plot size: 15 ) | | | |
| 1. *Baccharis halimifolia* | 20 | Y | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 20.0 = Total Cover | | |
| | 50% of total cover: 10.0 | 20% of total cover: 4.0 | |
| **Herb Stratum** (Plot size: 5 ) | | | |
| 1. *Cynodon dactylon* | 30 | Y | FACU |
| 2. *Ambrosia psilostachya* | 20 | Y | FAC |
| 3. *Solanum americanum* | 20 | Y | FACU |
| 4. *Cyperus articulatus* | 10 | N | OBL |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 80.0 = Total Cover | | |
| | 50% of total cover: 40.0 | 20% of total cover: 16.0 | |
| **Woody Vine Stratum** (Plot size: 30 ) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |
| | 50% of total cover: 0.0 | 20% of total cover: 0.0 | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 10.00 | x 1 = | 10.00 |
| FACW species | 0.00 | x 2 = | 0.00 |
| FAC species | 40.00 | x 3 = | 120.00 |
| FACU species | 50.00 | x 4 = | 200.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 100.00 (A) | | 330.00 (B) |

Prevalence Index = B/A = 3.3

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☐ No ✓

Remarks: (If observed, list morphological adaptations below).

Raised dirt road between ditches

**SOIL**

Sampling Point: WB-06-up

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 3/2 | 50 | 7.5YR 5/8 | 5 | C | M | CL | Fill layer |
| | | | 10YR 7/3 | 45 | C | M | CL | |
| 6-20 | 10YR 3/2 | 70 | 7.5YR 5/8 | 5 | C | M | CL | Fill later |
| | | | 10YR 7/3 | 25 | C | M | CL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☐ No ☑

Remarks:

No wetland soil indicators. Fill

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-07-02

Applicant/Owner: Monarch Energy State: Texas Sampling Point: WB-06-wet

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Ditch Local relief (concave, convex, none): None Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.961232 Long: -95.392360 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: No

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ✔ No ____ |
| Hydric Soil Present? | Yes ✔ | No ____ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ✔ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: WB-06-wet

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| Sapling/Shrub Stratum (Plot size: 15) | | | |
| 1. *Baccharis halimifolia* | 10 | Y | FAC |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 10.0 = Total Cover | | |
| 50% of total cover: 5.0 | 20% of total cover: 2.0 | | |
| Herb Stratum (Plot size: 5) | | | |
| 1. *Sporobolus virginicus* | 80 | Y | FACW |
| 2. *Paspalum denticulatum* | 5 | N | OBL |
| 3. *Mimosa strigillosa* | 5 | N | FAC |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 90.0 = Total Cover | | |
| 50% of total cover: 45.0 | 20% of total cover: 18.0 | | |
| Woody Vine Stratum (Plot size: 30) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 5.00 | x 1 = | 5.00 |
| FACW species | 80.00 | x 2 = | 160.00 |
| FAC species | 15.00 | x 3 = | 45.00 |
| FACU species | 0.00 | x 4 = | 0.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 100.00 (A) | | 210.00 (B) |

Prevalence Index = B/A = 2.1

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ✓ 2 - Dominance Test is >50%
- ✓ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ✓ No ☐

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: WB-06-wet

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 3/1 | 90 | 7.5YR 4/6 | 10 | C | M | C | |
| 12-20 | 10YR 3/2 | 90 | 7.5YR 4/6 | 10 | C | M | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☑ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

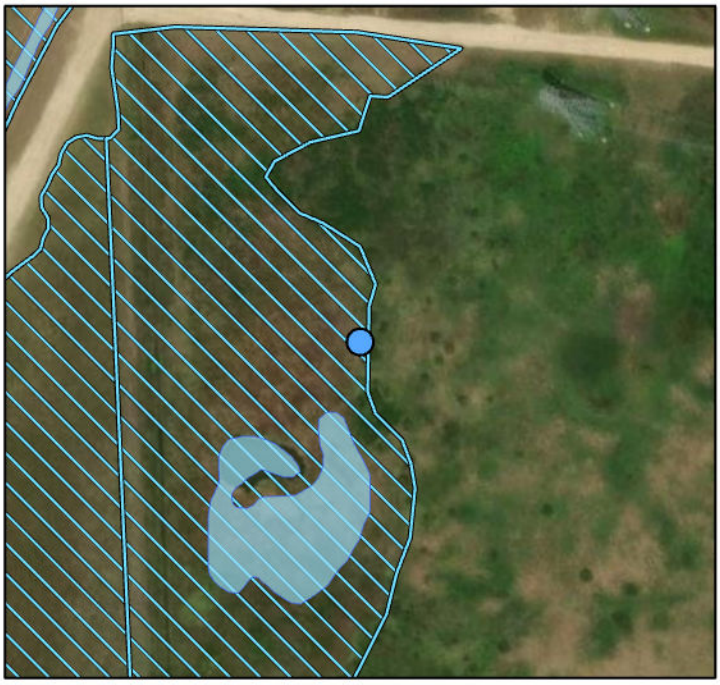
Depth (inches): _____

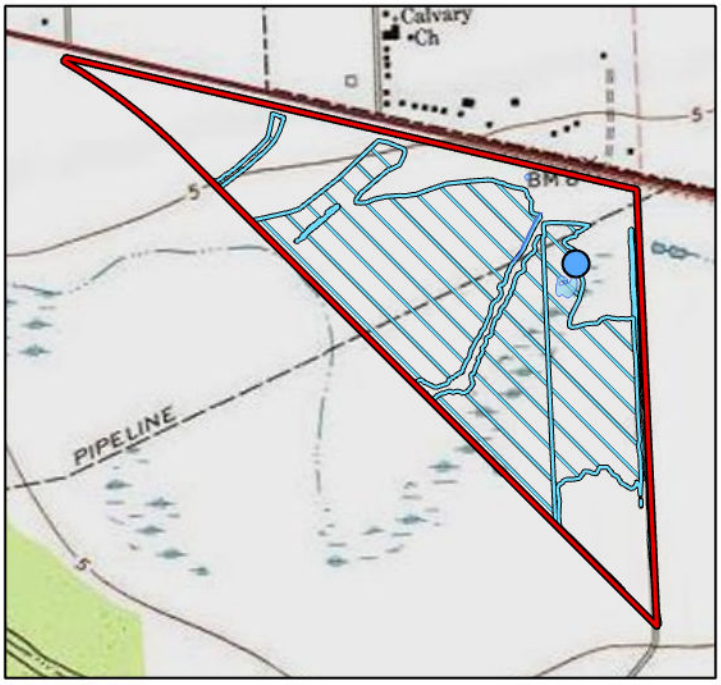
**Hydric Soil Present?** Yes ☑ No ☐

Remarks:

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

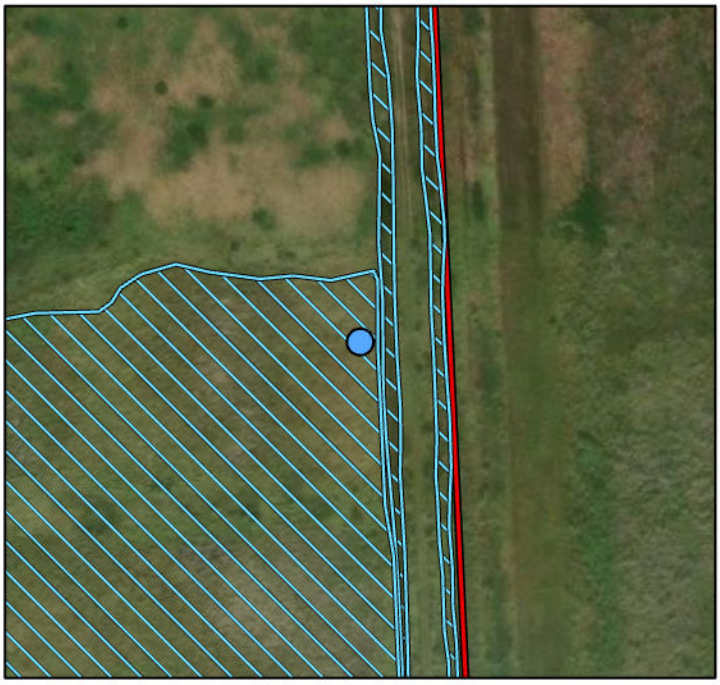



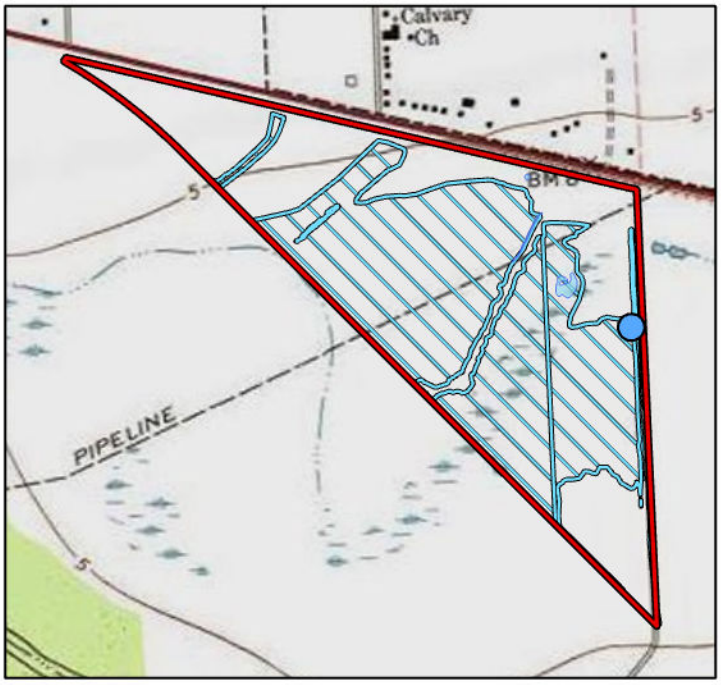



Map Document: N:\00050939.001_GIS_ArcPro\R00050939_040_WetlandPhotologsUpdate_20240715\R00050939_040_WetlandPhotologsUpdate_20240715.aprx 8/8/2024 11:06 AM JBEpstein

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

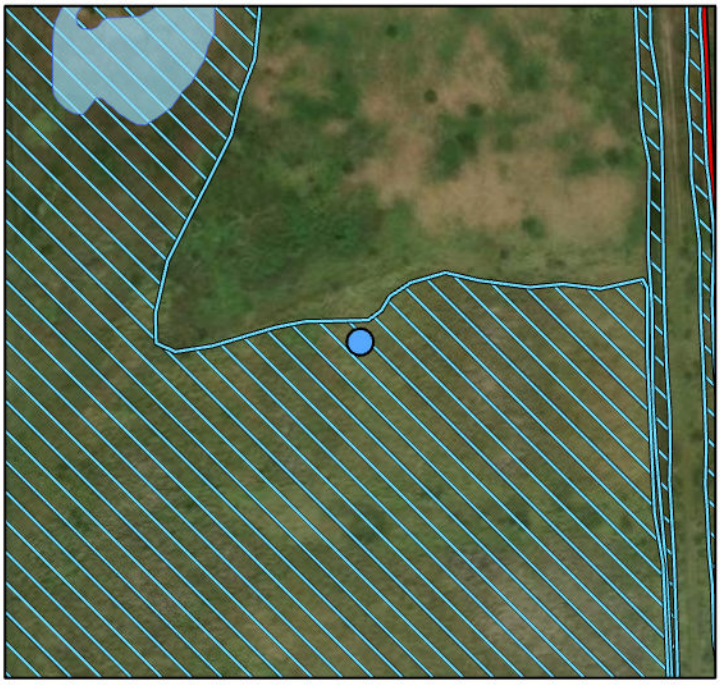
Westwood
Toll Free (888) 937-5150 westwoodps.com

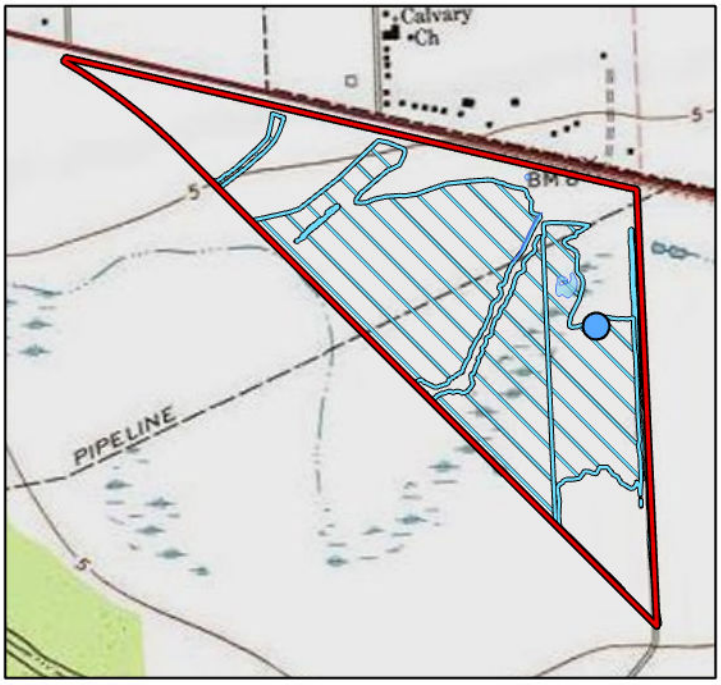





# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

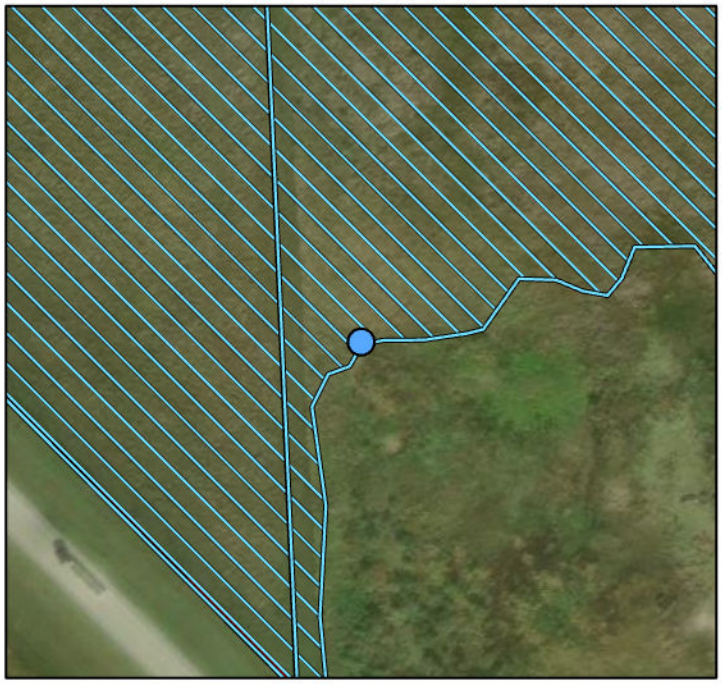



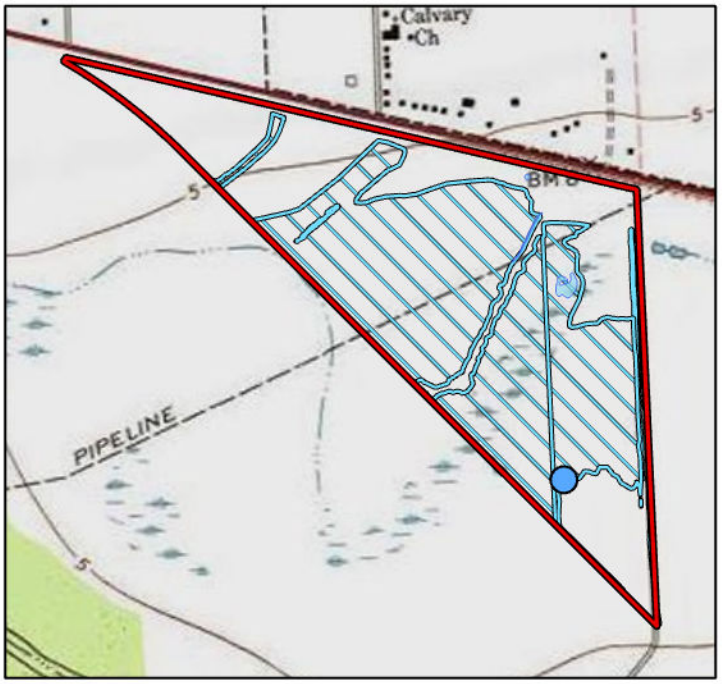



Map Document: N:\00050939.001_GIS_ArcPro\R00050939_040_WetlandPhotologsUpdate_20240715\R00050939_040_WetlandPhotologsUpdate_20240715.aprx 8/6/2024 11:06 AM JBEpstein

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

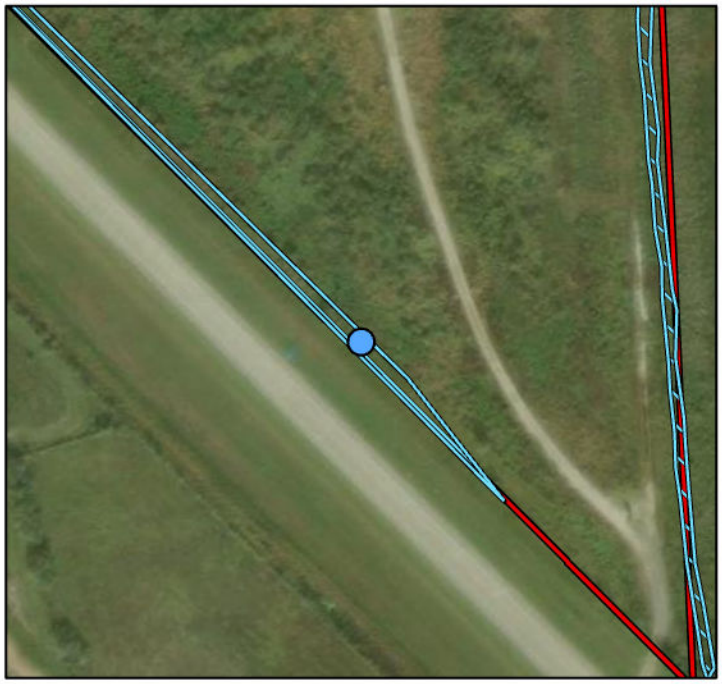
Westwood
Toll Free (888) 937-5150 westwoodps.com

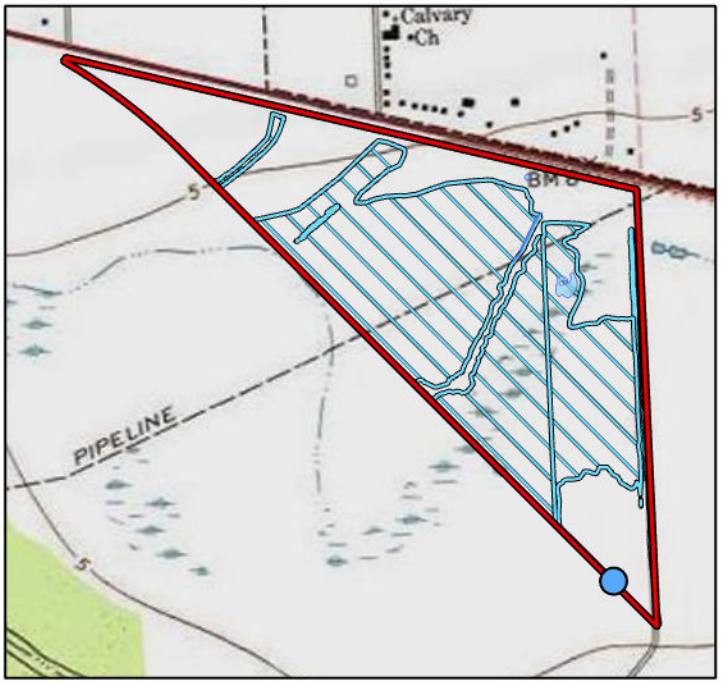





# Fairlane Green Hydrogen Project
# Delineation Site Photograph

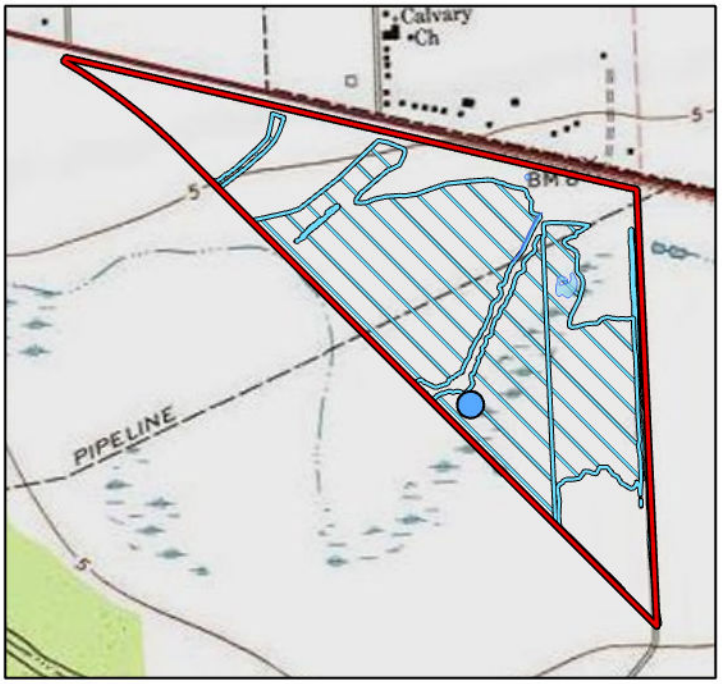
Westwood
Toll Free (888) 937-5150 westwoodps.com



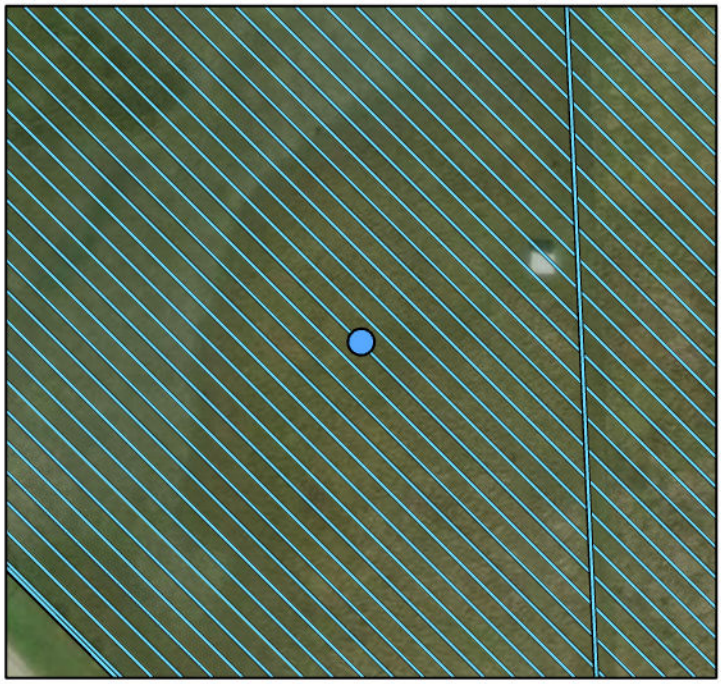
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

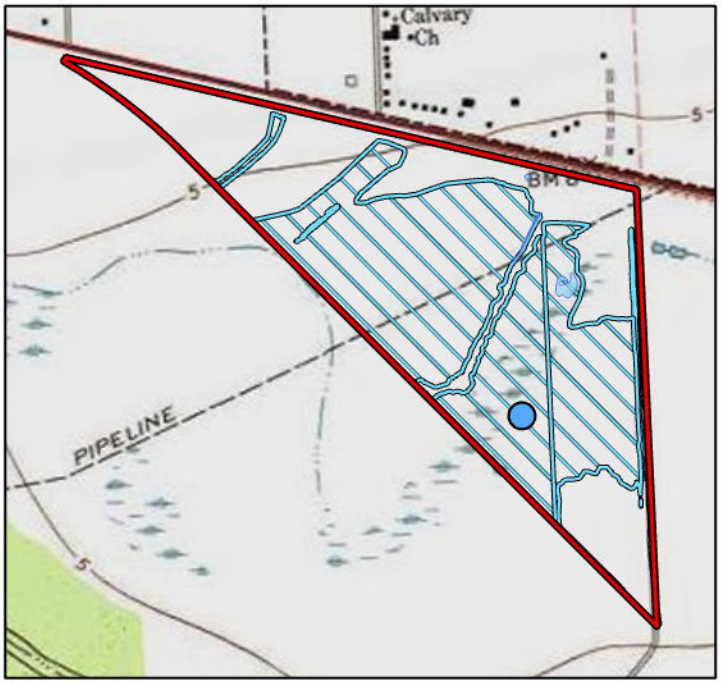
Westwood
Toll Free (888) 937-5150 westwoodps.com

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

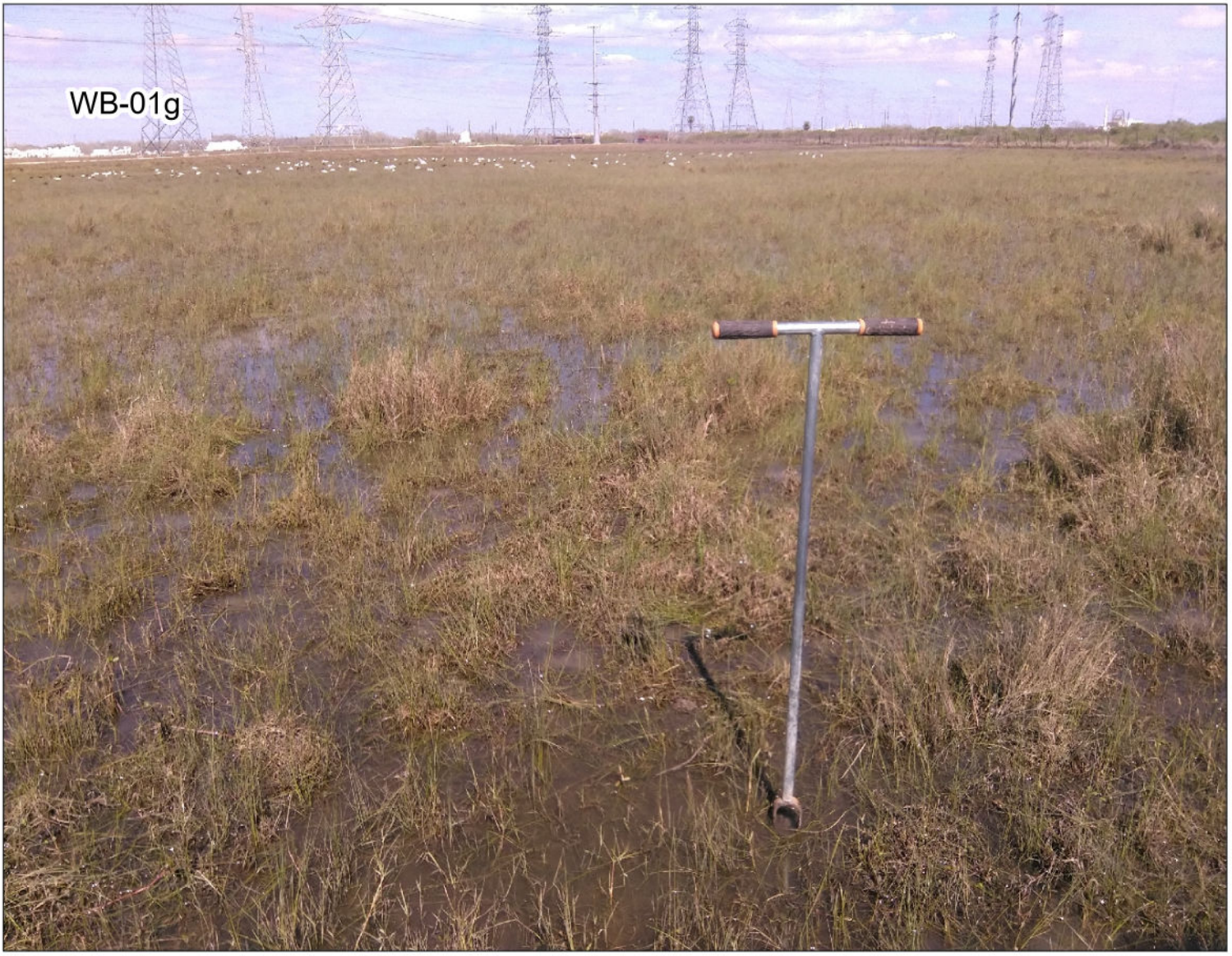



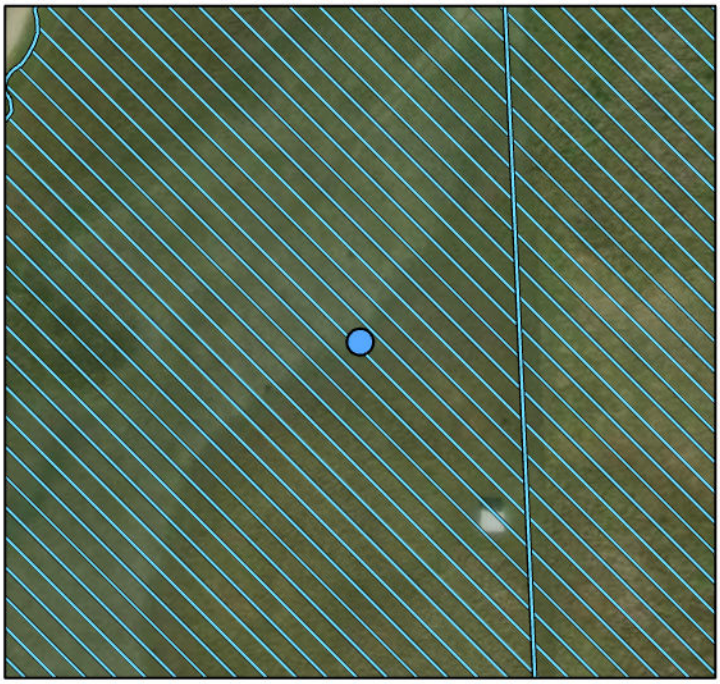


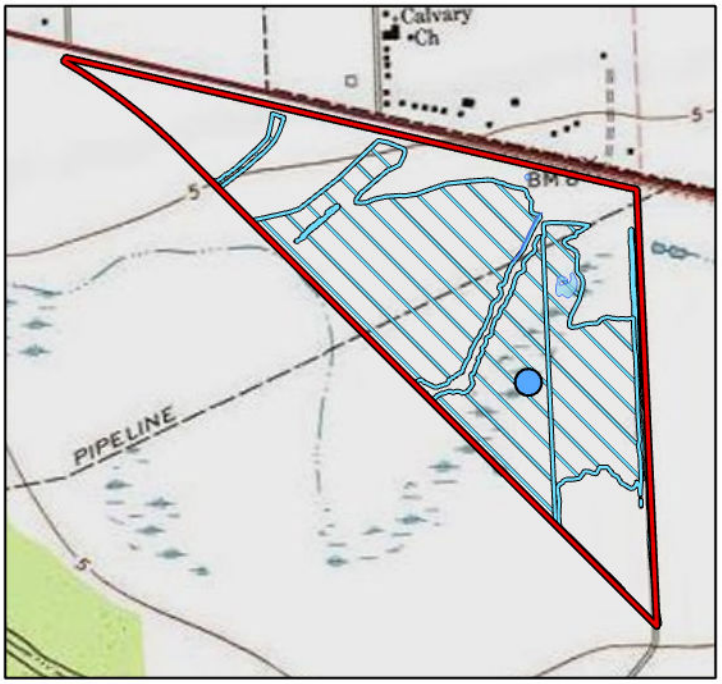

Map Document: N:\0050939.001_GIS_ArcPro\R0050939_040_WetlandPhotologsUpdate_20240715\R0050939_040_WetlandPhotologsUpdate_20240715.aprx 8/6/2024 11:07 AM JBEpstein

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

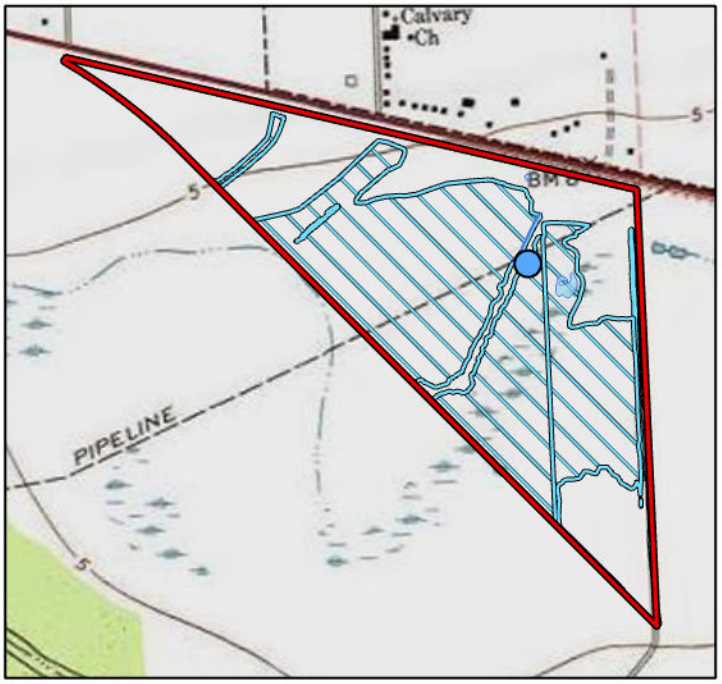




# Fairlane Green Hydrogen Project
# Delineation Site Photograph

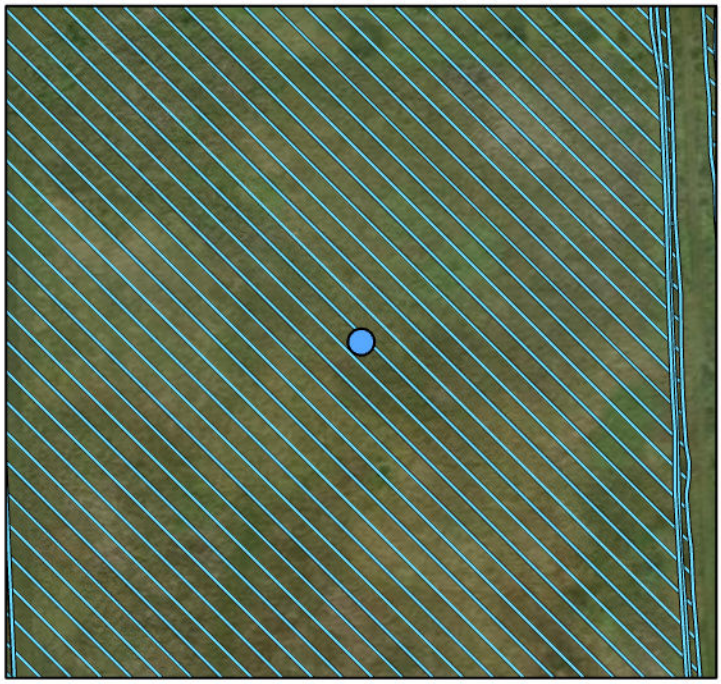
Westwood
Toll Free (888) 937-5150 westwoodps.com

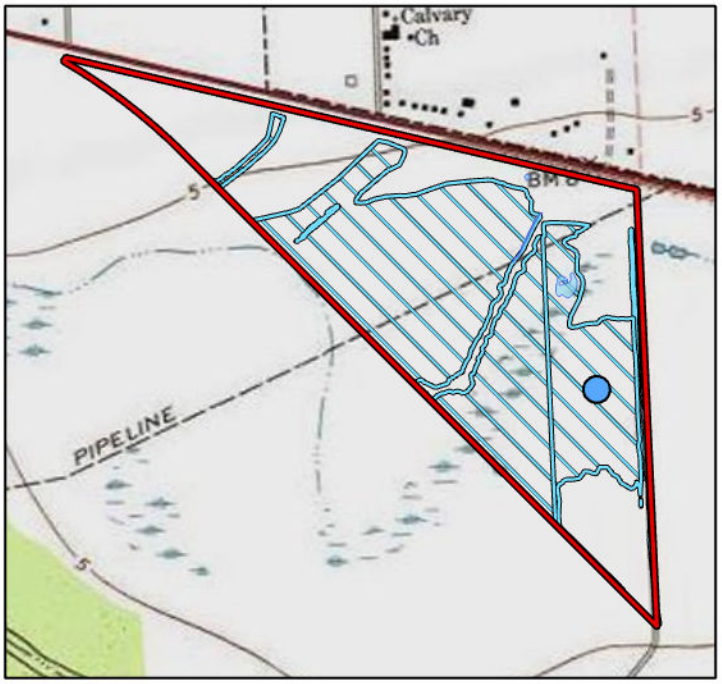



# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

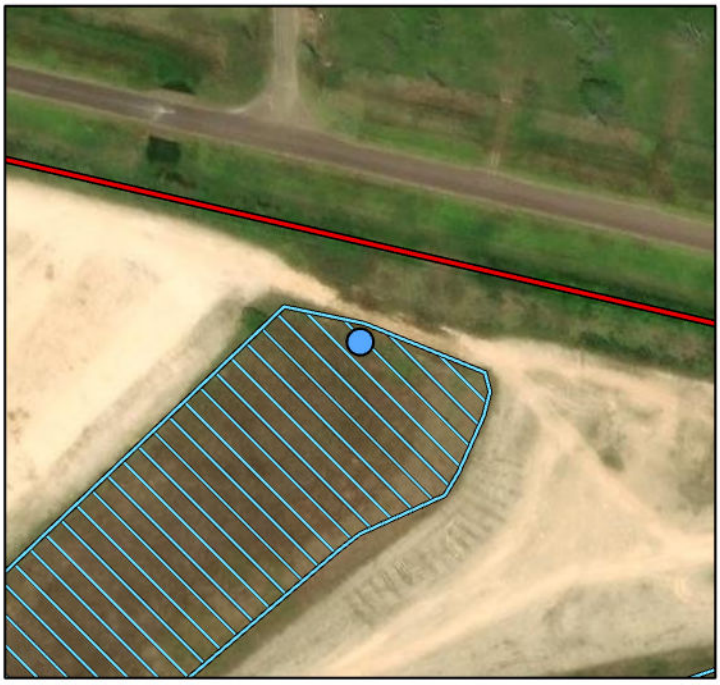
WB-01i

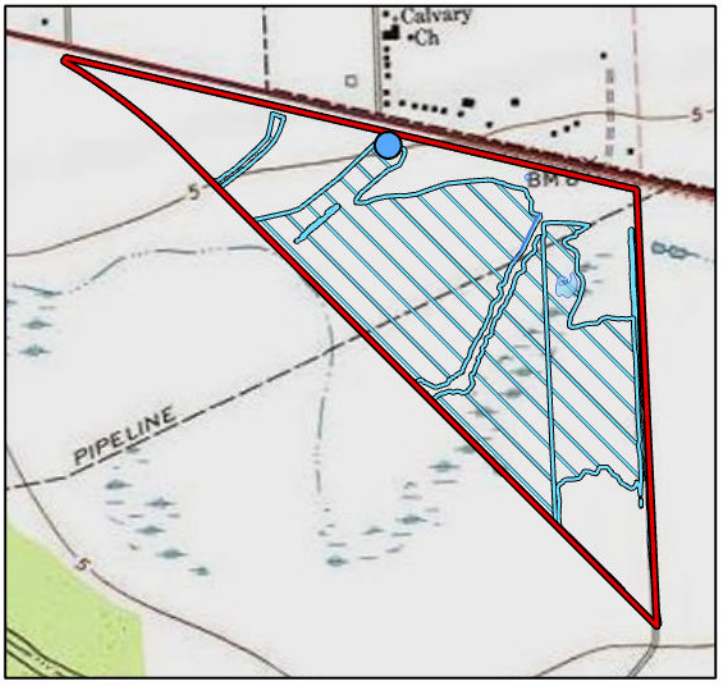




# Fairlane Green Hydrogen Project
# Delineation Site Photograph

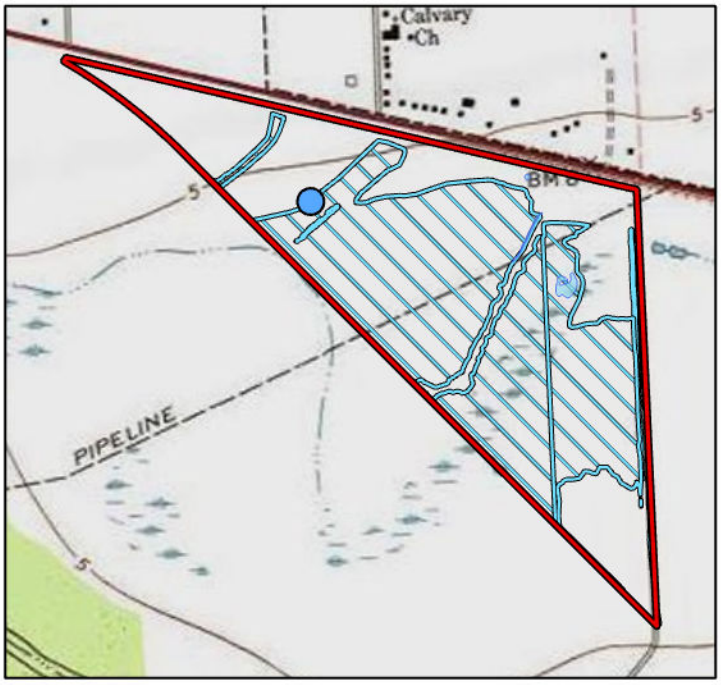
Westwood
Toll Free (888) 937-5150 westwoodps.com



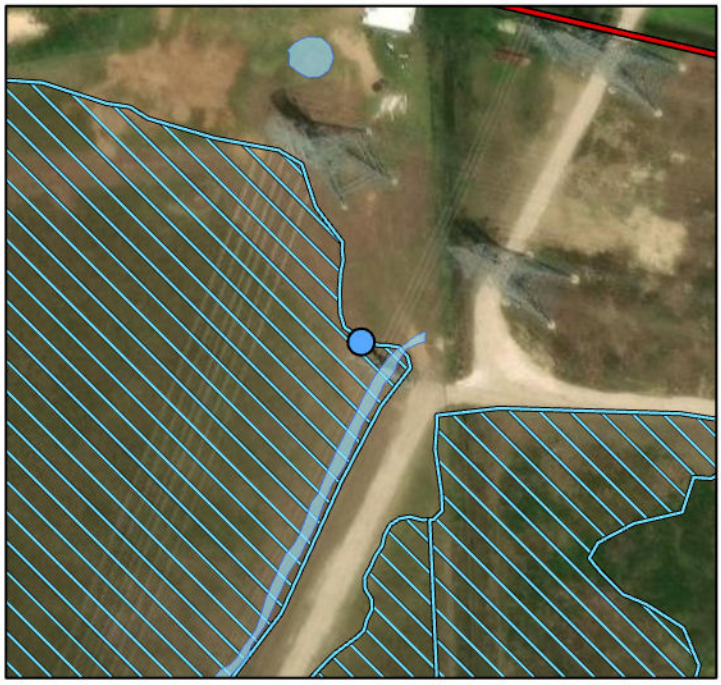
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

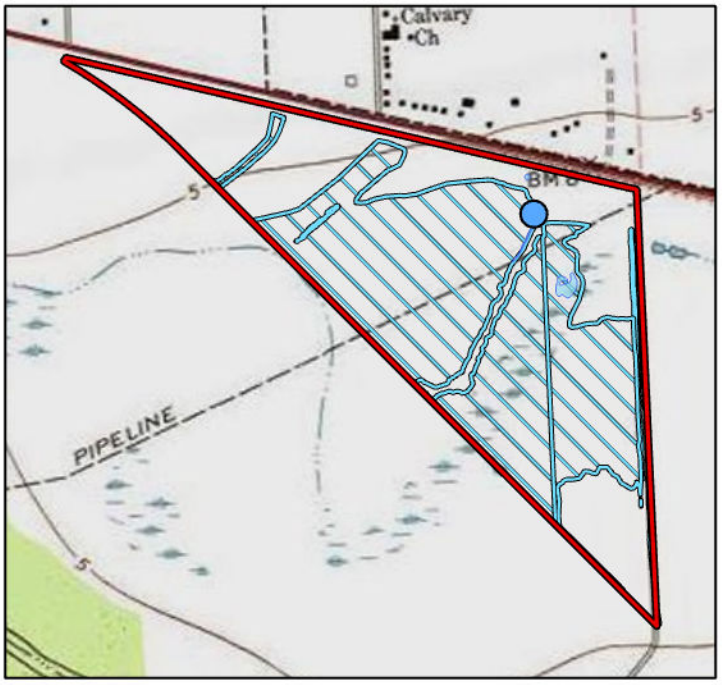
Westwood
Toll Free (888) 937-5150 westwoodps.com

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

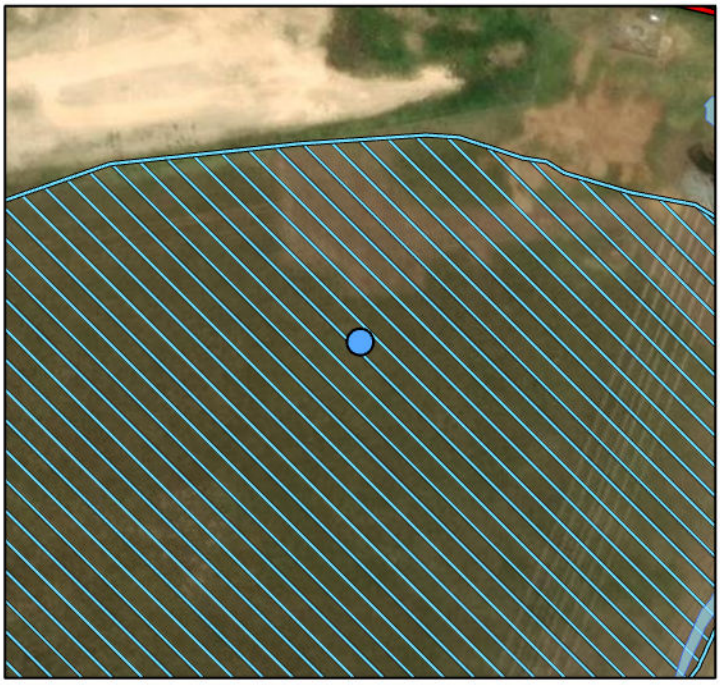
Westwood
Toll Free (888) 937-5150 westwoodps.com

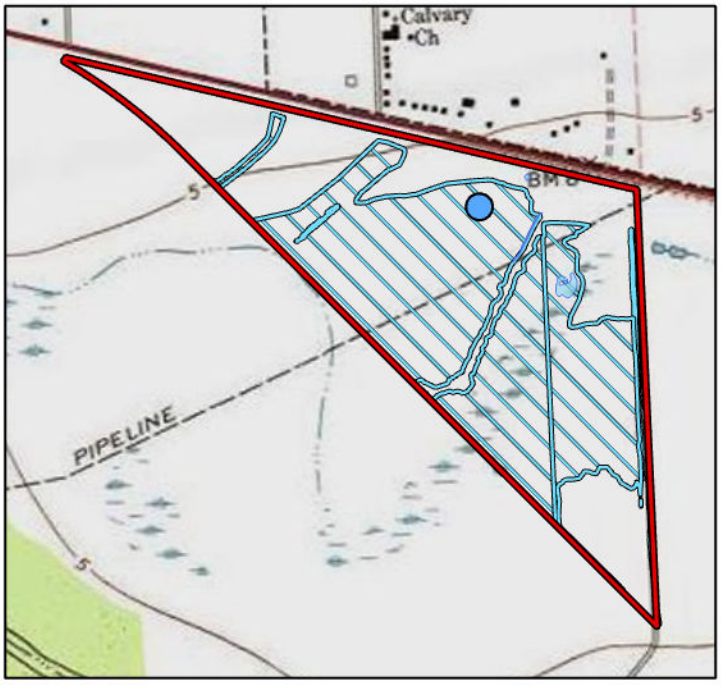





# Fairlane Green Hydrogen Project
# Delineation Site Photograph

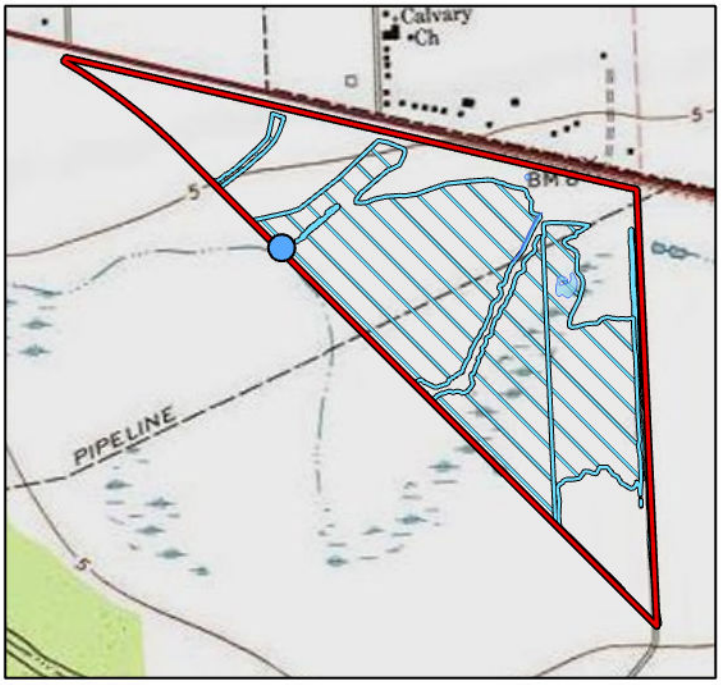
Westwood
Toll Free (888) 937-5150 westwoodps.com



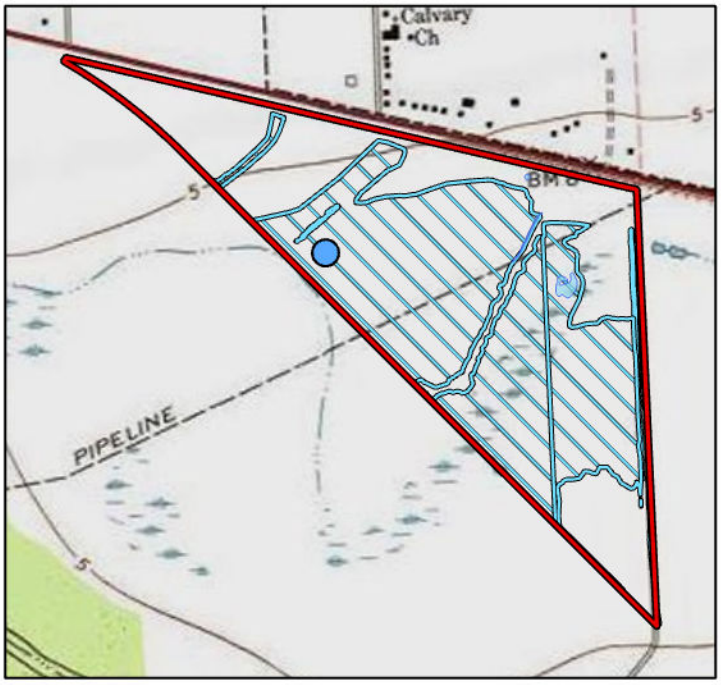
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

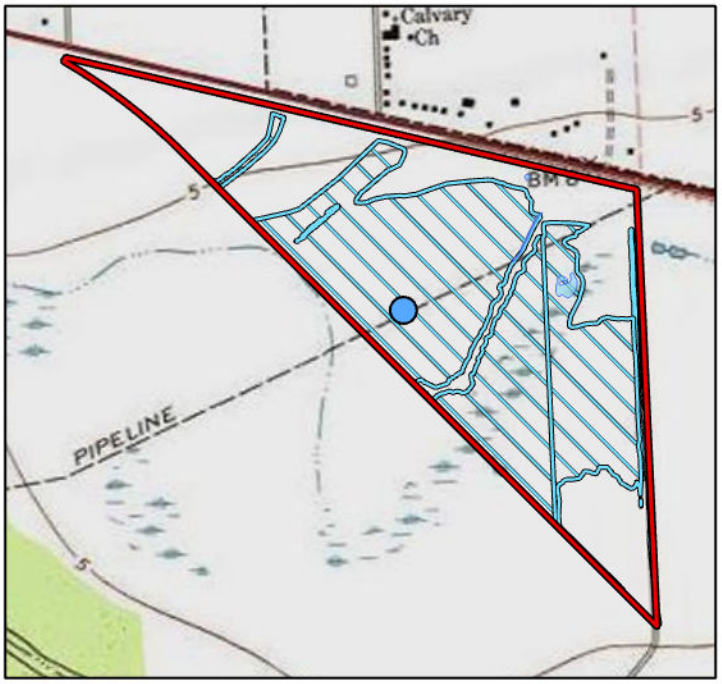
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

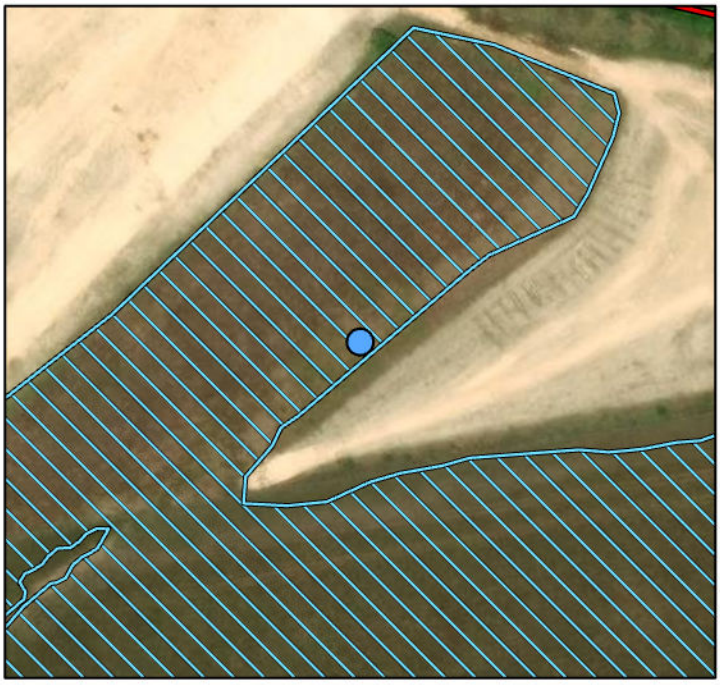
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

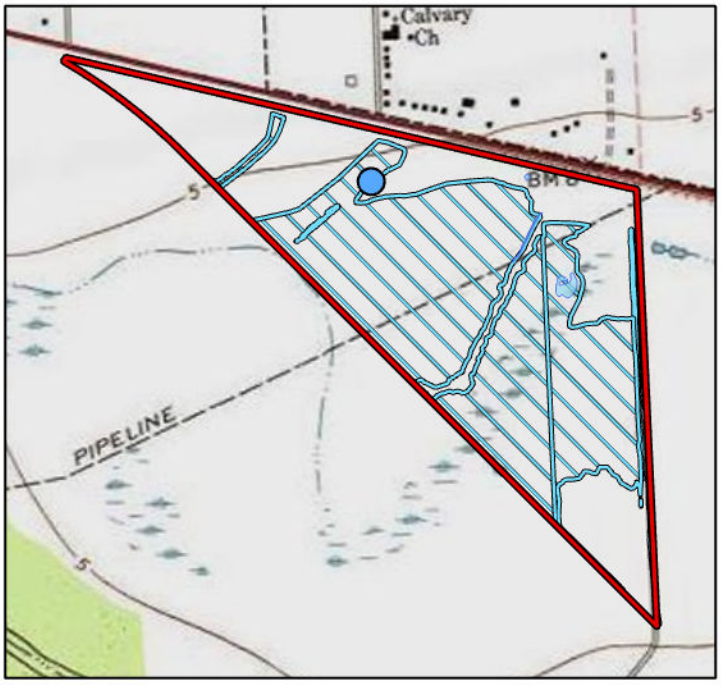
Westwood
Toll Free (888) 937-5150 westwoodps.com

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

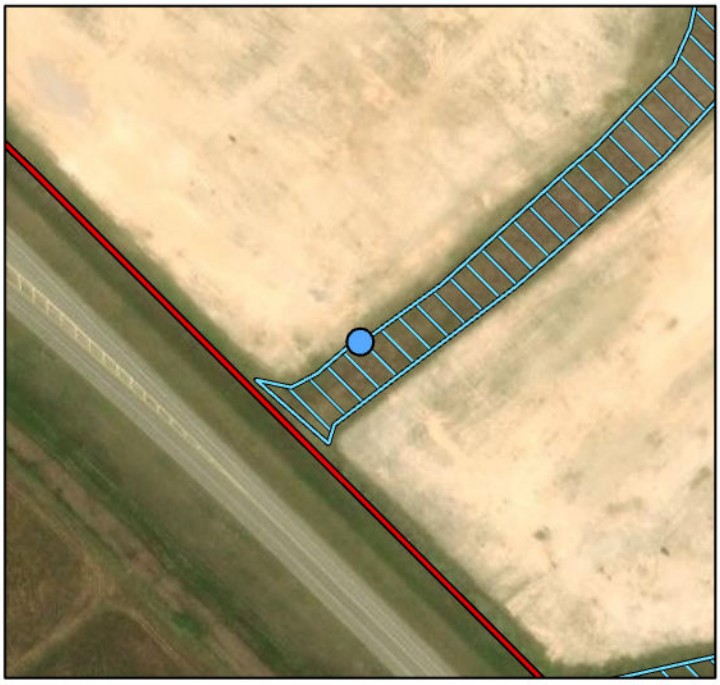
Westwood
Toll Free (888) 937-5150 westwoodps.com

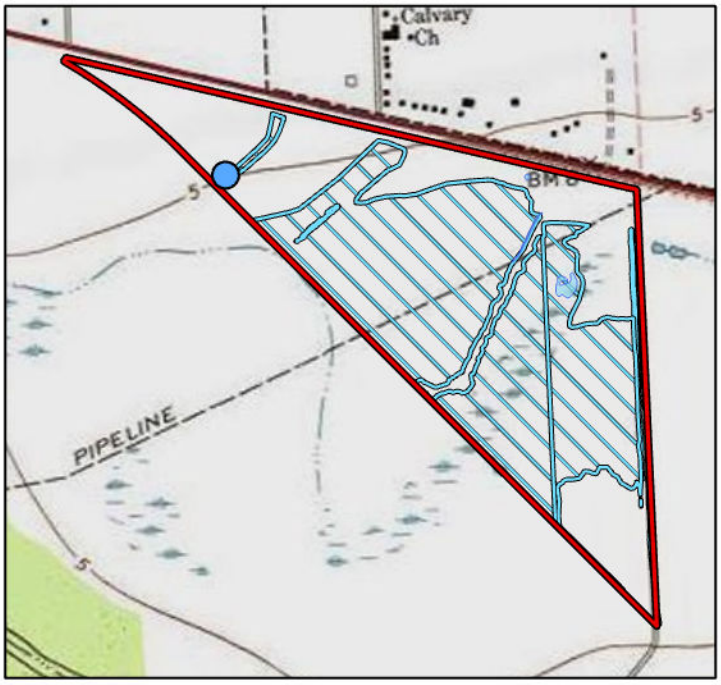





# Fairlane Green Hydrogen Project
# Delineation Site Photograph

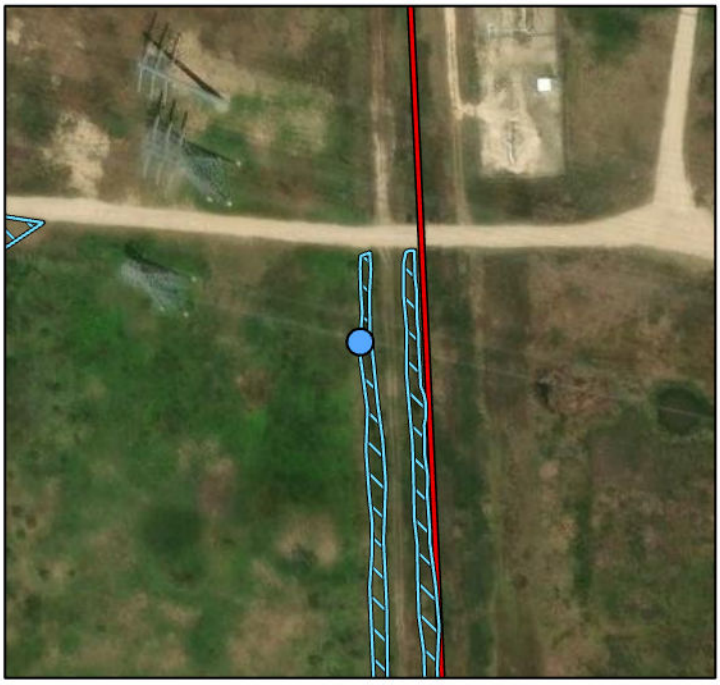
Westwood
Toll Free (888) 937-5150 westwoodps.com

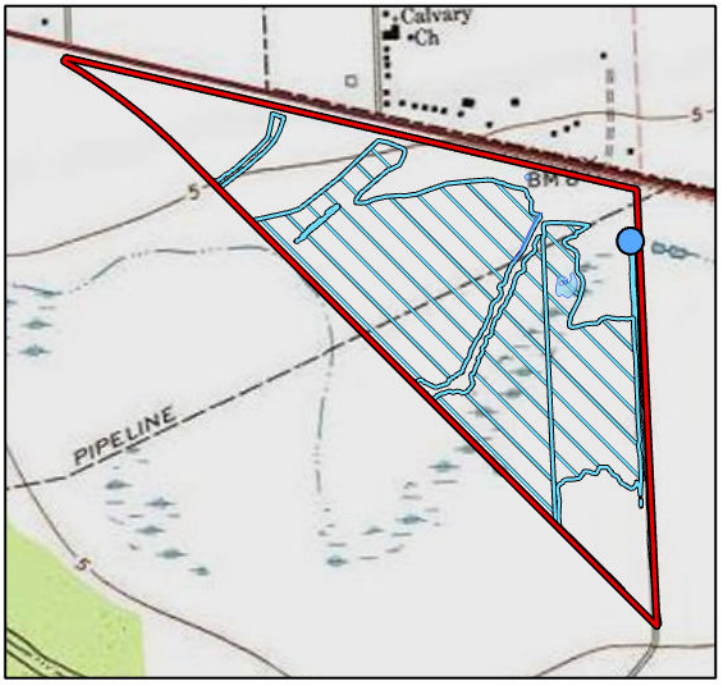





# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

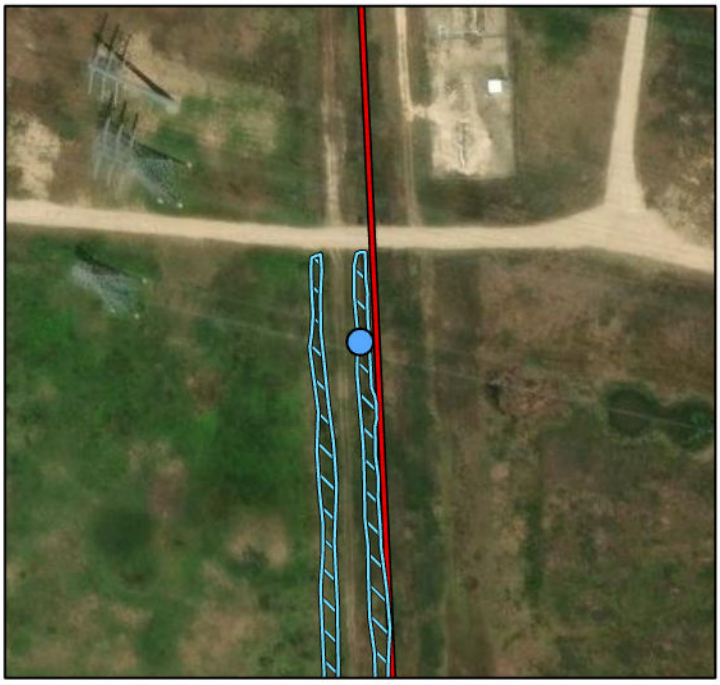



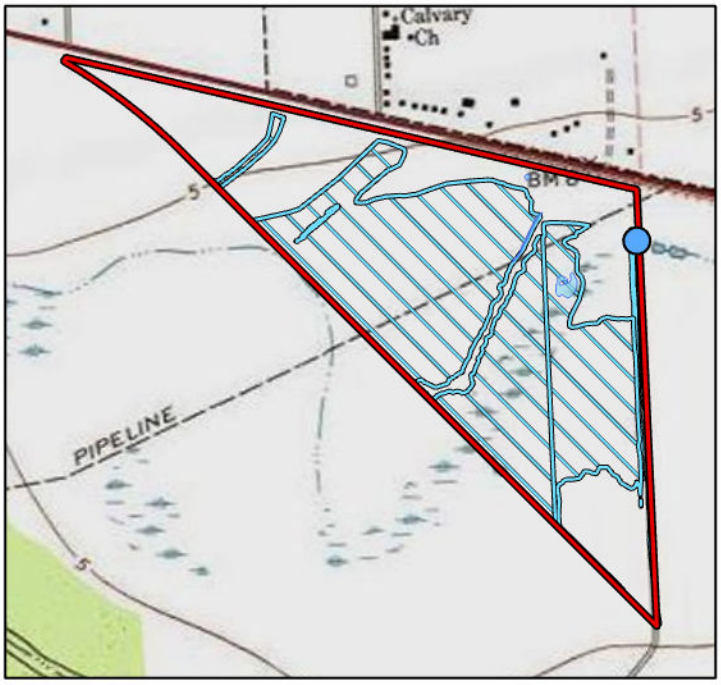



Map Document: N:\0050939.001_GIS_ArcPro\R0050939_040_WetlandPhotologsUpdate_20240715\R0050939_040_WetlandPhotologsUpdate_20240715.aprx 8/6/2024 11:08 AM JBEpstein

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

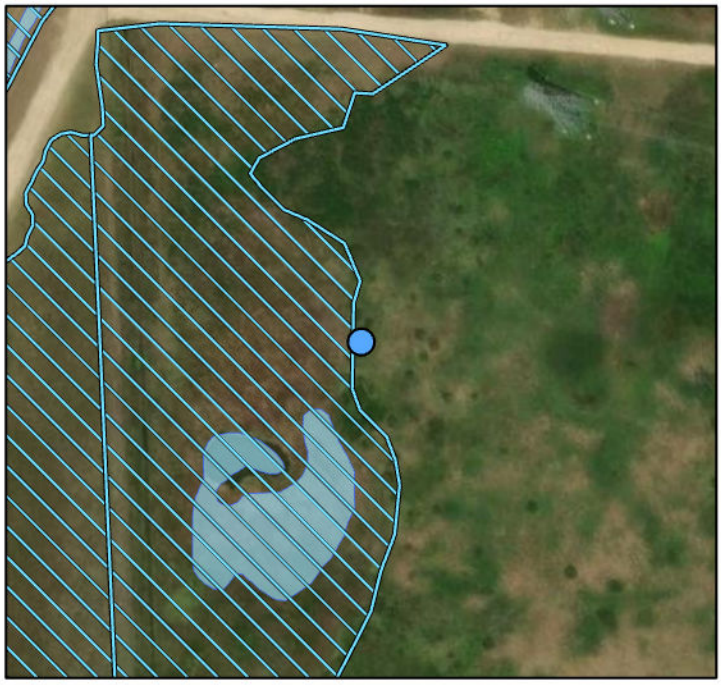
Westwood
Toll Free (888) 937-5150 westwoodps.com

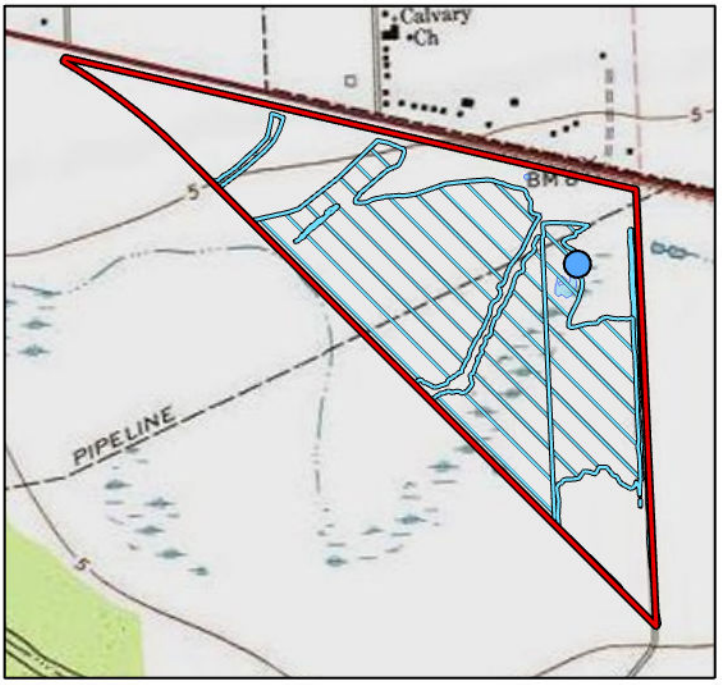





# Fairlane Green Hydrogen Project
# Delineation Site Photograph

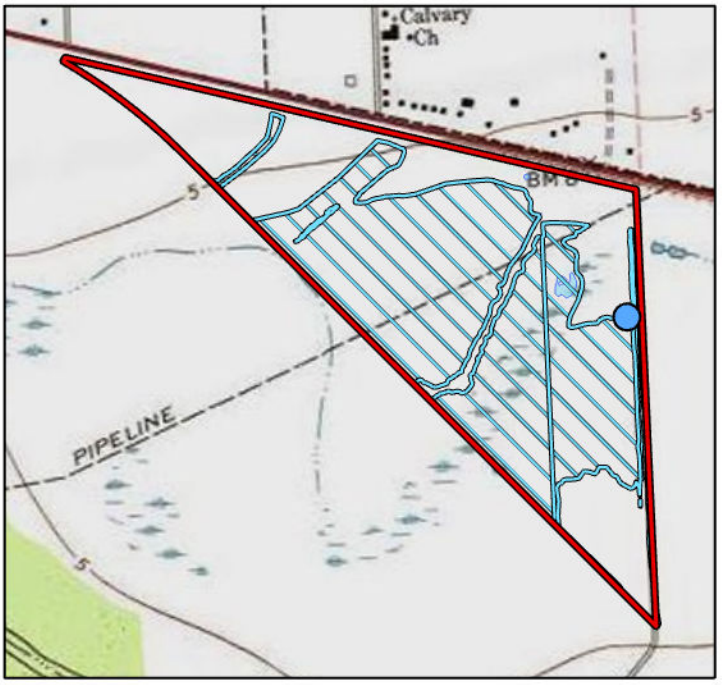
Westwood
Toll Free (888) 937-5150 westwoodps.com



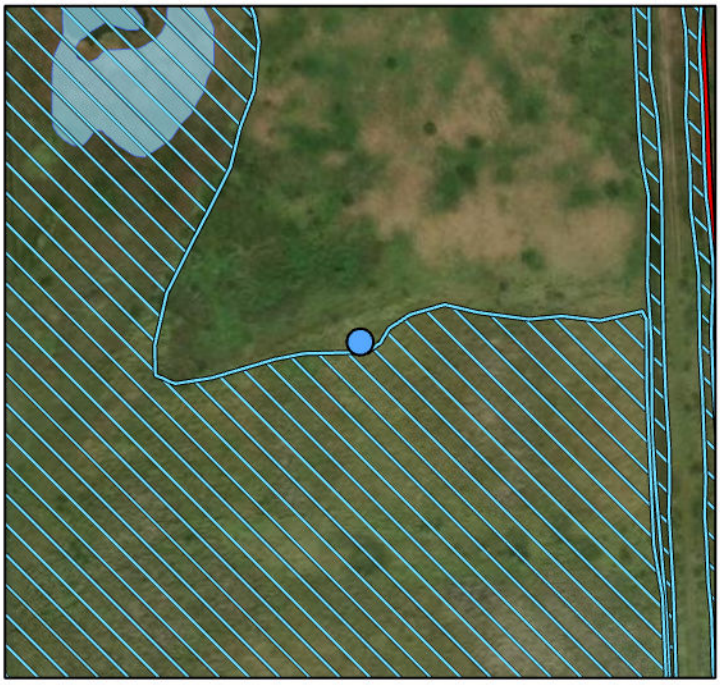
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

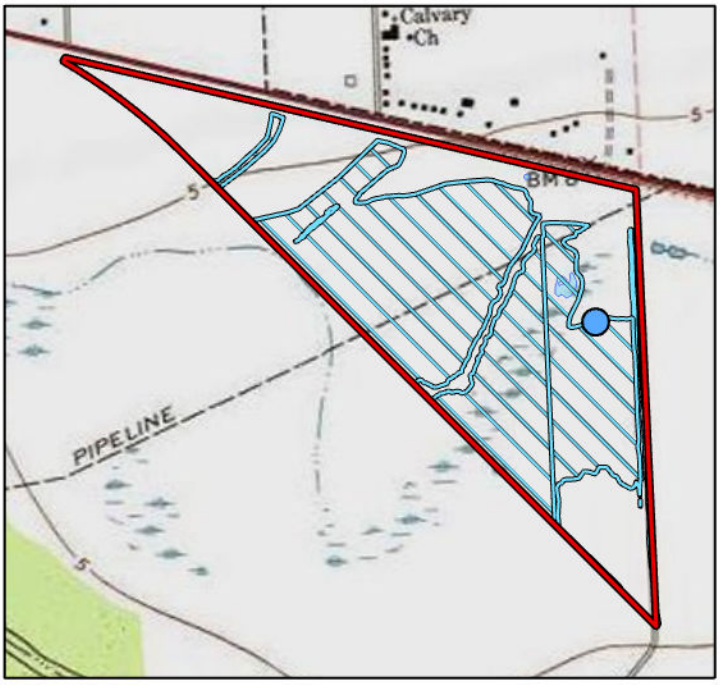
Westwood
Toll Free (888) 937-5150 westwoodps.com

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

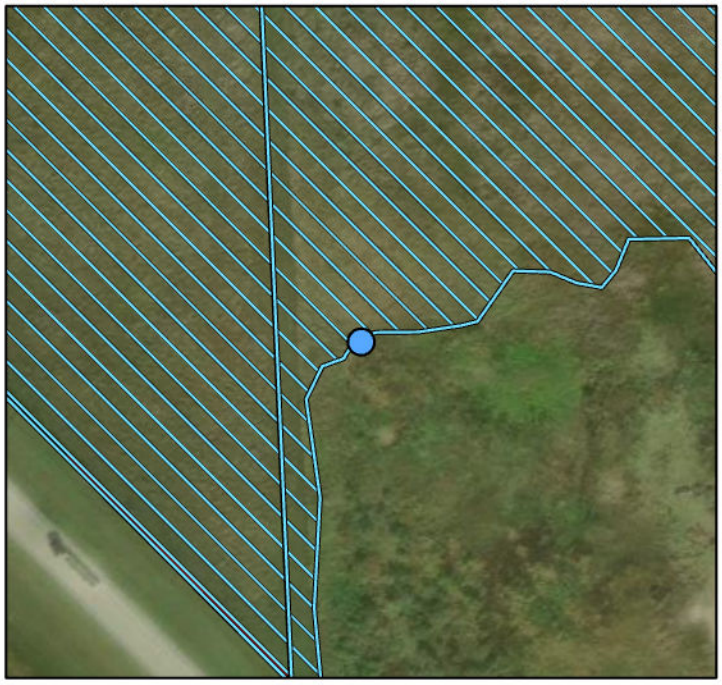
Westwood
Toll Free (888) 937-5150 westwoodps.com

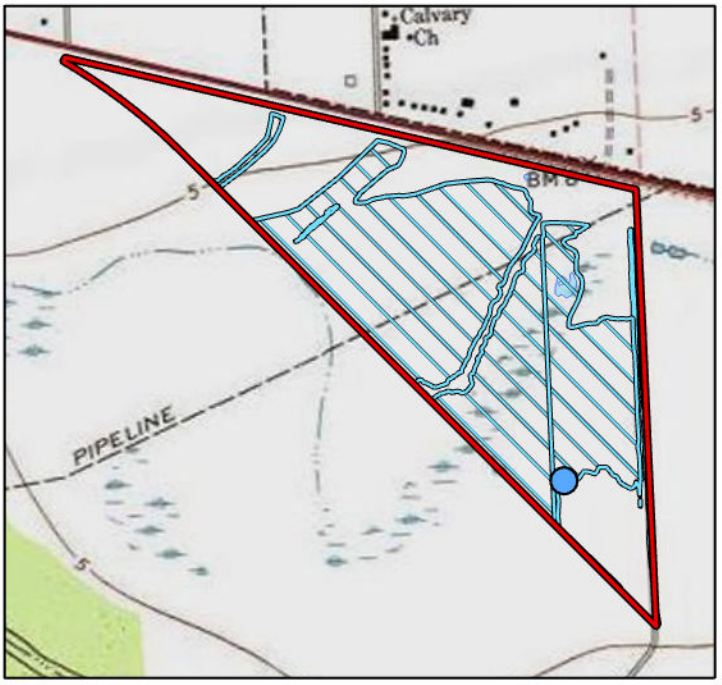





# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

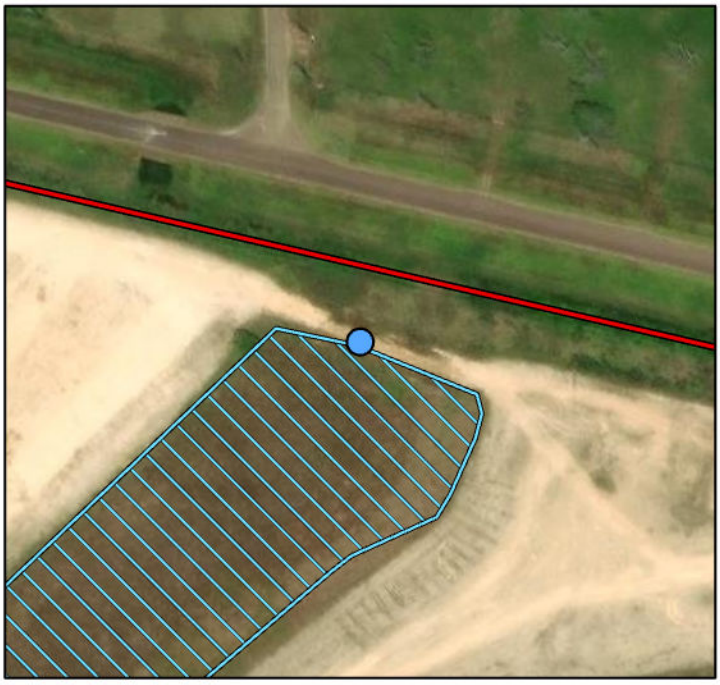



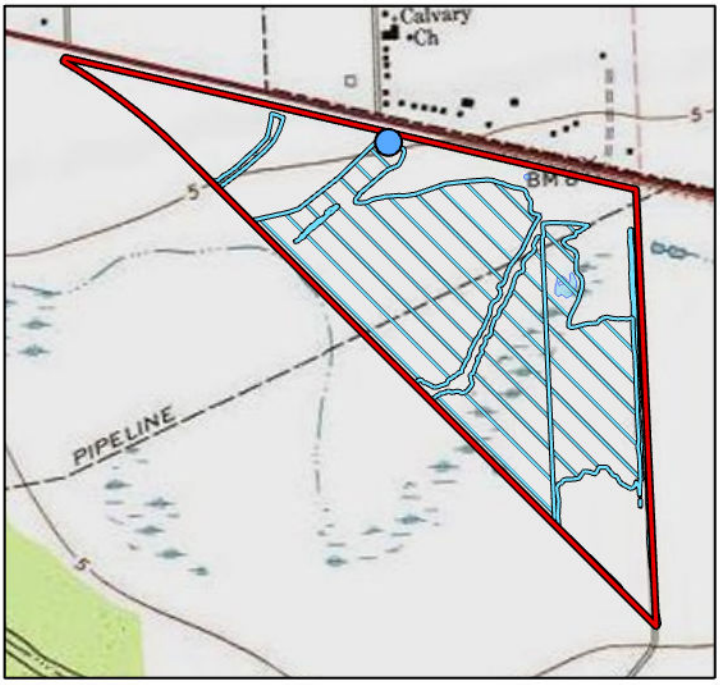



Map Document: N:\0050939.001_GIS_ArcPro\R0050939_040_WetlandPhotologsUpdate_20240715\R0050939_040_WetlandPhotologsUpdate_20240715.aprx 8/6/2024 11:11 AM JBEpstein

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

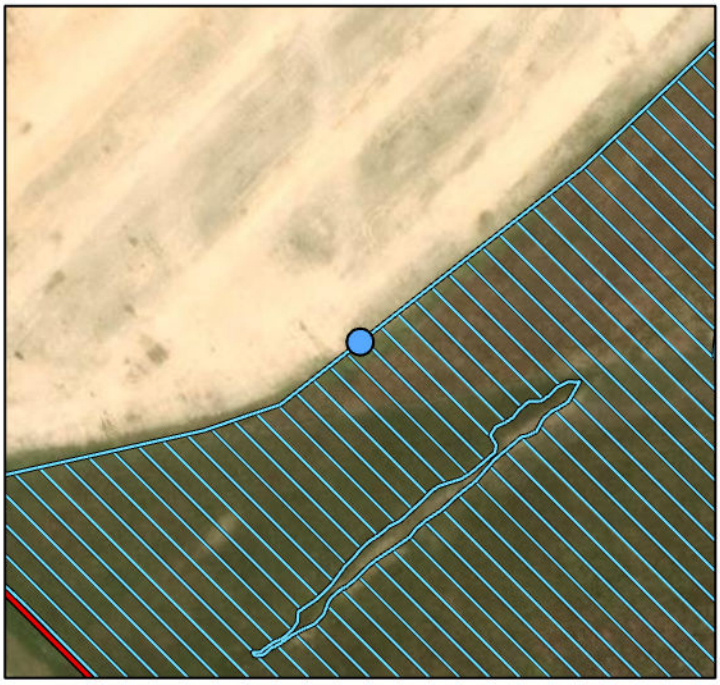



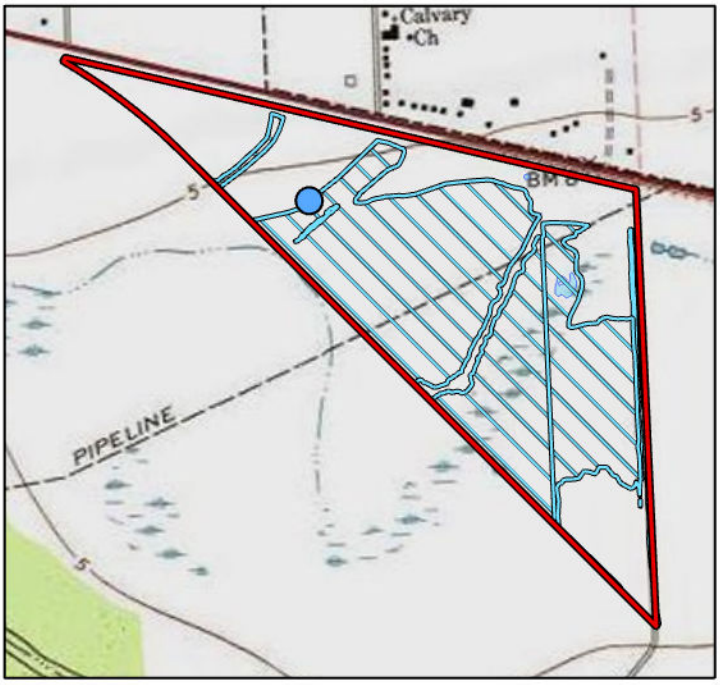



Map Document: N:\0050939.001_GIS_ArcPro\R0050939_040_WetlandPhotologsUpdate_20240715\R0050939_040_WetlandPhotologsUpdate_20240715.aprx 8/6/2024 11:12 AM JBEpstein

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

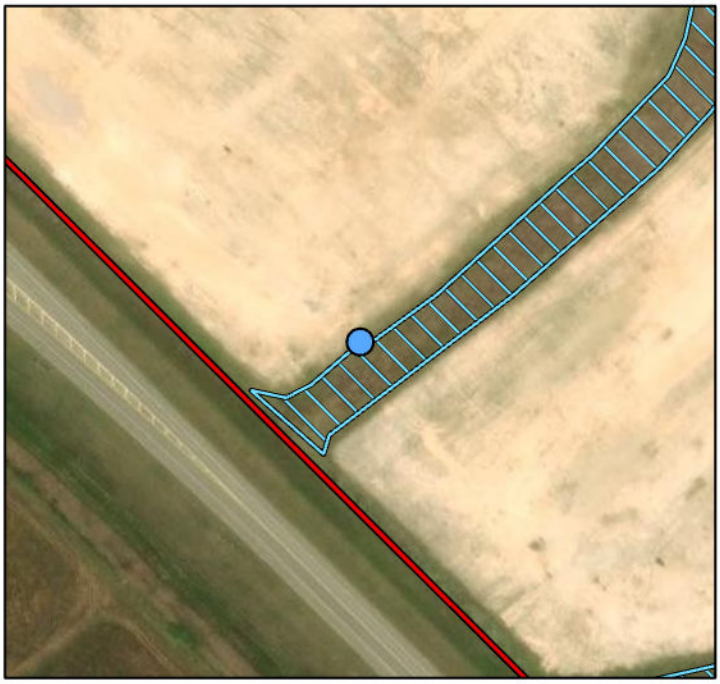



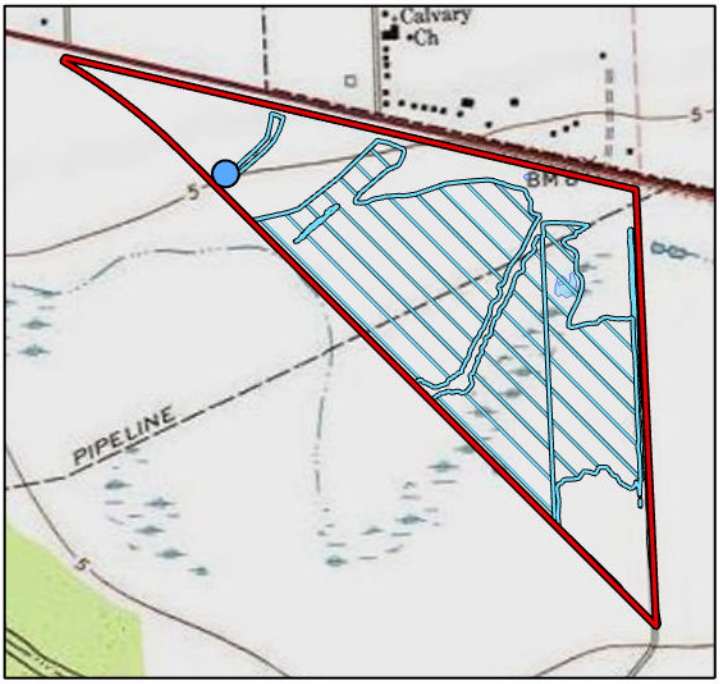



Map Document: N:\0050939.001_GIS_ArcPro\R0050939_040_WetlandPhotologsUpdate_20240715\R0050939_040_WetlandPhotologsUpdate_20240715.aprx 8/6/2024 11:12 AM JBEpstein

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

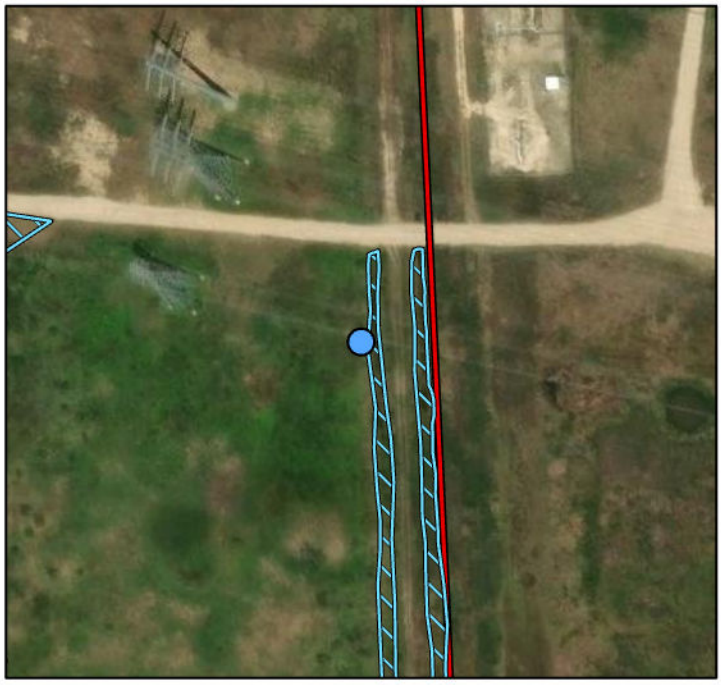



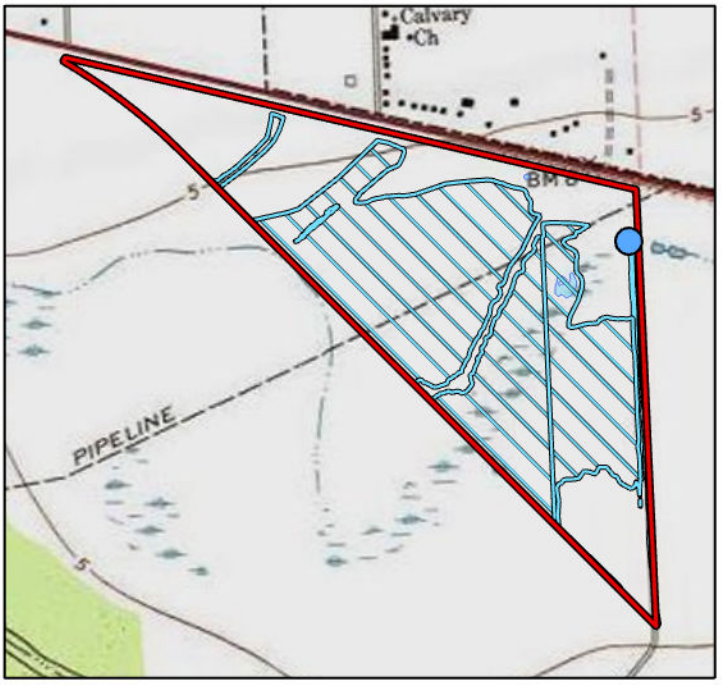



Map Document: N:\00050939.001_GIS_ArcPro\R00050939_040_WetlandPhotologsUpdate_20240715\R00050939_040_WetlandPhotologsUpdate_20240715.aprx 8/6/2024 11:12 AM JBEpstein

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

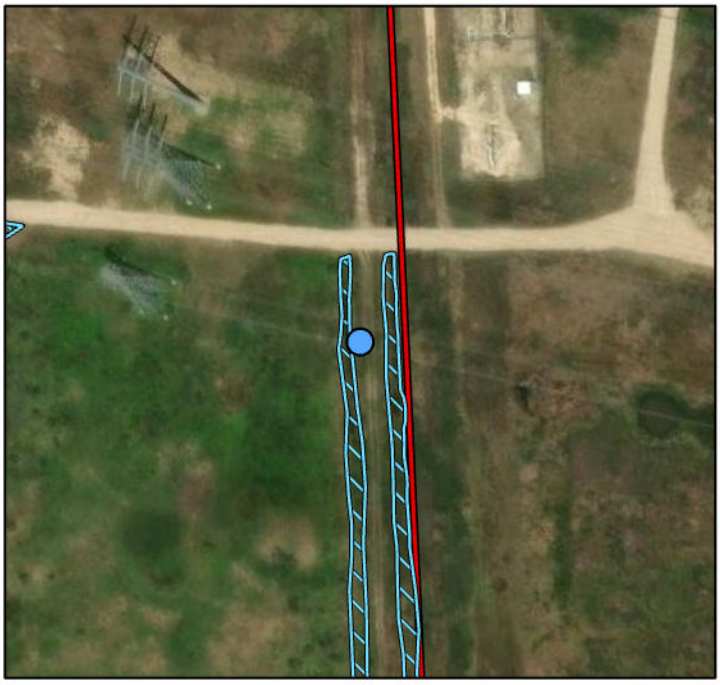
Westwood
Toll Free (888) 937-5150 westwoodps.com

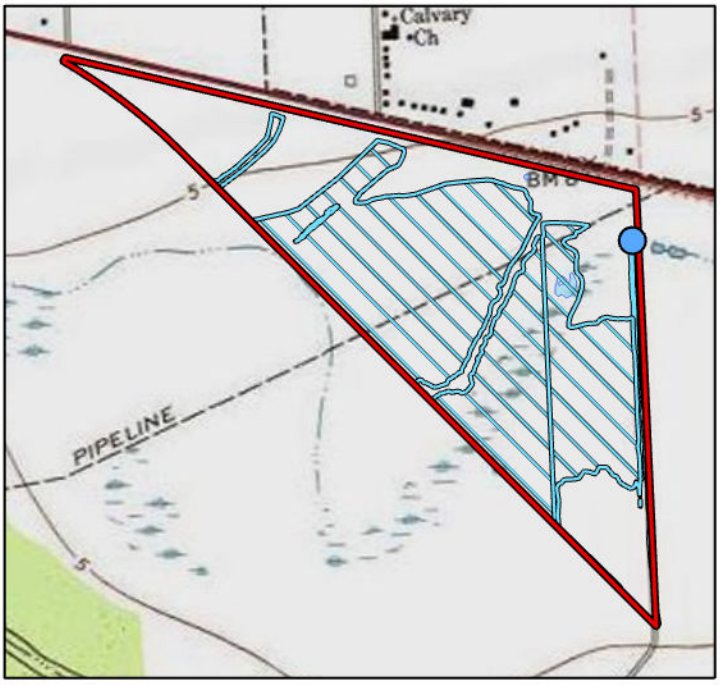





# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

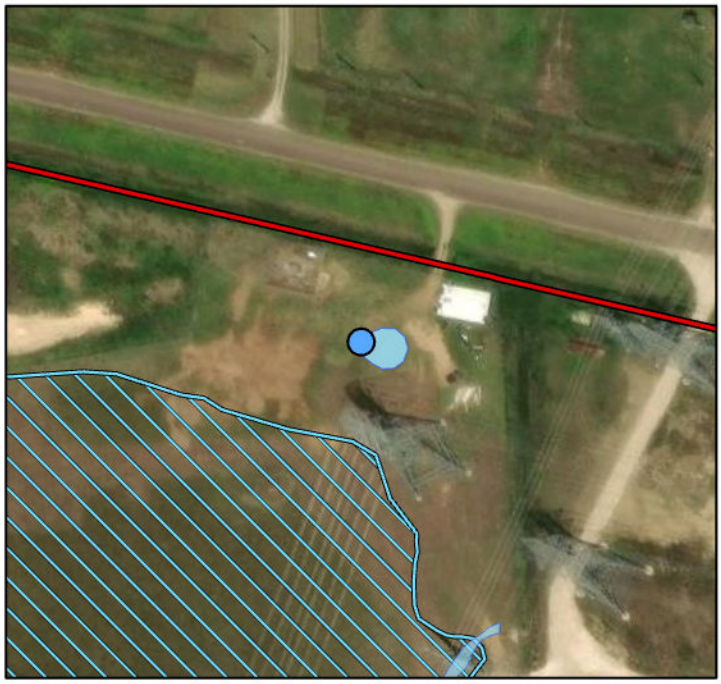



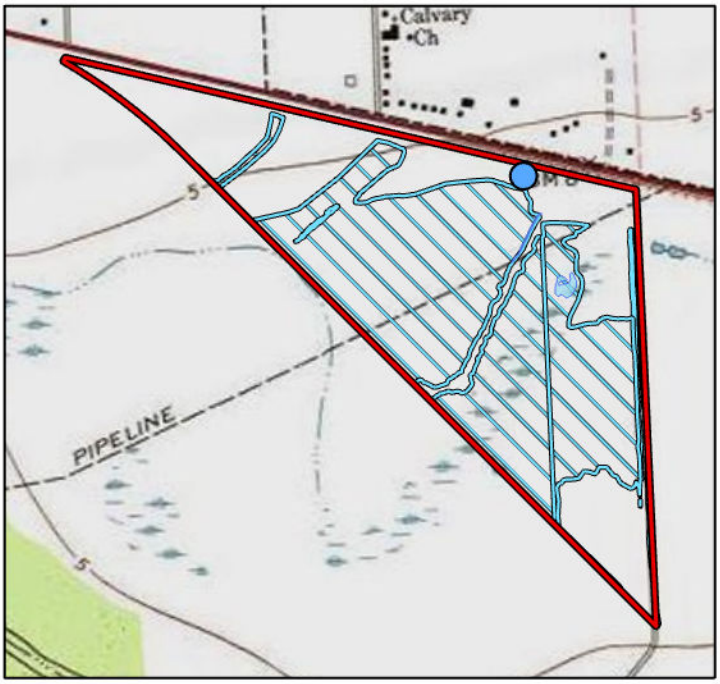


# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

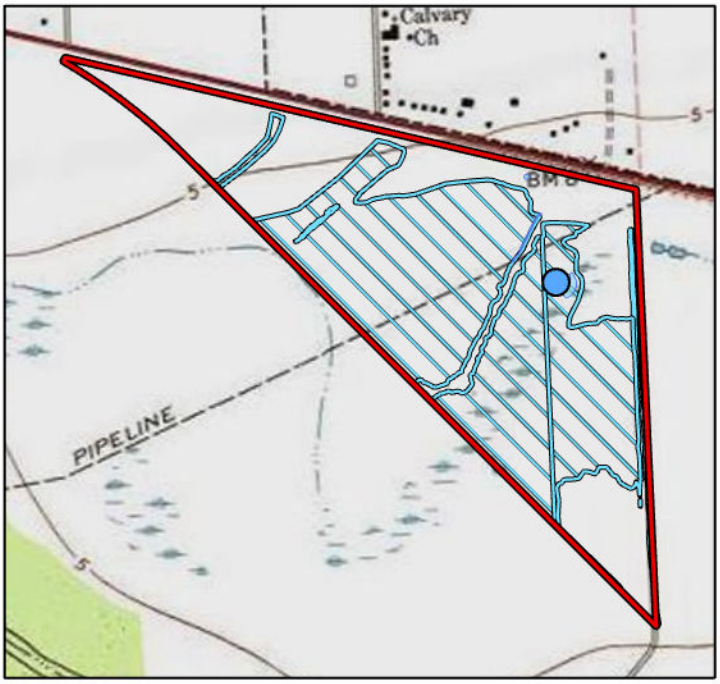
P-02





# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

Westwood

# Appendix B

## Non-Wetland Data Forms and Photographs

**Fairlane Green Hydrogen Project**

Brazoria County, Texas

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-02-20

Applicant/Owner: Monarch Energy State: Texas Sampling Point: NWB-01

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Sideslope Local relief (concave, convex, none): Microtopography Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.961883 Long: -95.394891 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No ✔ | **Is the Sampled Area within a Wetland?** Yes ____ No ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata) –** Use scientific names of plants. Sampling Point: NWB-01

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Sapling/Shrub Stratum (Plot size: 15) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Herb Stratum (Plot size: 5) | | | |
|---|---|---|---|
| 1. *Cynodon dactylon* | 70 | Y | FACU |
| 2. *Erigeron procumbens* | 10 | N | FAC |
| 3. *Taraxacum officinale* | 10 | N | FACU |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 90.0 = Total Cover | | |

50% of total cover: 45.0 20% of total cover: 18.0

| Woody Vine Stratum (Plot size: 30) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0.00 | x 1 = | 0.00 |
| FACW species | 0.00 | x 2 = | 0.00 |
| FAC species | 10.00 | x 3 = | 30.00 |
| FACU species | 80.00 | x 4 = | 320.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 90.00 (A) | | 350.00 (B) |

Prevalence Index = B/A = 3.89

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☐ No ✔

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: NWB-01

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 3/2 | 90 | 7.5YR 4/6 | 10 | C | M | C | |
| 12-18 | 10YR 3/2 | 100 | | | | | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☐ No ☑

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-02-20

Applicant/Owner: Monarch Energy State: Texas Sampling Point: NWB-02

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Microtopography Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.961106 Long: -95.370271 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No ✔ | **Is the Sampled Area within a Wetland?** Yes ____ No ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

**VEGETATION (Four Strata) –** Use scientific names of plants. Sampling Point: NWB-02

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Sapling/Shrub Stratum (Plot size: 15) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Herb Stratum (Plot size: 5) | | | |
|---|---|---|---|
| 1. *Cynodon dactylon* | 70 | Y | FACU |
| 2. *Erigeron procumbens* | 10 | N | FAC |
| 3. *Taraxacum officinale* | 10 | N | FACU |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 90.0 = Total Cover | | |

50% of total cover: 45.0 20% of total cover: 18.0

| Woody Vine Stratum (Plot size: 30) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0.00 | x 1 = | 0.00 |
| FACW species | 0.00 | x 2 = | 0.00 |
| FAC species | 10.00 | x 3 = | 30.00 |
| FACU species | 80.00 | x 4 = | 320.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 90.00 (A) | | 350.00 (B) |

Prevalence Index = B/A = 3.89

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☐ No ✔

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: NWB-02

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-12 | 10YR 3/2 | 90 | 7.5YR 4/6 | 10 | C | M | C | |
| 12-18 | 10YR 3/2 | 100 | | | | | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☐ No ☑

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-02-20

Applicant/Owner: Monarch Energy State: Texas Sampling Point: NWB-03

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Microtopography Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.960638 Long: -95.370165 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No ✔ | **Is the Sampled Area within a Wetland?** Yes ____ No ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: NWB-03

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| **Sapling/Shrub Stratum** (Plot size: 15) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| **Herb Stratum** (Plot size: 5) | | | |
| 1. *Cynodon dactylon* | 70 | Y | FACU |
| 2. *Erigeron procumbens* | 10 | N | FAC |
| 3. *Taraxacum officinale* | 10 | N | FACU |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 90.0 = Total Cover | | |
| 50% of total cover: 45.0 | 20% of total cover: 18.0 | | |
| **Woody Vine Stratum** (Plot size: 30) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0.00 | x 1 = | 0.00 |
| FACW species | 0.00 | x 2 = | 0.00 |
| FAC species | 10.00 | x 3 = | 30.00 |
| FACU species | 80.00 | x 4 = | 320.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 90.00 (A) | | 350.00 (B) |

Prevalence Index = B/A = 3.89

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☐ No ✓

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: NWB-03

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 3/2 | 80 | 10YR 4/6 | 20 | C | M | C | |
| 6-18 | 10YR 3/2 | 100 | | | | | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☐ No ☑

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-02-20

Applicant/Owner: Monarch Energy State: Texas Sampling Point: NWB-04

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Microtopography Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.958062 Long: -95.397259 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No ✔ | **Is the Sampled Area within a Wetland?** Yes ____ No ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: NWB-04

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Sapling/Shrub Stratum (Plot size: 15) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Herb Stratum (Plot size: 5) | | | |
|---|---|---|---|
| 1. *Cynodon dactylon* | 20 | Y | FACU |
| 2. *Ranunculus sardous* | 20 | Y | FAC |
| 3. *Erigeron procumbens* | 10 | N | FAC |
| 4. *Taraxacum officinale* | 10 | N | FACU |
| 5. *Coreopsis linifolia* | 10 | N | FACW |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 70.0 = Total Cover | | |

50% of total cover: 35.0 20% of total cover: 14.0

| Woody Vine Stratum (Plot size: 30) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0.00 | x 1 = | 0.00 |
| FACW species | 10.00 | x 2 = | 20.00 |
| FAC species | 30.00 | x 3 = | 90.00 |
| FACU species | 30.00 | x 4 = | 120.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 70.00 (A) | | 230.00 (B) |

Prevalence Index = B/A = 3.29

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☐ No ✔

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: NWB-04

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 3/2 | 80 | 10YR 4/6 | 20 | C | M | C | |
| 6-18 | 10YR 3/2 | 100 | | | | | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

[2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☐ No ☑

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-02-20

Applicant/Owner: Monarch Energy State: Texas Sampling Point: NWB-05

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): Microtopography Slope (%): 0-2

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.959691 Long: -95.395890 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No ✔ | **Is the Sampled Area within a Wetland?** Yes ____ No ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ | |
| Wetland Hydrology Present? | Yes ✔ | No ____ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ✔ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ✔ No ____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: NWB-05

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Sapling/Shrub Stratum (Plot size: 15) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Herb Stratum (Plot size: 5) | | | |
|---|---|---|---|
| 1. *Cynodon dactylon* | 20 | Y | FACU |
| 2. *Ranunculus sardous* | 20 | Y | FAC |
| 3. *Erigeron procumbens* | 10 | N | FAC |
| 4. *Taraxacum officinale* | 10 | N | FACU |
| 5. *Coreopsis linifolia* | 10 | N | FACW |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 70.0 = Total Cover | | |

50% of total cover: 35.0 20% of total cover: 14.0

| Woody Vine Stratum (Plot size: 30) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0.00 | x 1 = | 0.00 |
| FACW species | 10.00 | x 2 = | 20.00 |
| FAC species | 30.00 | x 3 = | 90.00 |
| FACU species | 30.00 | x 4 = | 120.00 |
| UPL species | 0.00 | x 5 = | 0.00 |
| Column Totals: | 70.00 (A) | | 230.00 (B) |

Prevalence Index = B/A = 3.29

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☐ No ✓

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: NWB-05

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-6 | 10YR 3/2 | 80 | 10YR 4/6 | 20 | C | M | C | |
| 6-18 | 10YR 3/2 | 100 | | | | | C | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☐ No ☑

Remarks:

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-02-20

Applicant/Owner: Monarch Energy State: Texas Sampling Point: NWB-06

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Shoulder Local relief (concave, convex, none): Microtopography Slope (%): 3-7

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.962635 Long: -95.398898 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ✔ | No ____ | **Is the Sampled Area within a Wetland?** Yes ____ No ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ | |
| Wetland Hydrology Present? | Yes ____ | No ✔ | |

Remarks:

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

No water,fill soil

**VEGETATION (Four Strata) –** Use scientific names of plants. Sampling Point: NWB-06

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Sapling/Shrub Stratum (Plot size: 15) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

| Herb Stratum (Plot size: 5) | | | |
|---|---|---|---|
| 1. *Ranunculus sardous* | 20 | Y | FAC |
| 2. *Paspalum setaceum* | 20 | Y | FAC |
| 3. *Sonchus oleraceus* | 15 | Y | FACU |
| 4. *Melilotus officinalis* | 10 | N | FACU |
| 5. *Taraxacum officinale* | 10 | N | FACU |
| 6. *Cynodon dactylon* | 5 | N | FACU |
| 7. *Erigeron procumbens* | 5 | N | FAC |
| 8. *Medicago lupulina* | 5 | N | UPL |
| 9. | | | |
| 10. | | | |
| 11. | | | |
| 12. | | | |
| | 90.0 = Total Cover | | |

50% of total cover: 45.0 20% of total cover: 18.0

| Woody Vine Stratum (Plot size: 30) | | | |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |

50% of total cover: 0.0 20% of total cover: 0.0

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.67 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0.00 | x 1 = | 0.00 |
| FACW species | 0.00 | x 2 = | 0.00 |
| FAC species | 45.00 | x 3 = | 135.00 |
| FACU species | 40.00 | x 4 = | 160.00 |
| UPL species | 5.00 | x 5 = | 25.00 |
| Column Totals: | 90.00 (A) | | 320.00 (B) |

Prevalence Index = B/A = 3.56

**Hydrophytic Vegetation Indicators:**

- [ ] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [ ] 3 - Prevalence Index is ≤3.0[1]
- [ ] Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes [x] No [ ]

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: NWB-06

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-18 | 10YR 3/2 | 80 | 10YR 5/3 | 20 | C | M | CL | |
| | | | 10YR 3/6 | | | | CL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

**Hydric Soil Present?** Yes ☐ No ☑

Remarks:

Fill soil

## WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Fairlane Green Hydrogen Project City/County: Brazoria County Sampling Date: 2024-02-20

Applicant/Owner: Monarch Energy State: Texas Sampling Point: NWB-07

Investigator(s): Kelly Swanson Section, Township, Range:

Landform (hillslope, terrace, etc.): Shoulder Local relief (concave, convex, none): Microtopography Slope (%): 3-7

Subregion (LRR or MLRA): LRR T, MLRA 150B Lat: 28.963129 Long: -95.398054 Datum: WGS84

Soil Map Unit Name: Pledger clay, 0 to 1 percent slopes, rarely flooded NWI classification: Yes

Are climatic / hydrologic conditions on the site typical 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, etc.

| | | | |
|---|---|---|---|
| Hydrophytic Vegetation Present? | Yes ____ | No ✔ | **Is the Sampled Area within a Wetland?** Yes ____ No ✔ |
| Hydric Soil Present? | Yes ____ | No ✔ | |
| Wetland Hydrology Present? | Yes ____ | No ✔ | |

Remarks:
Fill added for Concrete operation

### HYDROLOGY

**Wetland Hydrology Indicators:**

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

**Field Observations:**

| | | | |
|---|---|---|---|
| Surface Water Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Water Table Present? | Yes ____ | No ✔ | Depth (inches): ____ |
| Saturation Present? (includes capillary fringe) | Yes ____ | No ✔ | Depth (inches): ____ |

**Wetland Hydrology Present?** Yes ____ No ✔

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
No water,fill soil

**VEGETATION (Four Strata) –** Use scientific names of plants. Sampling Point: NWB-07

| Tree Stratum (Plot size: 30) | Absolute % Cover | Dominant Species? | Indicator Status |
|---|---|---|---|
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| Sapling/Shrub Stratum (Plot size: 15) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| 6. | | | |
| 7. | | | |
| 8. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |
| Herb Stratum (Plot size: 5) | | | |
| 1. *Rubus trivialis* | 30 | Y | FACU |
| 2. *Sonchus oleraceus* | 15 | Y | FACU |
| 3. *Taraxacum officinale* | 10 | Y | FACU |
| 4. *Melilotus officinalis* | 10 | Y | FACU |
| 5. *Andropogon tenuoispatheus* | 5 | N | FAC |
| 6. *Paspalum setaceum* | 5 | N | FAC |
| 7. *Erigeron procumbens* | 5 | N | FAC |
| 8. *Cynodon dactylon* | 5 | N | FACU |
| 9. *Medicago lupulina* | 5 | N | UPL |
| 10. *Ranunculus sardous* | 5 | N | FAC |
| 11. | | | |
| 12. | | | |
| | 95.0 = Total Cover | | |
| 50% of total cover: 47.5 | 20% of total cover: 19.0 | | |
| Woody Vine Stratum (Plot size: 30) | | | |
| 1. | | | |
| 2. | | | |
| 3. | | | |
| 4. | | | |
| 5. | | | |
| | 0 = Total Cover | | |
| 50% of total cover: 0.0 | 20% of total cover: 0.0 | | |

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0.00 (A/B)

**Prevalence Index worksheet:**

| Total % Cover of: | | Multiply by: | |
|---|---|---|---|
| OBL species | 0.00 | x 1 = | 0.00 |
| FACW species | 0.00 | x 2 = | 0.00 |
| FAC species | 20.00 | x 3 = | 60.00 |
| FACU species | 70.00 | x 4 = | 280.00 |
| UPL species | 5.00 | x 5 = | 25.00 |
| Column Totals: | 95.00 (A) | | 365.00 (B) |

Prevalence Index = B/A = 3.84

**Hydrophytic Vegetation Indicators:**

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (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) or more in diameter at breast height (DBH), regardless of height.

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?** Yes ☐ No ✓

Remarks: (If observed, list morphological adaptations below).

Pasture land

**SOIL**

Sampling Point: NWB-07

**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

| Depth (inches) | Matrix Color (moist) | % | Redox Features Color (moist) | % | Type[1] | Loc[2] | Texture | Remarks |
|---|---|---|---|---|---|---|---|---|
| 0-18 | 10YR 3/2 | 70 | 10YR 5/3 | 20 | C | M | CL | |
| | | | 10YR 3/6 | 10 | C | M | CL | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)**

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

**Indicators for Problematic Hydric Soils[3]:**

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: _____

Depth (inches): _____

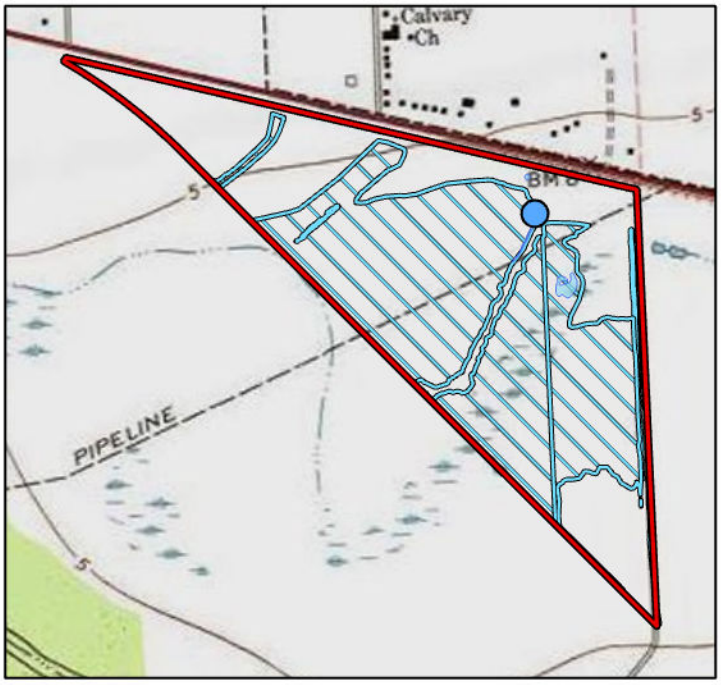
**Hydric Soil Present?** Yes ☐ No ☑

Remarks:

Fill soil

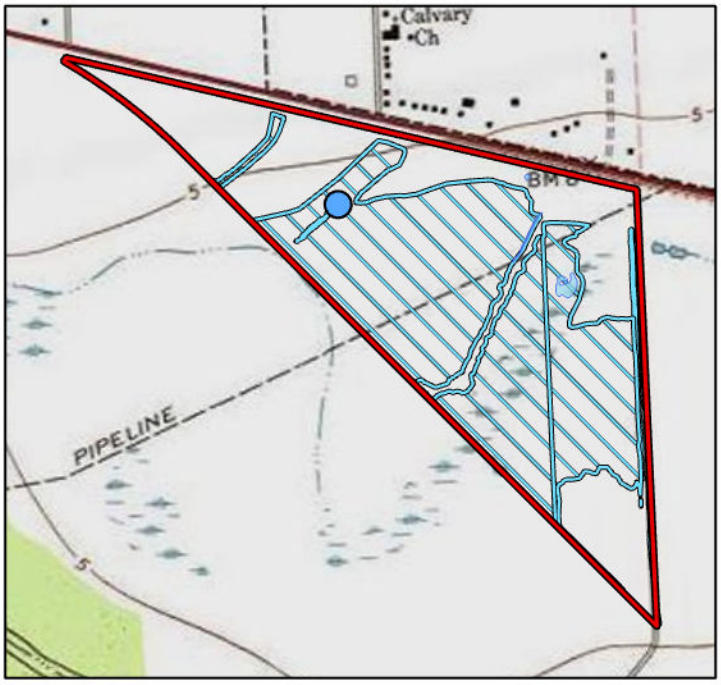
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

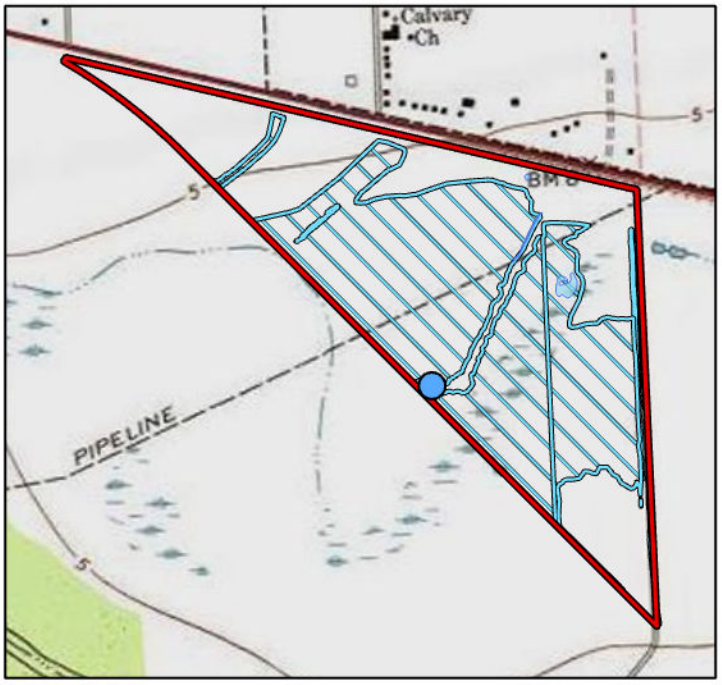
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

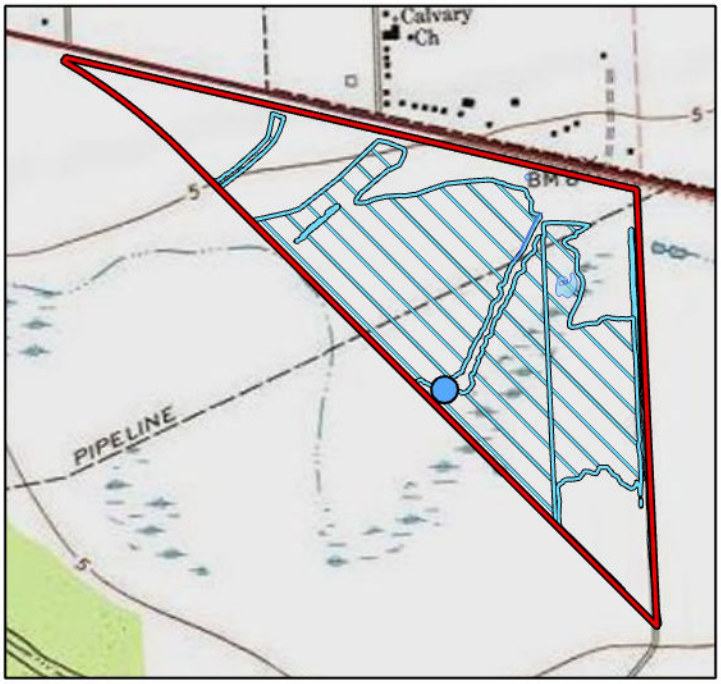
Westwood
Toll Free (888) 937-5150 westwoodps.com


Map Document: N:\0050939.001_GIS_ArcPro\R0050939_040_WetlandPhotologsUpdate_20240715\R0050939_040_WetlandPhotologsUpdate_20240715.aprx 8/6/2024 11:10 AM JBEpstein

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

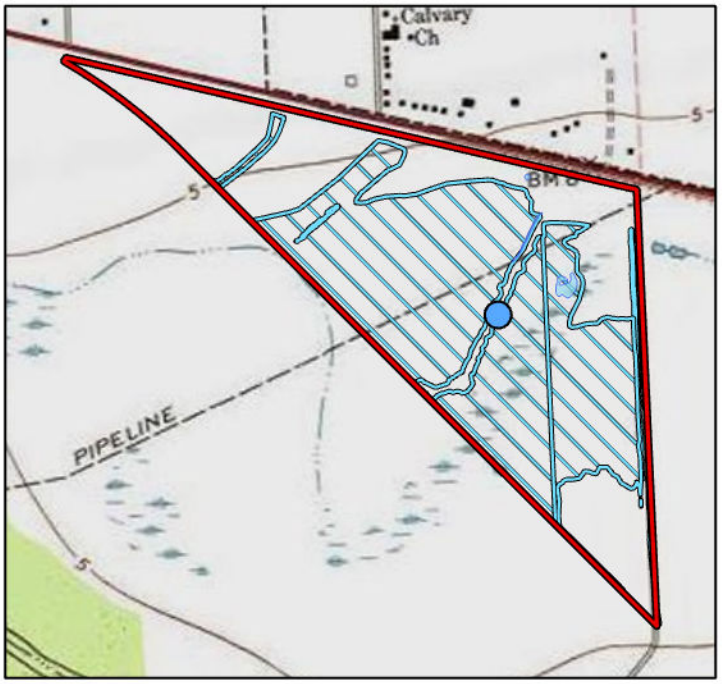
Westwood
Toll Free (888) 937-5150 westwoodps.com


Map Document: N:\0050939.001_GIS_ArcPro\R0050939_040_WetlandPhotologsUpdate_20240715\R0050939_040_WetlandPhotologsUpdate_20240715.aprx 8/6/2024 11:10 AM JBEpstein

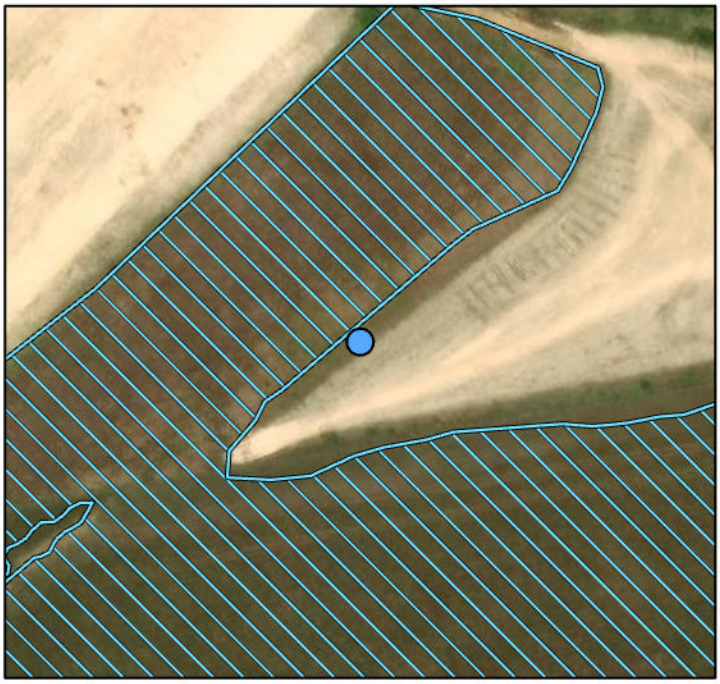
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

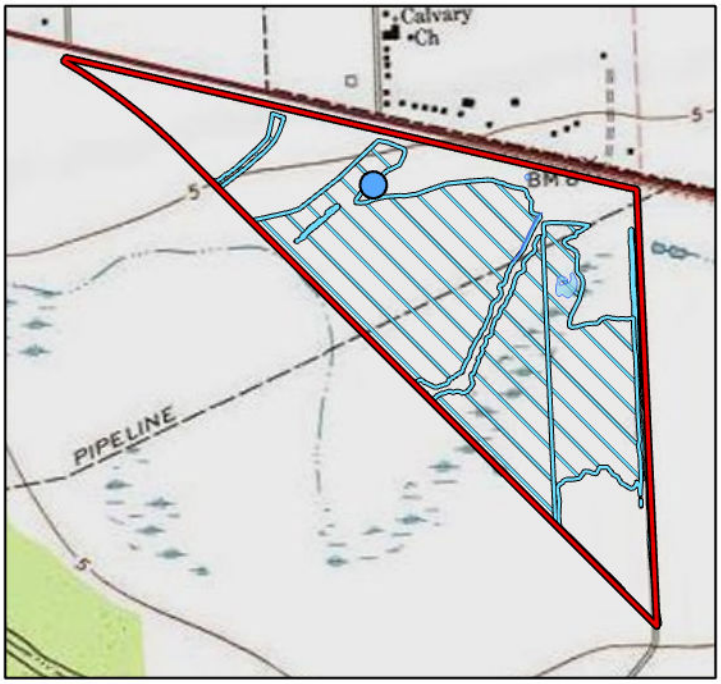
Westwood
Toll Free (888) 937-5150 westwoodps.com

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

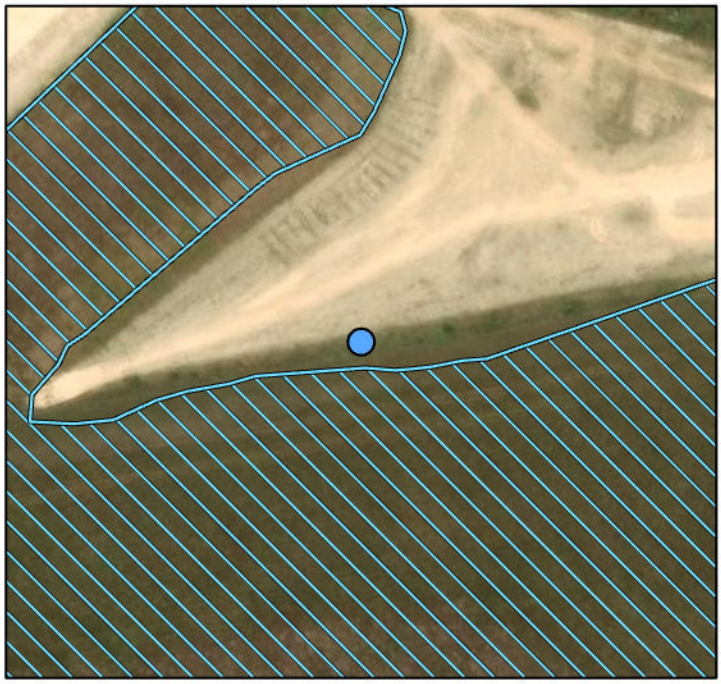



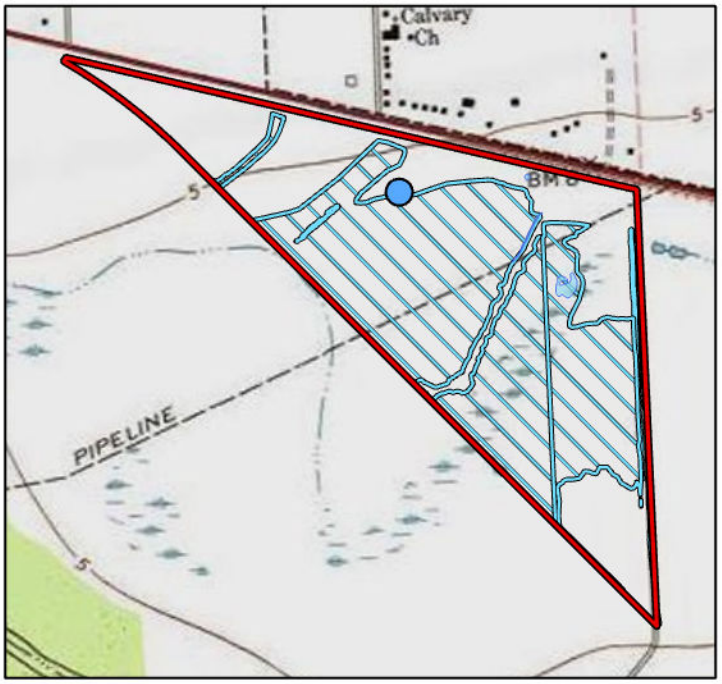



Map Document: N:\0050939.001_GIS_ArcPro\R0050939_040_WetlandPhotologsUpdate_20240715\R0050939_040_WetlandPhotologsUpdate_20240715.aprx 8/6/2024 11:10 AM JBEpstein

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com



Westwood

# Appendix C

## Watercourse Data Forms and Photographs

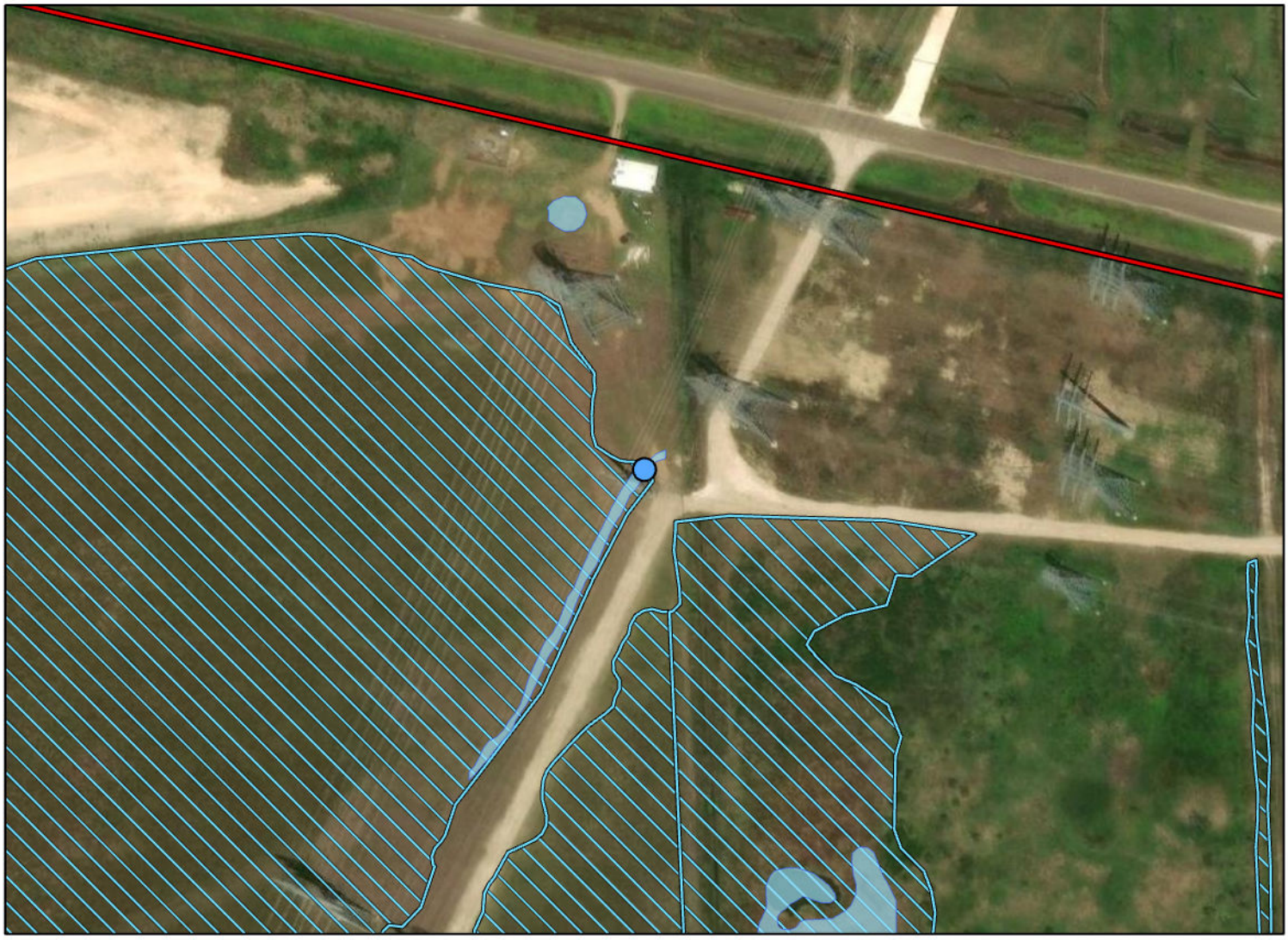
**Fairlane Green Hydrogen Project**

Brazoria County, Texas

# Fairlane Green Hydrogen Project
# Watercourse Data Form

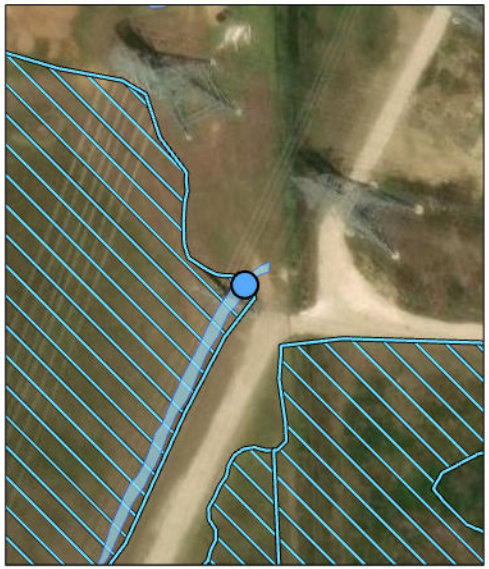
Westwood
Toll Free (888) 937-5150 westwoodps.com

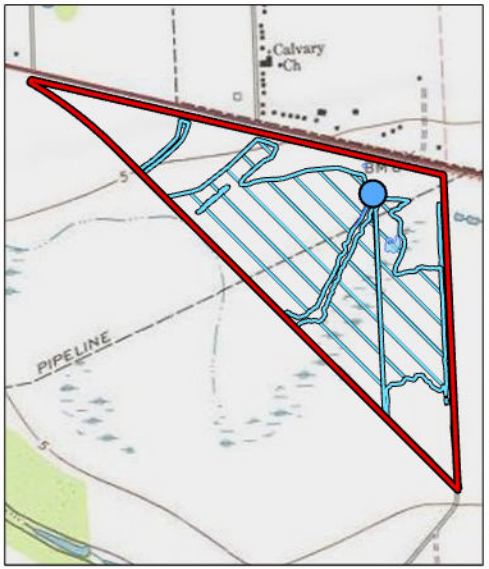
| Attributes | |
|---|---|
| Feature ID | WC-01 |
| Defined Bed & Bank | Yes |
| Mapped on NHD | Yes |
| Mapped on NWI | Yes |
| Investigator | |
| Flow Characteristics | Ephemeral |
| Direction of the Flow | No Discernable Direction |
| Water Width at Observation Point (ft) | 2 |
| Water Depth at Observation Point (ft) | 4 |
| Left Bank Height (ft) - Looking Downstream | 2 |
| Right Bank Height (ft) - Looking Downstream | 1.5 |
| OHWM Width (ft) | 2 |
| OHWM Height (ft from Substrate) | 4" |
| Evidence of Scour or Erosion | No |
| OHWM Criteria | Change in plant community |
| Pools, Riffles, Runs Present? | None |
| Substrate | Clay |



# Fairlane Green Hydrogen Project
# Watercourse Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com







Westwood

# Appendix D

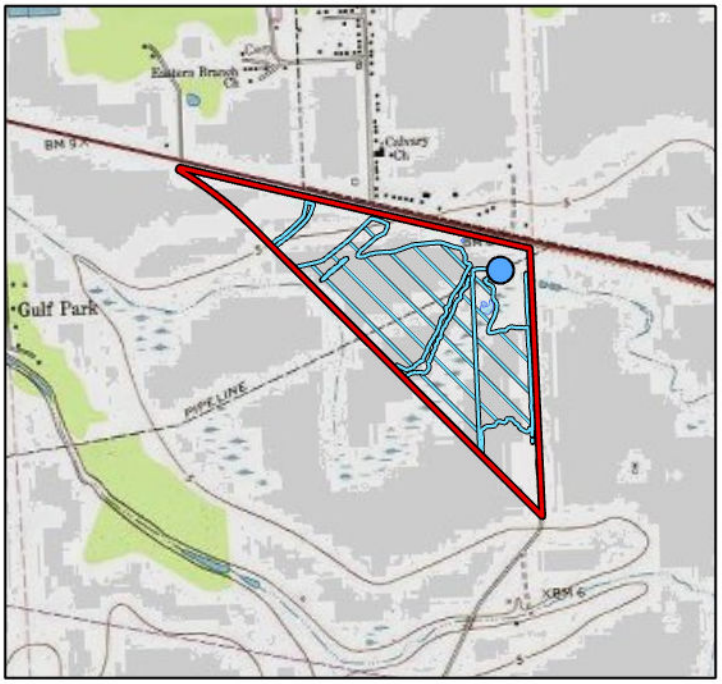
## Additional Photo Point Photographs

**Monarch Fairlane Project**

Brazoria County, Texas

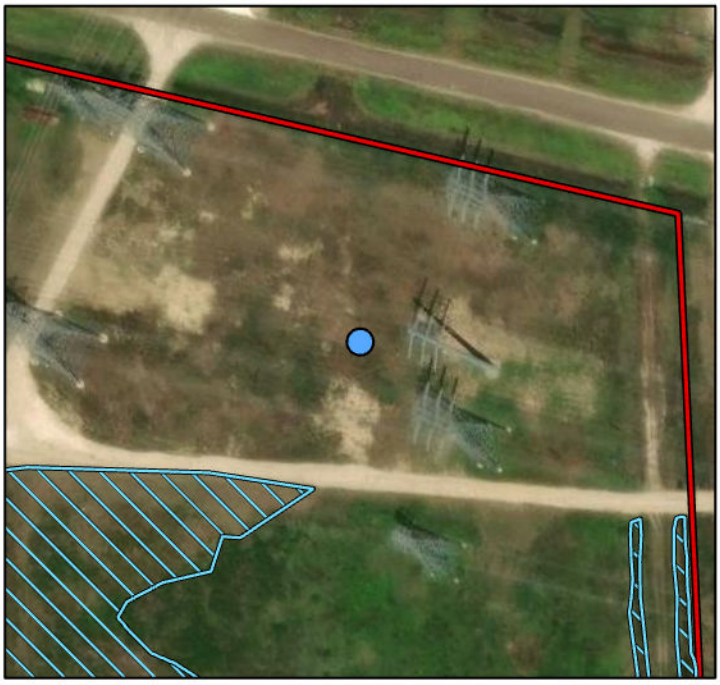
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

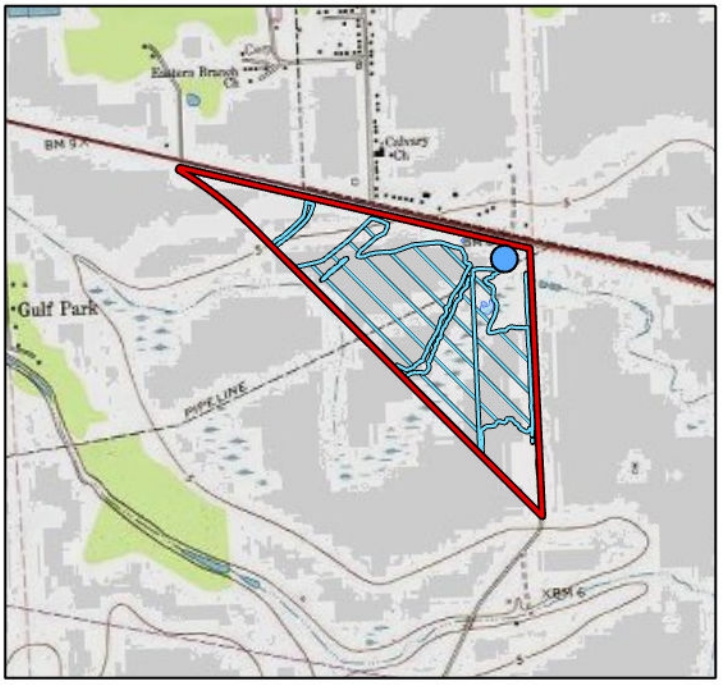
Westwood
Toll Free (888) 937-5150 westwoodps.com

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

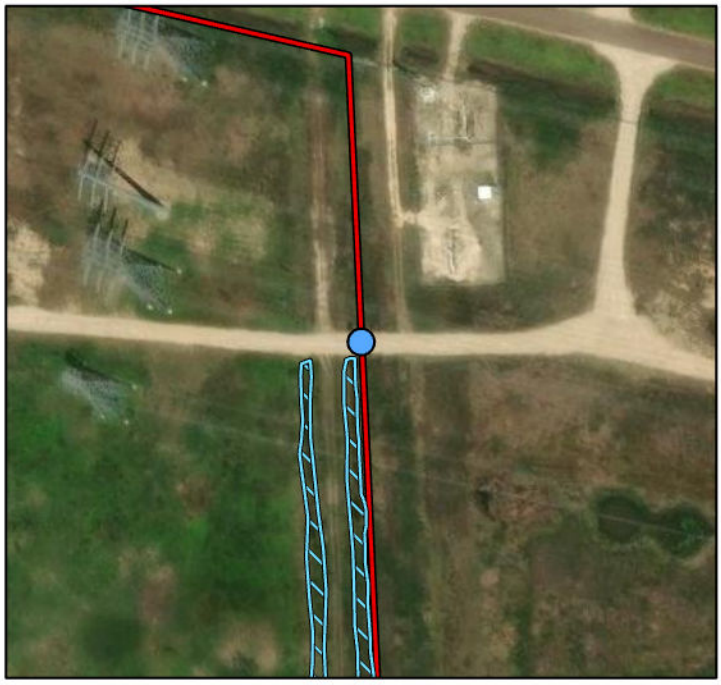
Westwood
Toll Free (888) 937-5150 westwoodps.com

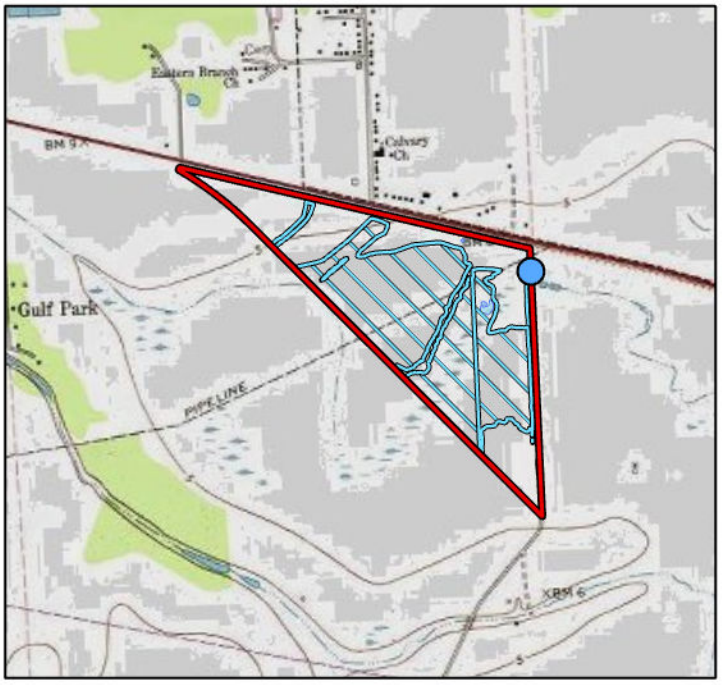





# Fairlane Green Hydrogen Project
# Delineation Site Photograph

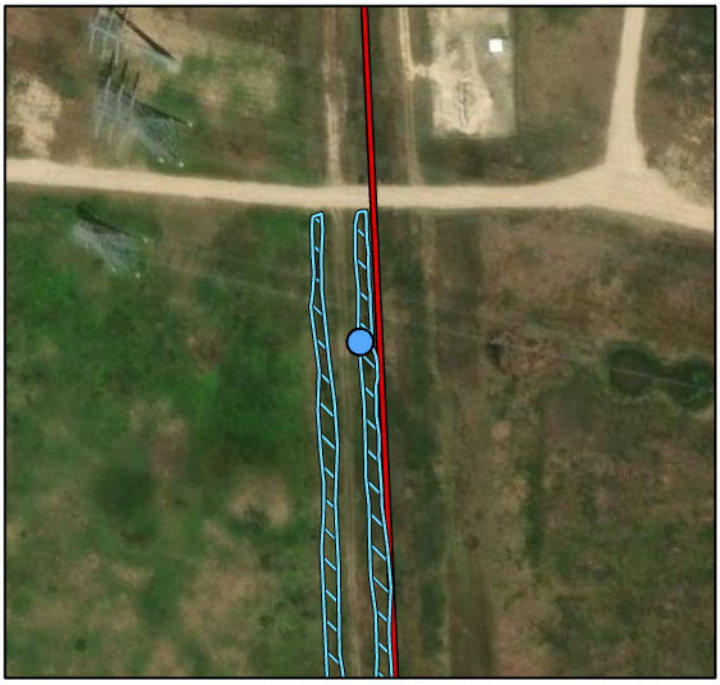
Westwood
Toll Free (888) 937-5150 westwoodps.com

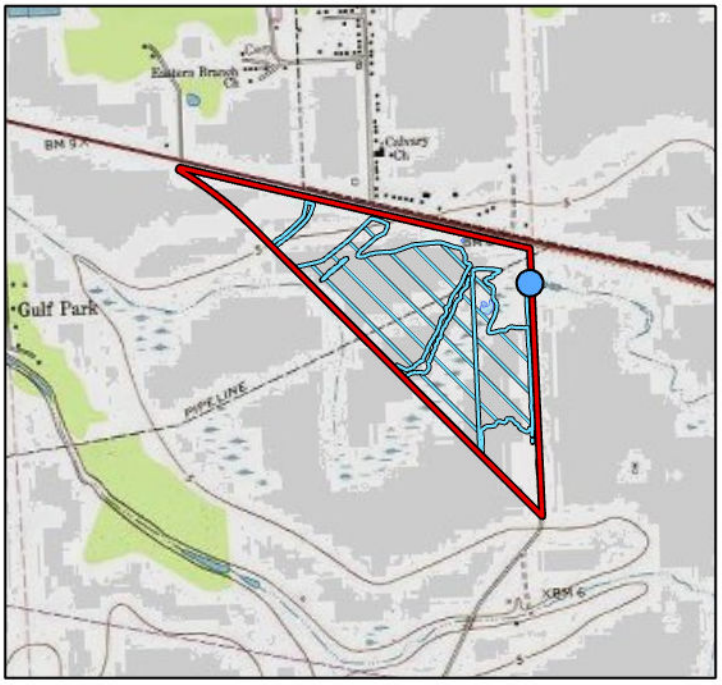





# Fairlane Green Hydrogen Project
# Delineation Site Photograph

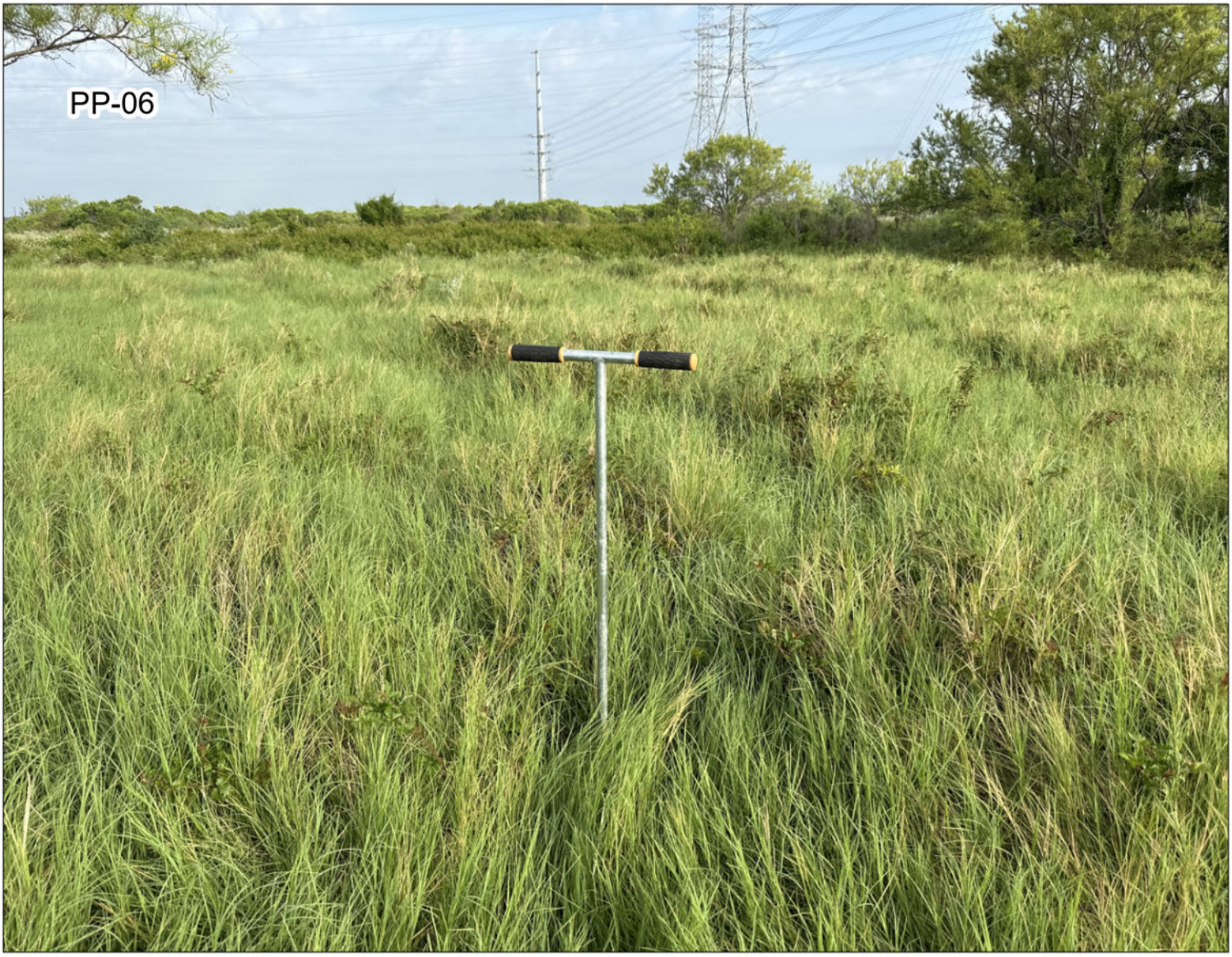
Westwood
Toll Free (888) 937-5150 westwoodps.com

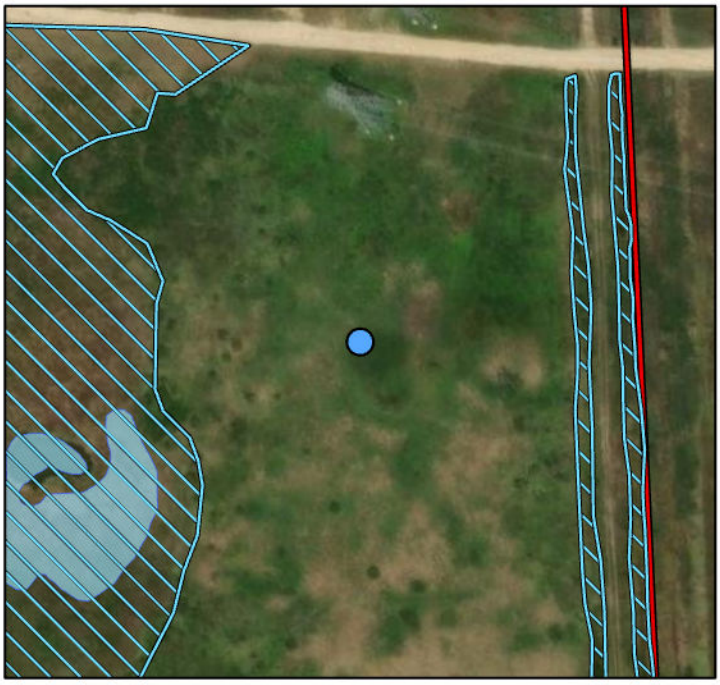



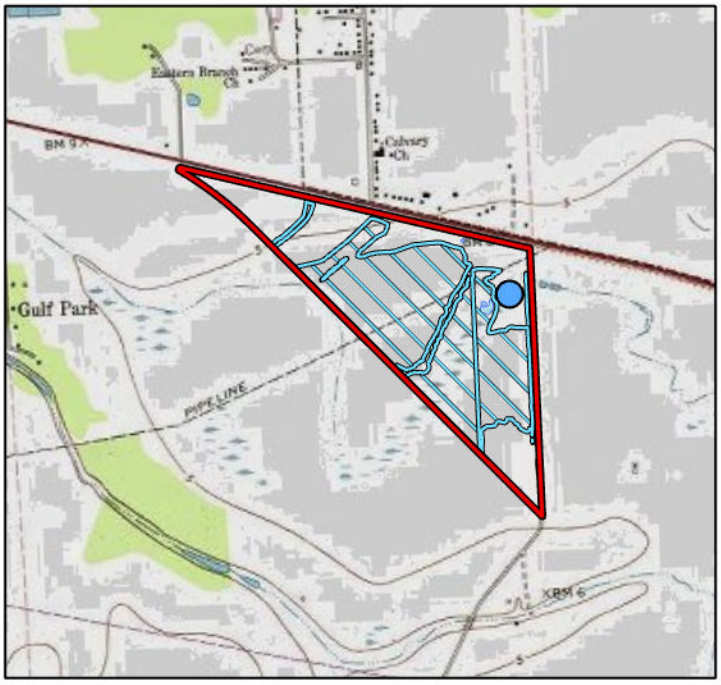


# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

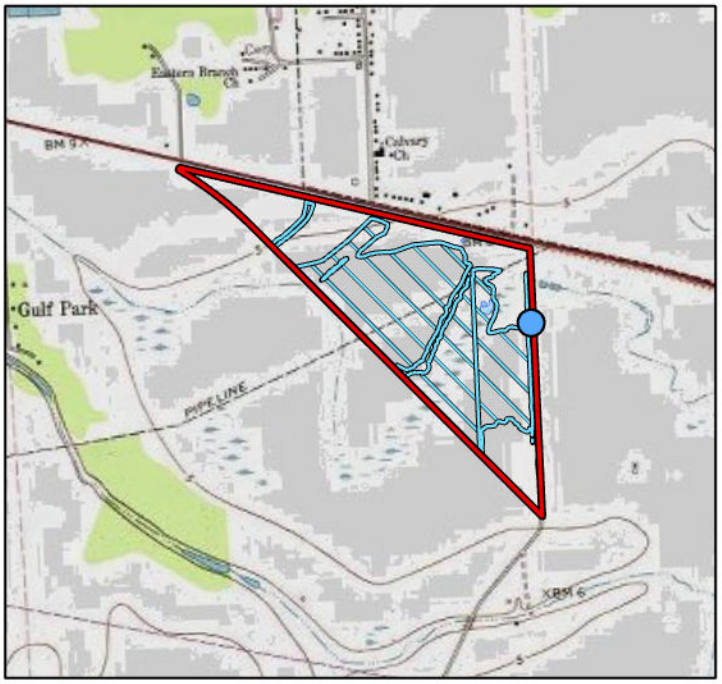




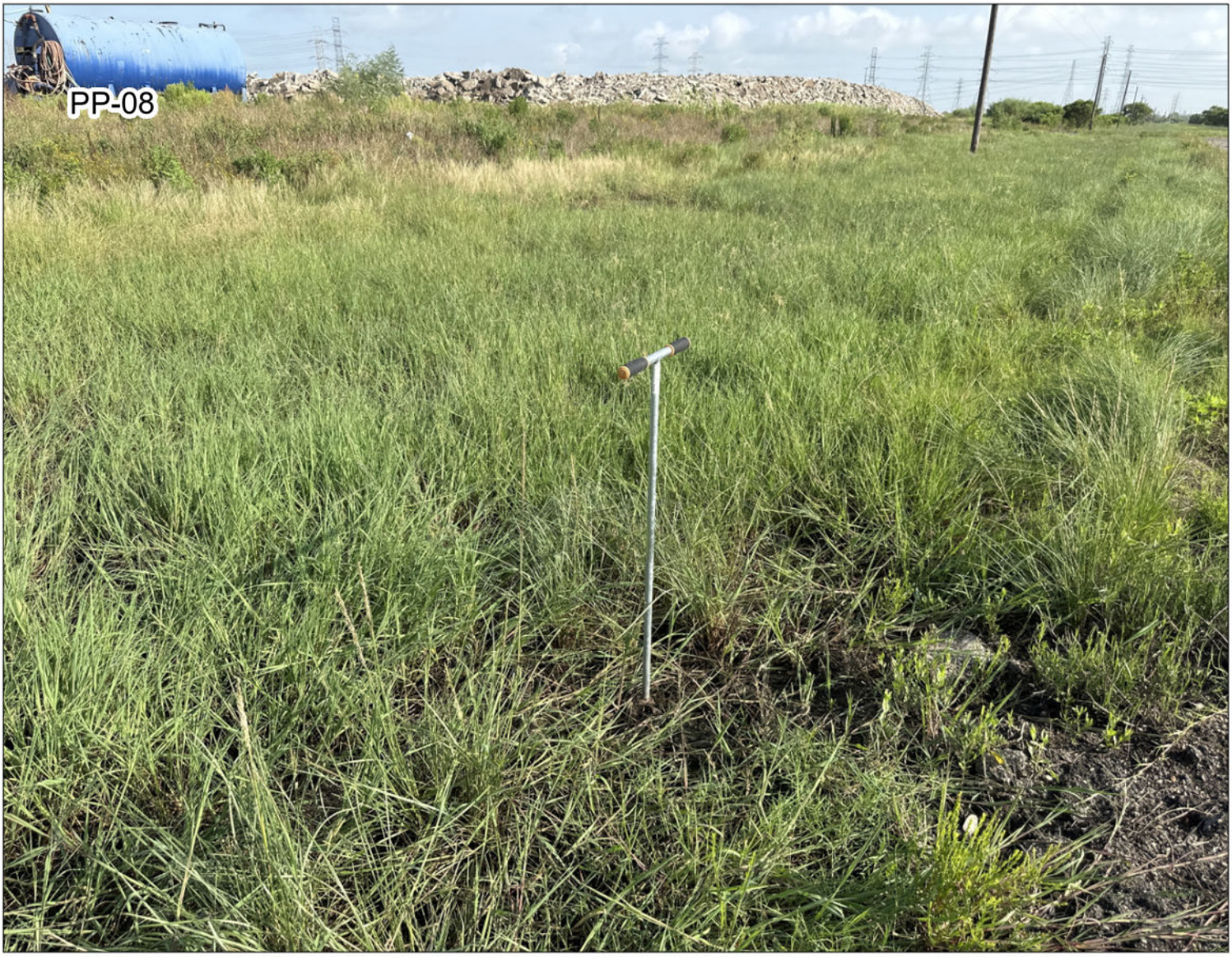
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

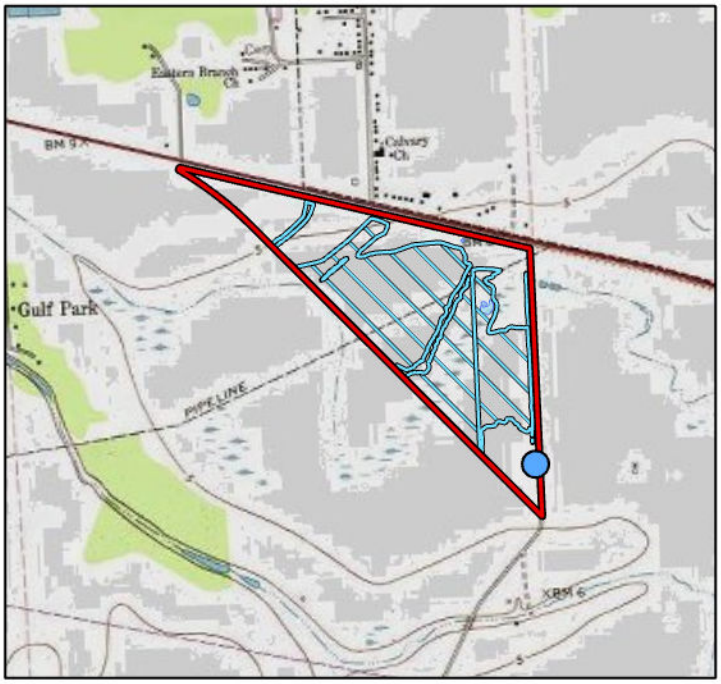
Westwood
Toll Free (888) 937-5150 westwoodps.com

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

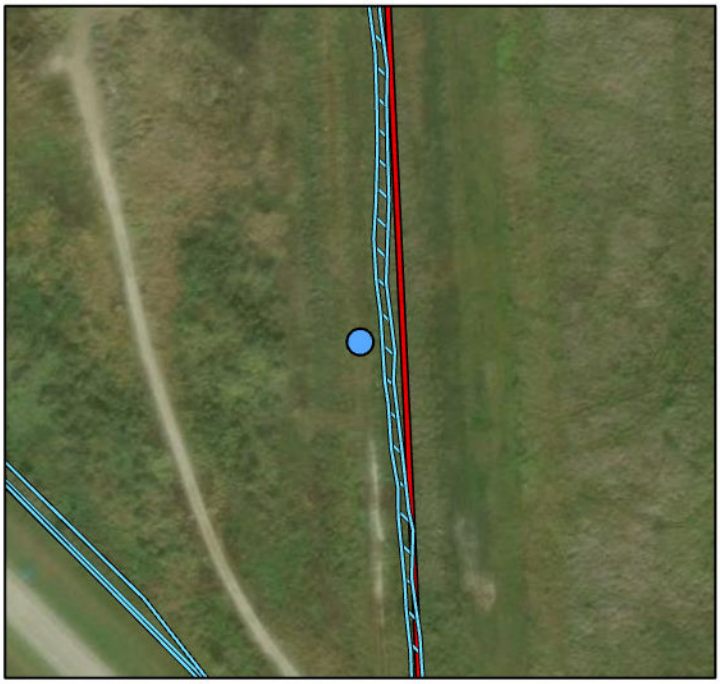
Westwood
Toll Free (888) 937-5150 westwoodps.com

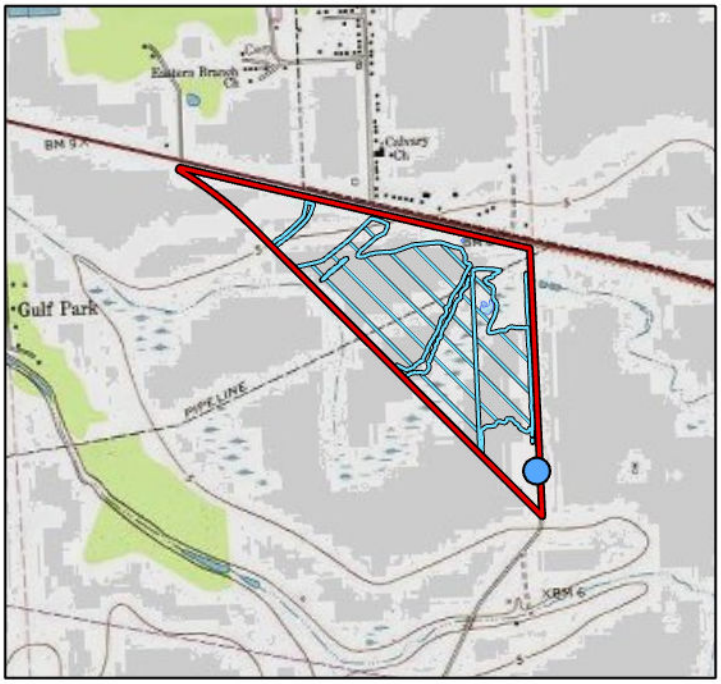


# Fairlane Green Hydrogen Project
# Delineation Site Photograph

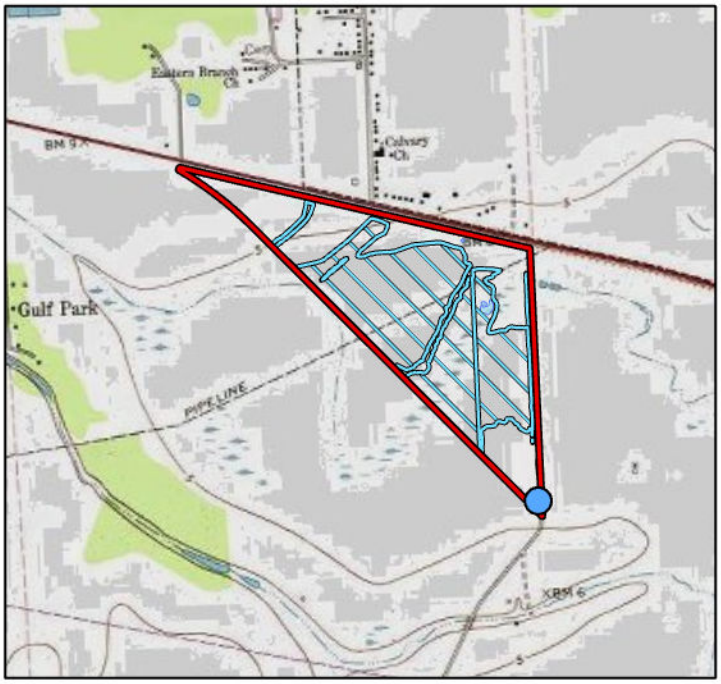
Westwood
Toll Free (888) 937-5150 westwoodps.com



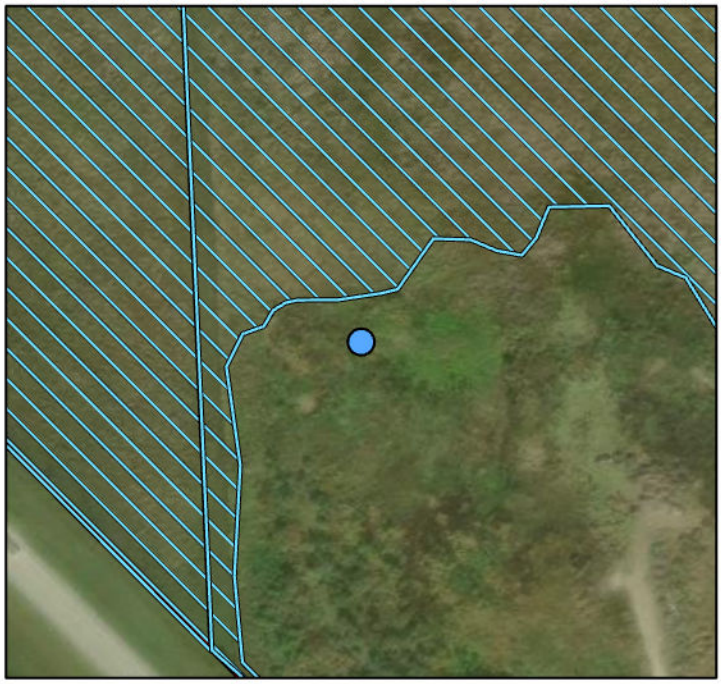
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

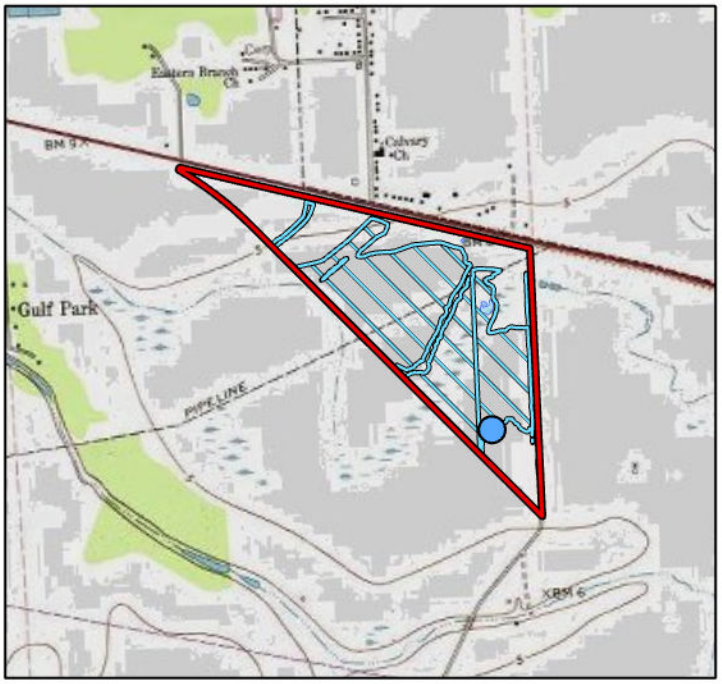
Westwood
Toll Free (888) 937-5150 westwoodps.com

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

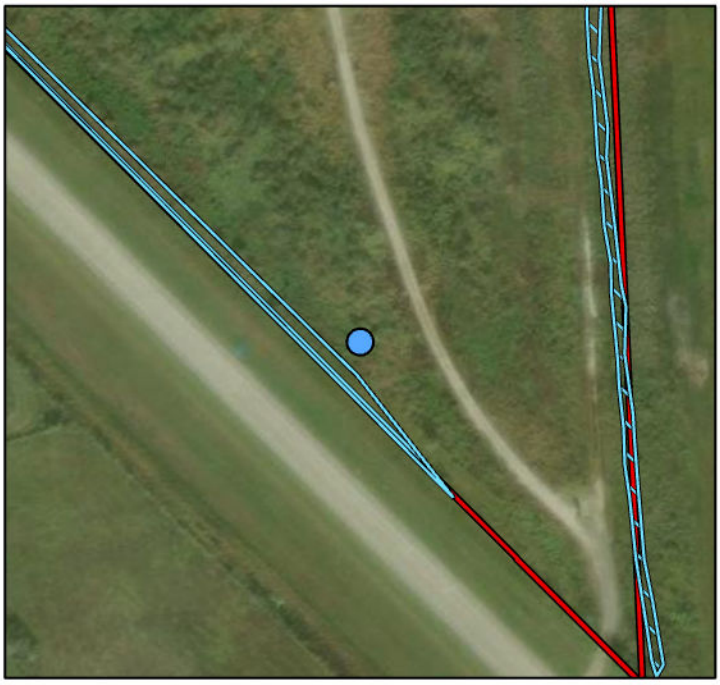


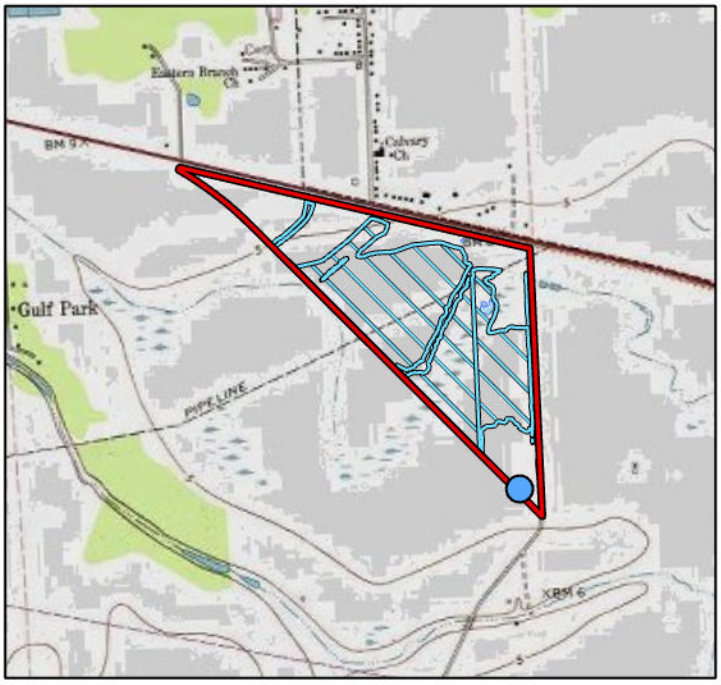
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com


# Fairlane Green Hydrogen Project
# Delineation Site Photograph

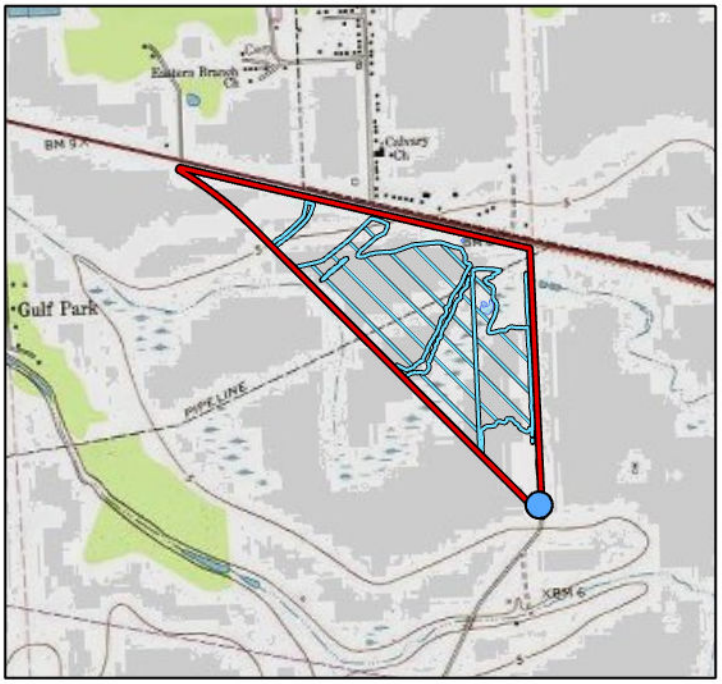
Westwood
Toll Free (888) 937-5150 westwoodps.com



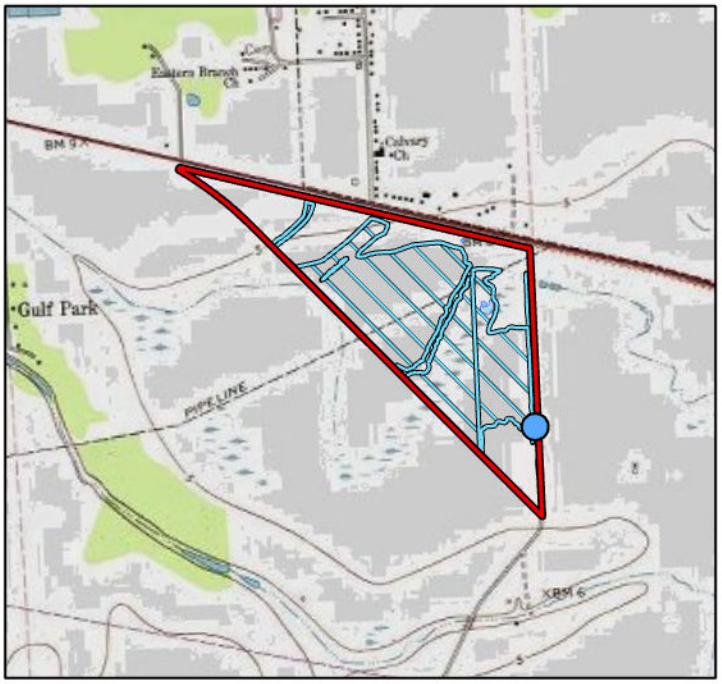
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

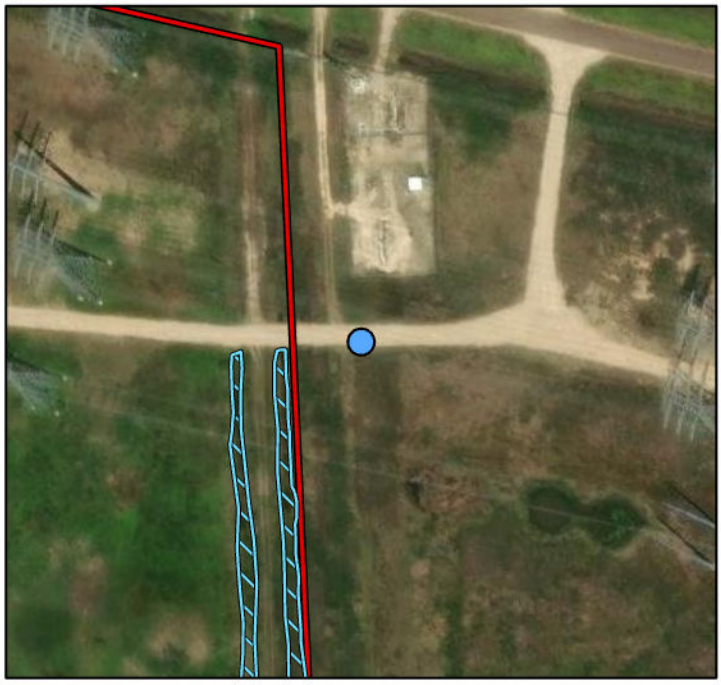
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

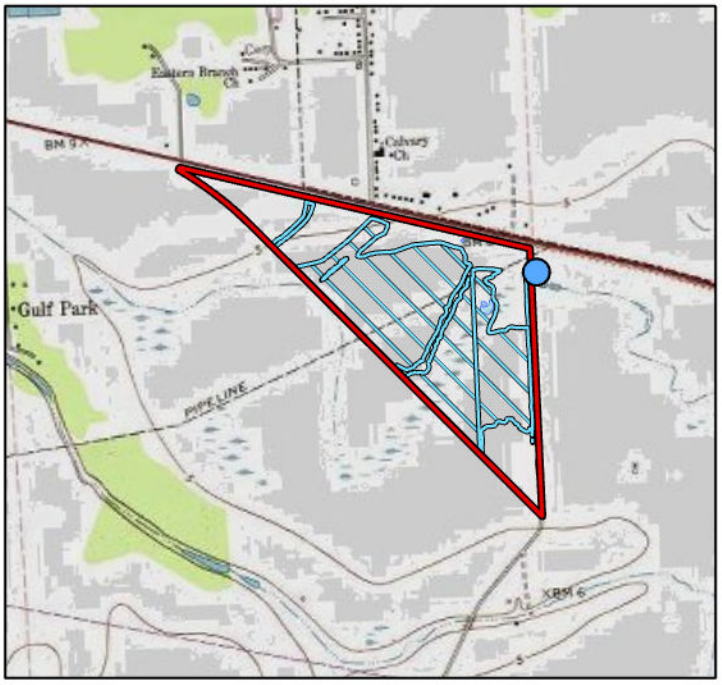
Westwood
Toll Free (888) 937-5150 westwoodps.com

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

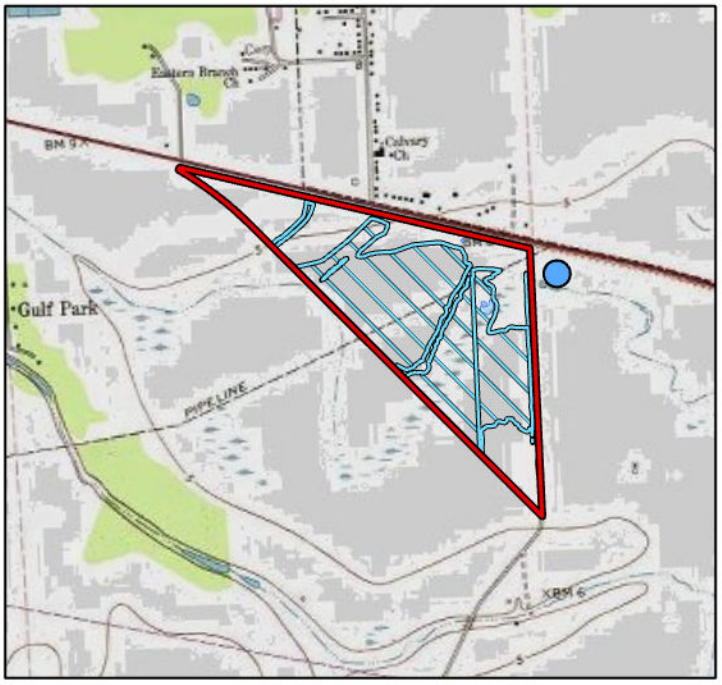
Westwood
Toll Free (888) 937-5150 westwoodps.com



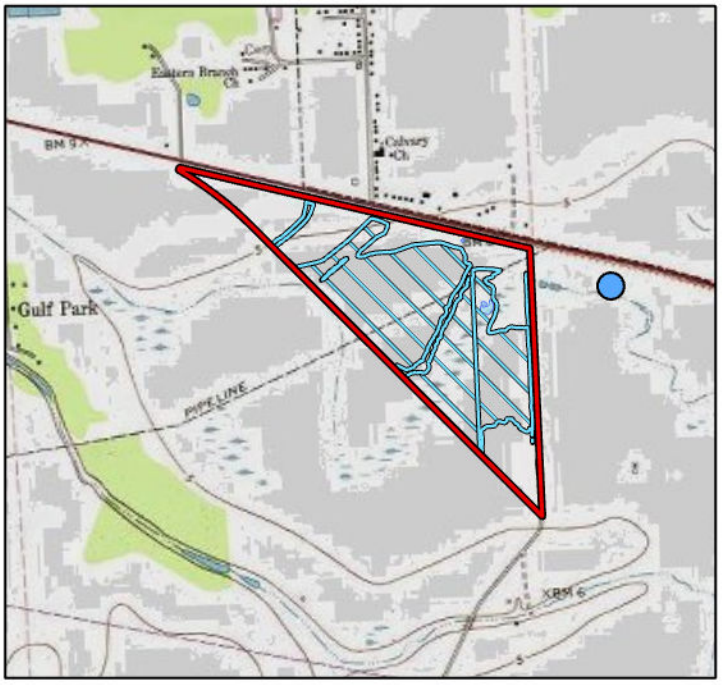
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

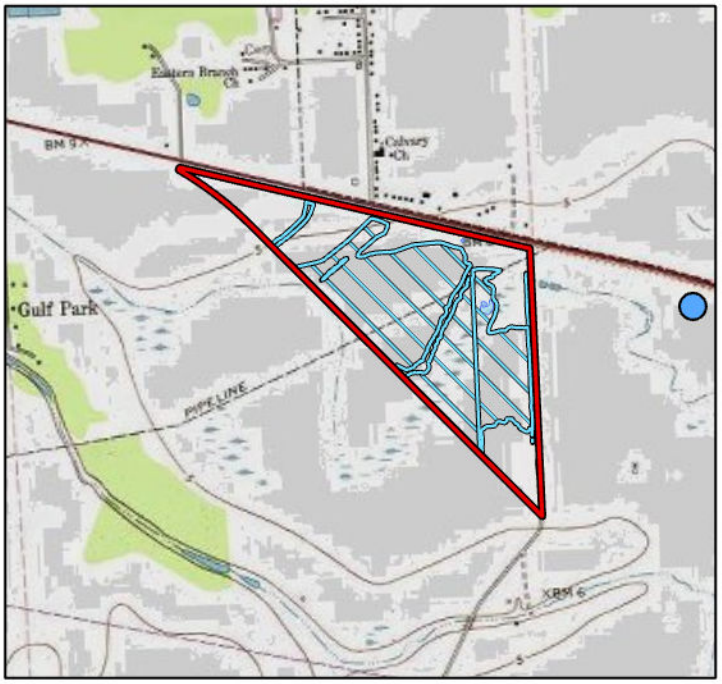
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

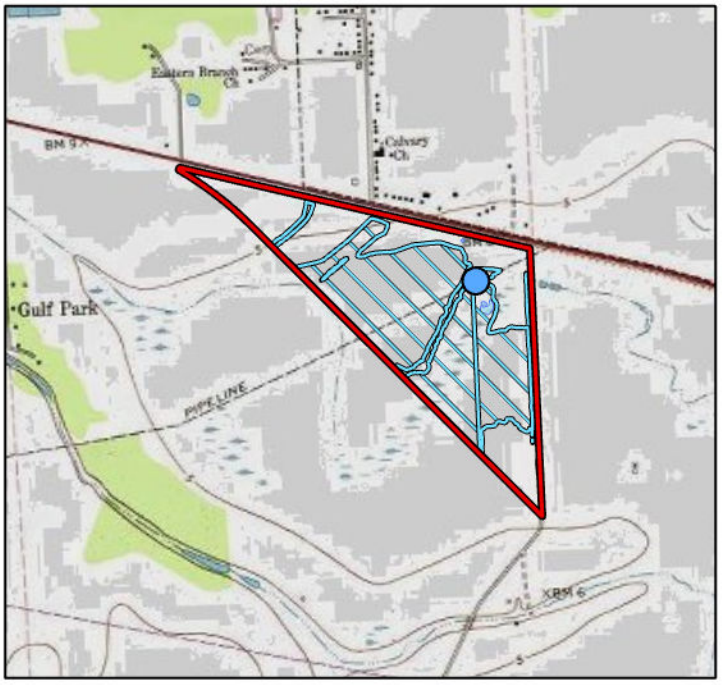
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

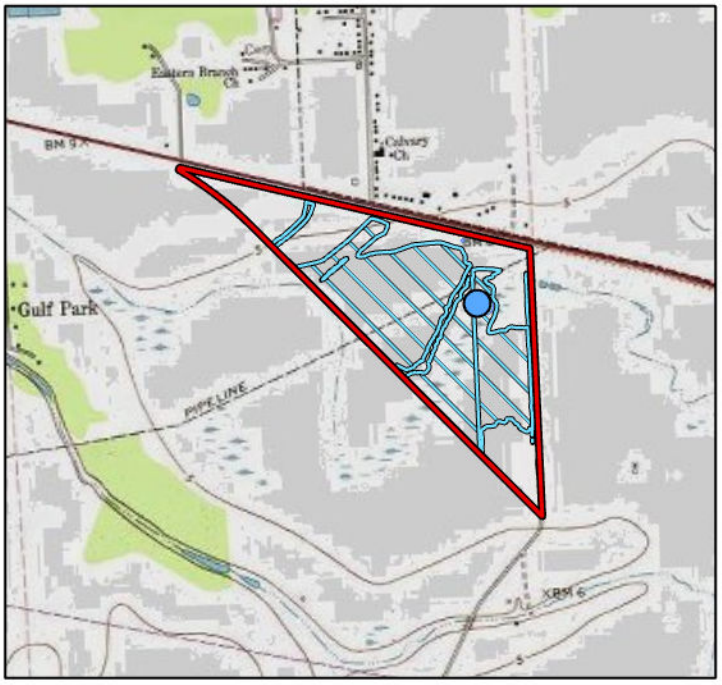
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

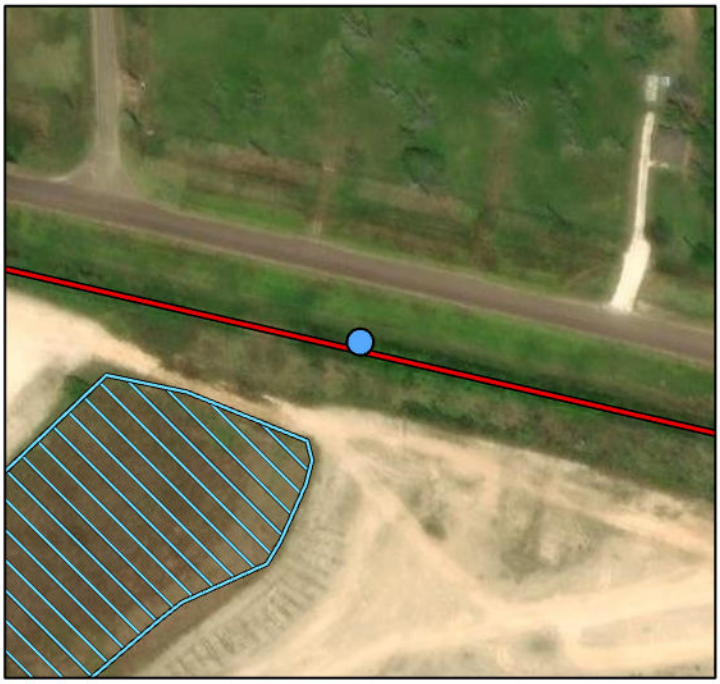
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

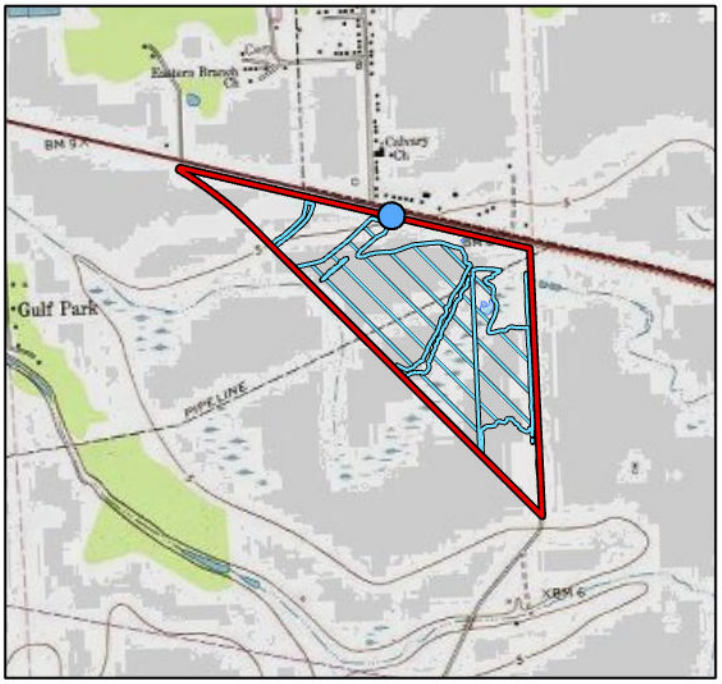
Westwood
Toll Free (888) 937-5150 westwoodps.com

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

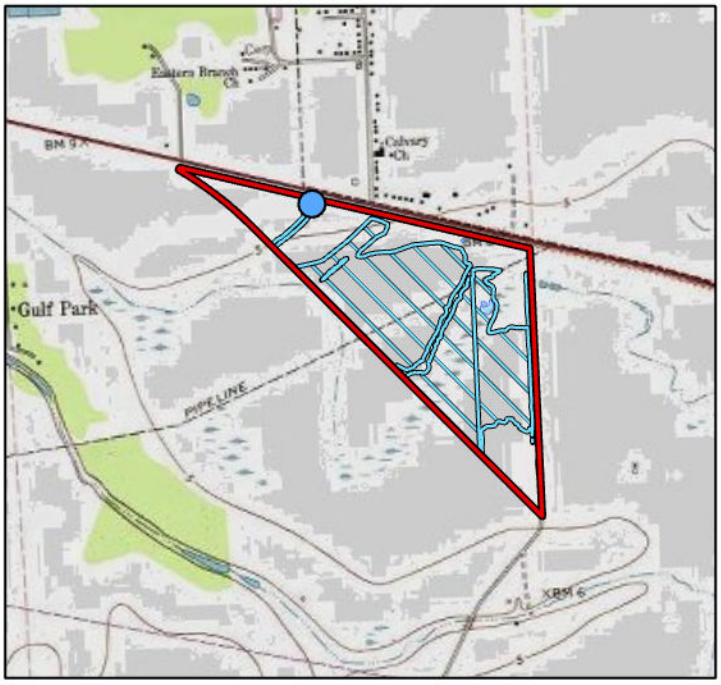
Westwood
Toll Free (888) 937-5150 westwoodps.com



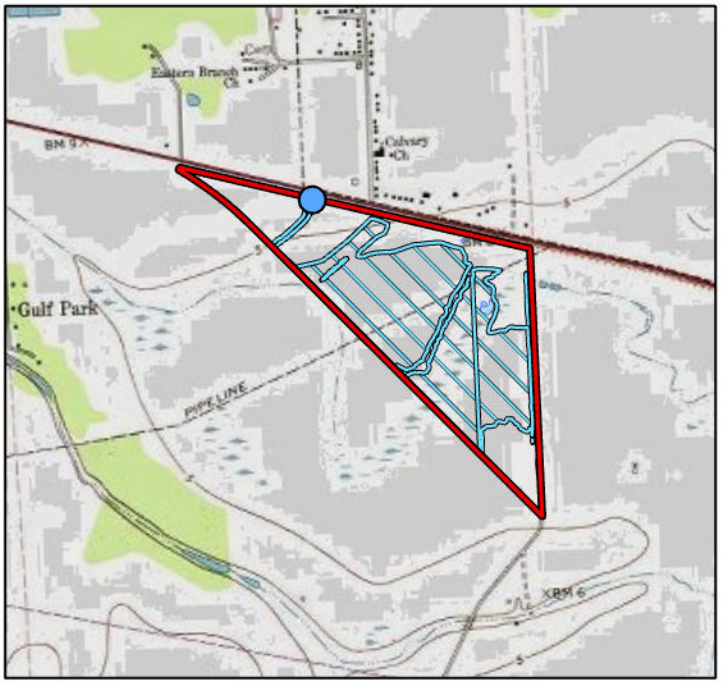
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

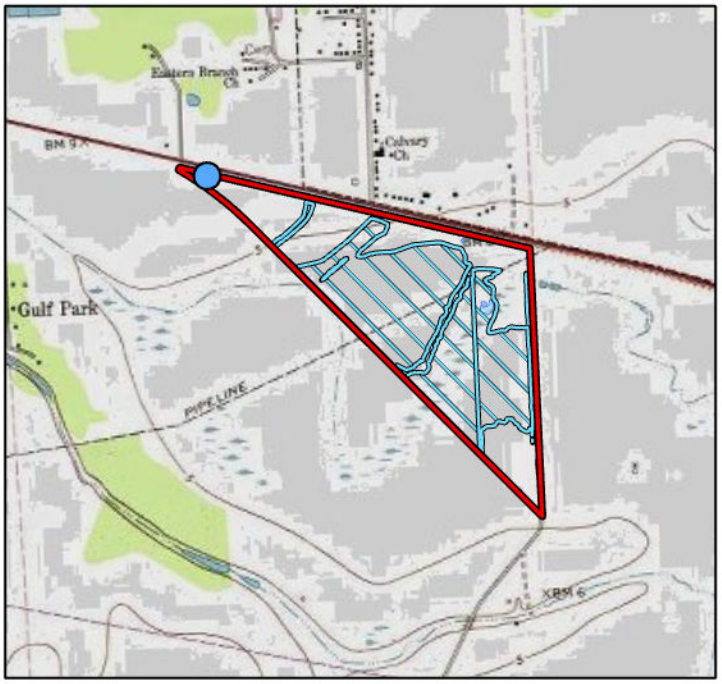
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

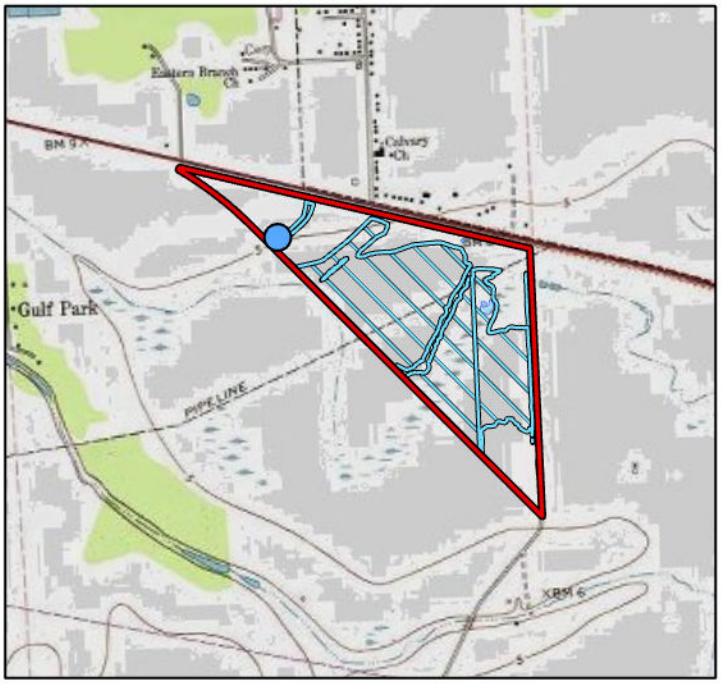
# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

# Fairlane Green Hydrogen Project
# Delineation Site Photograph

Westwood
Toll Free (888) 937-5150 westwoodps.com

U.S. Army Corps of Engineers (USACE)

# DELINEATION REPORT AND JURISDICTIONAL DETERMINATION
# PROJECT INFORMATION SHEET

| 1. APPLICATION NO. | 2. FIELD OFFICE CODE | 3. DATE RECEIVED |
|---|---|---|
| 1625 | | 11/12/2024 |

**APPLICANT AND AGENT INFROMATION**

| 4. APPLICANT'S NAME | 7. AGENT'S NAME |
|---|---|
| First - Joan Middle - Last - Heredia | First - Kevin Middle - Last - Alexander |
| Company - Monarch Energy | Company - Westwood Professional Services |
| E-mail Address - jheredia@monarch.energy | E-mail Address - kevin.alexander@westwoodps.com |
| **5. APPLICANT'S ADDRESS** | **8. AGENT'S ADDRESS** |
| Address- 101 Cooper Street STE 400 | Address- 2901 DALLAS PKWY STE 400 |
| City - Santa Cruz State - CA Zip - 95060 Country - US | City - PLANO State - TX Zip - 75093 Country - US |
| **6. APPLICANT'S PHONE NOs. w/AREA CODE** | **9. AGENTS PHONE NOs. w/AREA CODE** |
| Primary Fax | Primary Fax |
| +16195074130 | +19705962864 |

**NAME, LOCATION, AND DESCRIPTION OF PROJECT SITE**

10. PROJECT NAME OR TITLE: Fairlane Green Hydrogen

11. FILE NUMBER(S) OF PREVIOUS DETERMINATIONS ISSUED ON THE SITE

SWG-2024-00285

| 12. PROJECT COORDINATES (in decimal degrees) | 13. PROJECT STREET ADDRESS (if applicable) |
|---|---|
| Latitude: ◦N 28.9616439 Longitude: ◦W -95.3995827 | Address |
| | City - Surfside Beach State- TX Zip- 77541 |

14. OTHER LOCATION DESCRIPTIONS

Tax Parcel ID(s) -

Acreage of Parcel/Review Area - 173.467919

Section - Township - Range -

County - Brazoria County

15. DIRECTIONS TO THE PROJECT SITE

The Delineation Area consists of approximately 173 acres located along State Highway 36, near the city of Freeport, west of the Brazos River, located in Brazoria County, Texas. An industrial concrete operation called OnSite Concrete Solutions at 3525 County Road is located on the northeast side of the Delineation Area.

16. REASON FOR REQUEST

I intend to construct/develop a project or perform activities on this parcel which may require authorization from the Corps, and the JD would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process.

17. TYPE OF REQUEST:

☑ I am requesting an approved Jurisdictional Determination

☐ I am requesting a preliminary Jurisdictional Determination

☐ I am unclear as to which Jurisdictional Determination and I would like to request and require additional information to inform my decision.

**Appendix A.** Property Owner List:

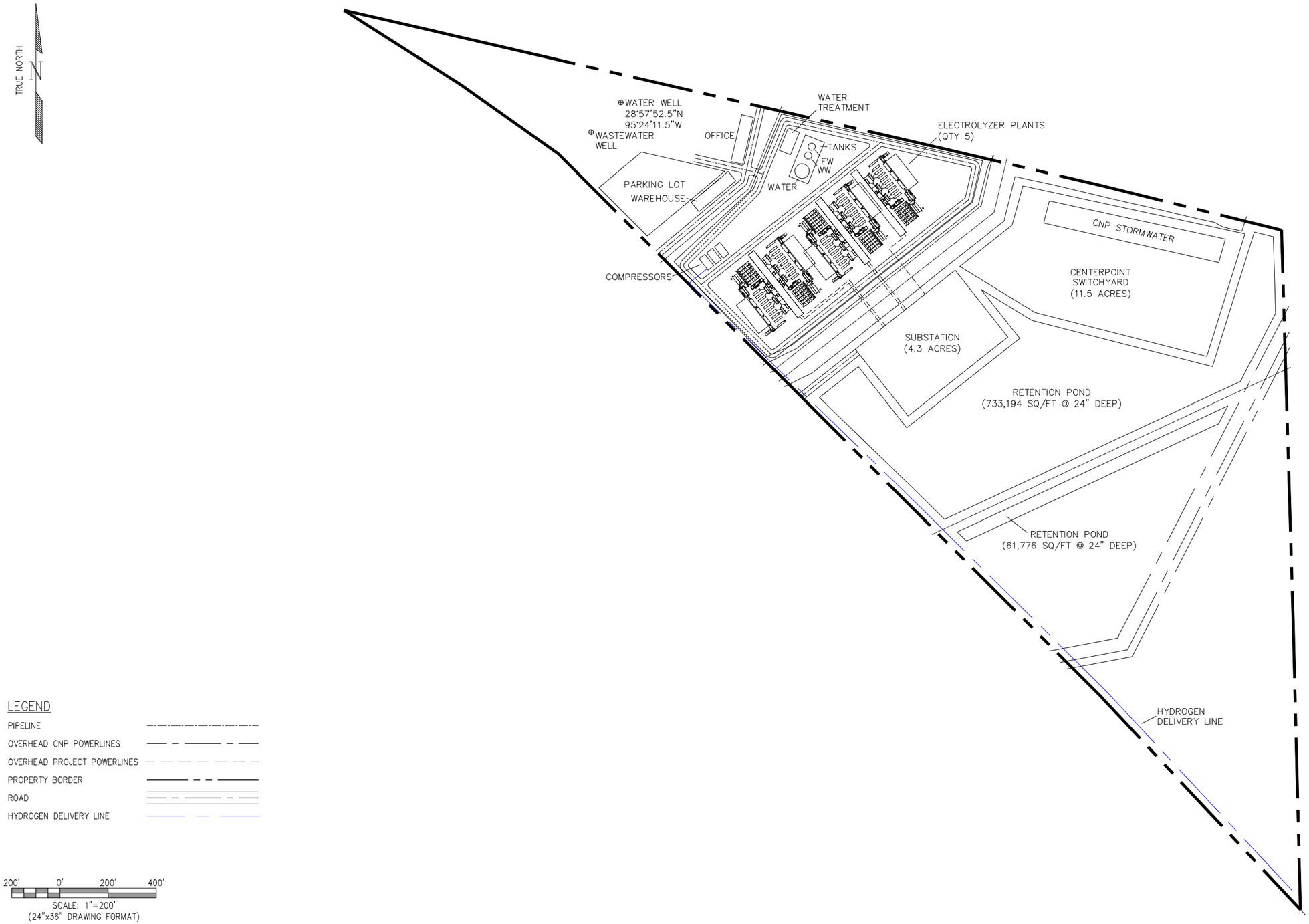
| *First Name* | *Middle Name* | *Last Name* | *Address 1* | *Address 2* | *City* | *State* | *Zip Code* | *Phone Number* | *Phone Number* | *E-mail Address* |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

**Appendix B.** Aquatic Resource Inventory:

| *Water Name* | *Latitude* | *Longitude* | *Measurement Units/Type* | *Measurement Amount/Size of Resource* | *HGM Code* | *Cowardin Code* | *U.S. State* | *Regulation Type* | *Aquatic Resource Type* | *JD Type* |
|---|---|---|---|---|---|---|---|---|---|---|
| WC-01 | 28.9613808 | -95.3950979 | ACRE | 0.12 | DEPRESS | R6 | TEXAS | PRE2015_POSTSACKETT | NON-WOTUS-TRIB.NEGATIVE-A5 | Approved |
| PO-01 | 28.9627108 | -95.3950524 | ACRE | 0.04 | LACUSTRINF | PUB | TEXAS | PRE2015_POSTSACKETT | NON-JD - PREAMBLE - ART.LAKE.POND | Approved |
| WB-02 | 28.9609578 | -95.3973597 | ACRE | 51.4 | LACUSTRINF | PEM | TEXAS | PRE2015_POSTSACKETT | NON-WOTUS-WETL.NEGATIVE-A7 | Approved |
| WB-04 | 28.9635222 | -95.401832 | ACRE | 1.08 | | | TEXAS | PRE2015_POSTSACKETT | NON-WOTUS-WETL.NEGATIVE-A7 | Approved |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

**Attachment Inventory:**

| *Document Label* | *Document Type* | *Document Created Date* | *Document Citation* |
|---|---|---|---|
| Historical Aerial Photographs | Aerial Photograph | 2024-09-25 | Historicalinfo.com |
| Culverts and Ditch Photographs | Site Photograph | 2024-10-30 | Westwood Professional Services |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |




LEGEND

- PIPELINE
- OVERHEAD CNP POWERLINES
- OVERHEAD PROJECT POWERLINES
- PROPERTY BORDER
- ROAD
- HYDROGEN DELIVERY LINE

200' 0' 200' 400'

SCALE: 1"=200'
(24"x36" DRAWING FORMAT)

NOTES:

1. MONARCH MAY BE REQUIRED TO DIG PONDS THAT NORMALLY HOLD WATER AT A DEPTH OF 6 FEET.
2. POWER LINES FROM SUBSTATION TO ELECTROLYZER AREA ARE OVERHEAD.

ASSUMPTIONS:

1. EH MV AREA IS SUPPORTED BY RAISED DIRT
2. EH PROCESS EQUIPMENT IS SUPPORTED BY CONCRETE PIERS
3. ROADS ARE ASSUMED TO BE 2' ELEVATED
4. TWO BUILDINGS 50' X 200' EACH ARE INCLUDED
5. SUBSTATION REQUIREMENT IS ESTIMATED AT 5600 CUBIC YARDS OF DISPLACEMENT
6. THREE COMPRESSORS ARE ACCOUNTED FOR

| NO. | DATE | DESCRIPTION | BY | CHK | APPD |
|---|---|---|---|---|---|
| A | 11/05/24 | ISSUED FOR REVIEW | TA | PA | PJ |

MONARCH ENERGY

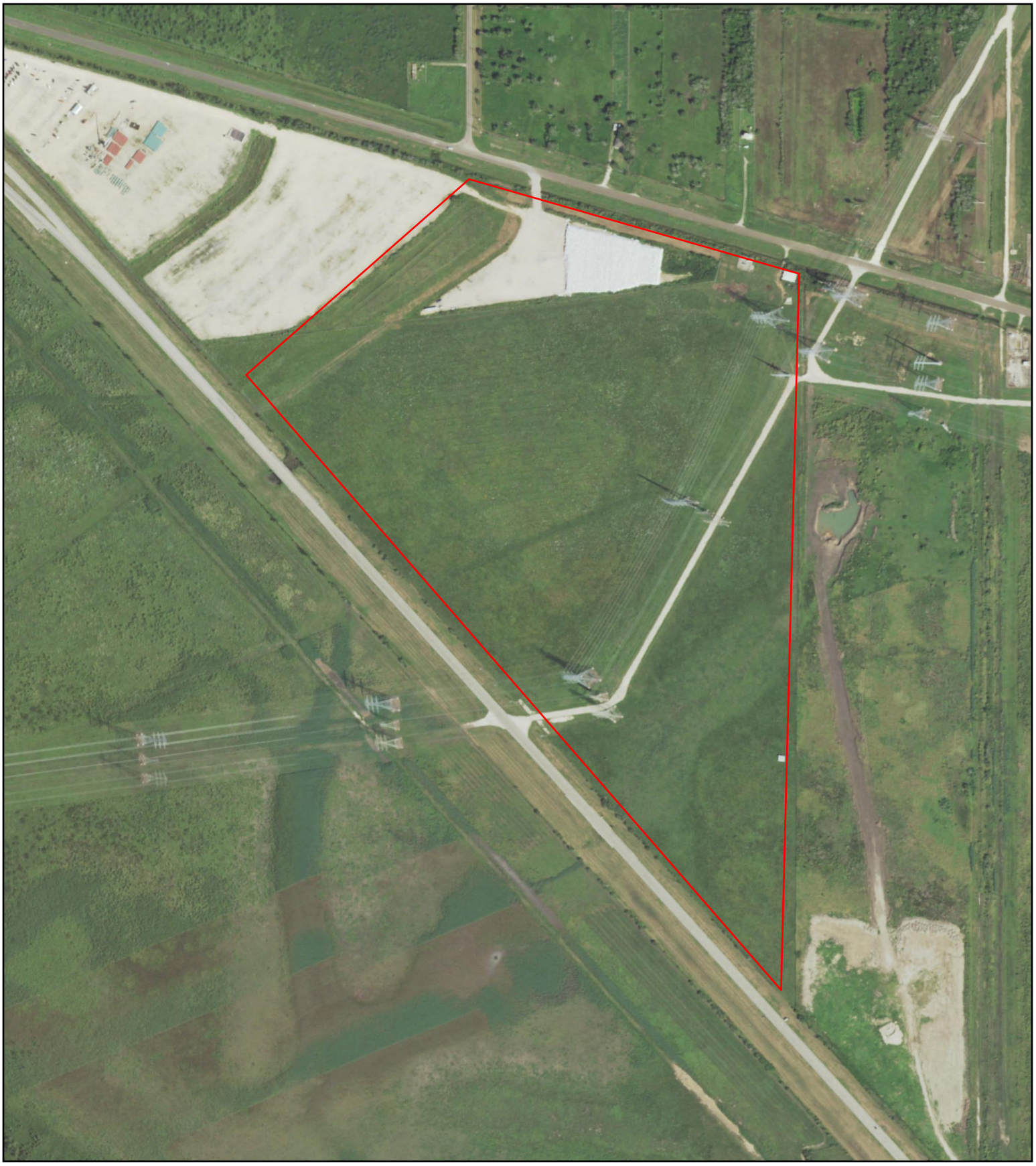
TEXAS REGISTERED ENGINEERING FIRM F-4000
WWW.MHES.COM

MONARCH ENERGY

FAIRLANE PROJECT

SITE LAYOUT

SCALE: 1"=200' | PROJ. NO. 24MH072 | DRAWING NO. EM7-5002 | REVISION NO. A

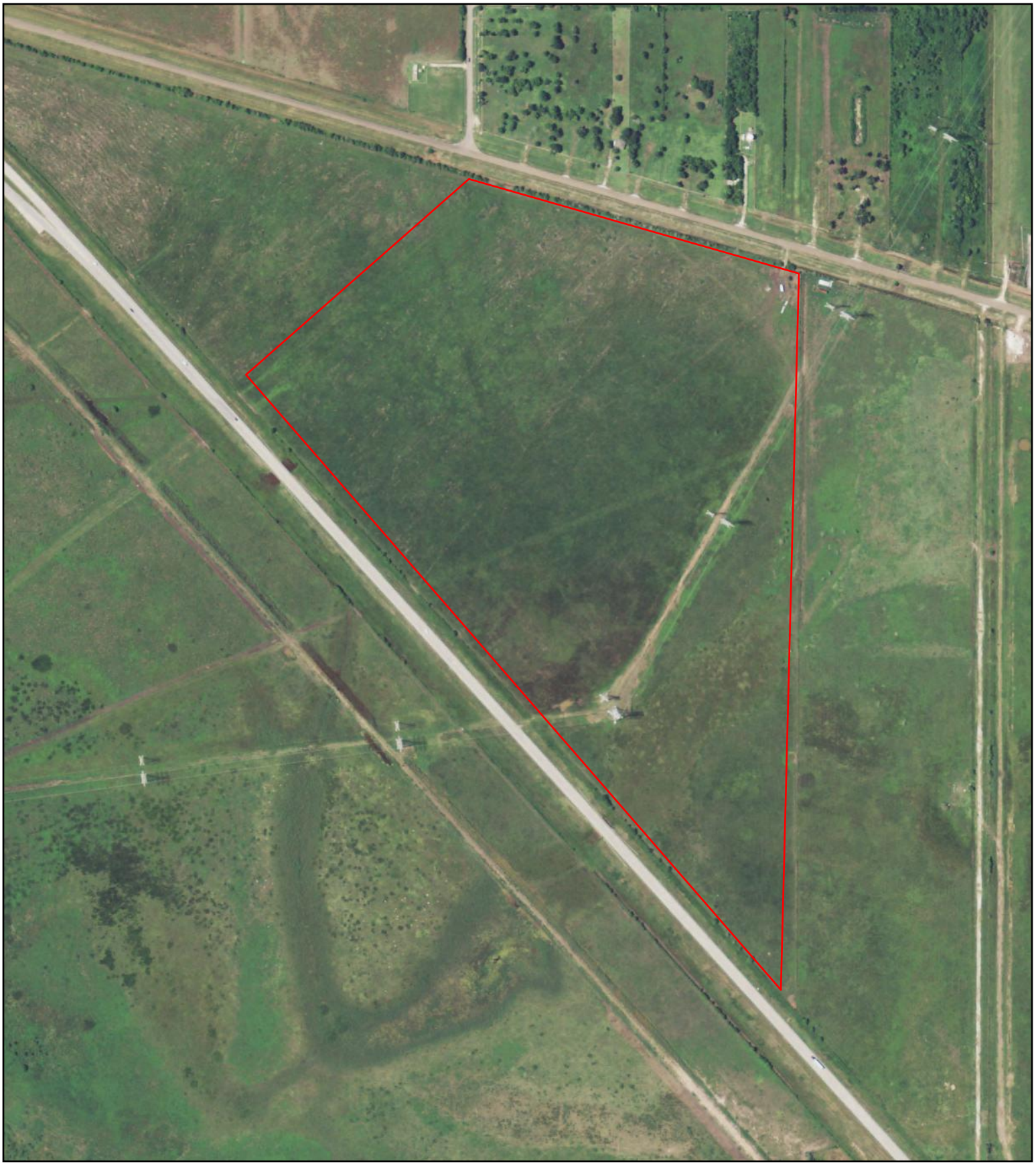


Site boundaries shown in red are approximate

| | | | |
|---|---|---|---|
| ME Fairlane Green Hydrogen<br><br>Brazoria-West Columbia, TX | N | **2022**<br>HIG Project # 2085166<br>Client Project # R0050939.00<br>Approximate Scale 1: 6,000 (1"=500')<br>www.historicalinfo.com | HIG |

Site boundaries shown in red are approximate

| | | | |
|---|---|---|---|
| ME Fairlane Green Hydrogen<br><br>Brazoria-West Columbia, TX | N | **2016**<br>HIG Project # 2085166<br>Client Project # R0050939.00<br>Approximate Scale 1: 6,000 (1"=500')<br>www.historicalinfo.com | HIG |



Site boundaries shown in red are approximate

| | | | |
|---|---|---|---|
| ME Fairlane Green Hydrogen<br><br>Brazoria-West Columbia, TX | N | **2012**<br>HIG Project # 2085166<br>Client Project # R0050939.00<br>Approximate Scale 1: 6,000 (1"=500')<br>www.historicalinfo.com | HIG |

Site boundaries shown in red are approximate

| | | | |
|---|---|---|---|
| ME Fairlane Green Hydrogen<br><br>Brazoria-West Columbia, TX | N | **2009**<br>HIG Project # 2085166<br>Client Project # R0050939.00<br>Approximate Scale 1: 6,000 (1"=500')<br>www.historicalinfo.com | HIG |

Site boundaries shown in red are approximate

| | | | |
|---|---|---|---|
| ME Fairlane Green Hydrogen<br><br>Brazoria-West Columbia, TX | N | **2004**<br>HIG Project # 2085166<br>Client Project # R0050939.00<br>Approximate Scale 1: 6,000 (1"=500')<br>www.historicalinfo.com | HIG |

Site boundaries shown in red are approximate

| | | | |
|---|---|---|---|
| ME Fairlane Green Hydrogen<br><br>Brazoria-West Columbia, TX | N | **1995**<br>HIG Project # 2085166<br>Client Project # R0050939.00<br>Approximate Scale 1: 6,000 (1"=500')<br>www.historicalinfo.com | HIG |

Site boundaries shown in red are approximate

| | | | |
|---|---|---|---|
| ME Fairlane Green Hydrogen<br><br>Brazoria-West Columbia, TX | N | **1989**<br>HIG Project # 2085166<br>Client Project # R0050939.00<br>Approximate Scale 1: 9,600 (1"=800')<br>www.historicalinfo.com | HIG |

Site boundaries shown in red are approximate

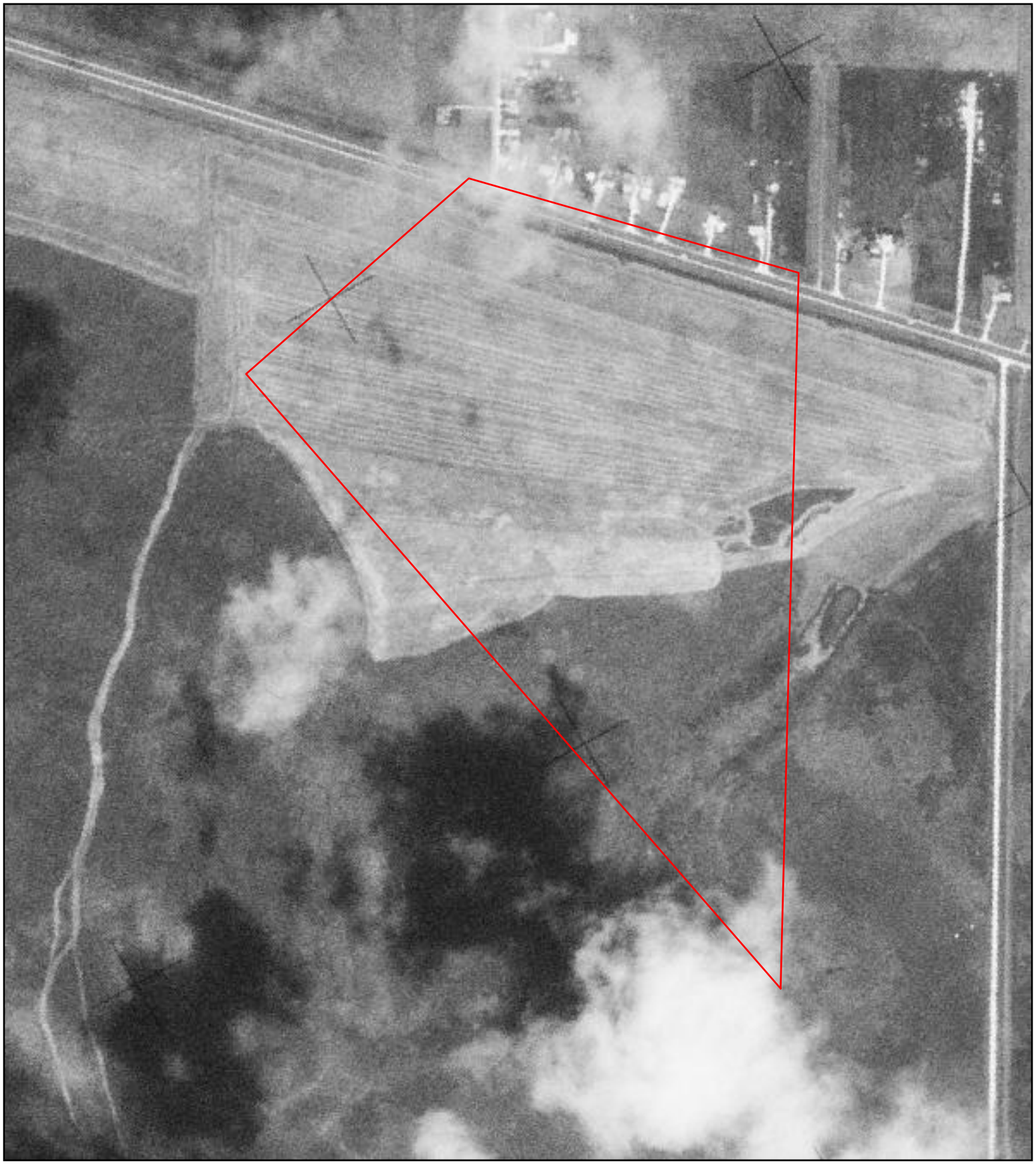
| | | | |
|---|---|---|---|
| ME Fairlane Green Hydrogen<br><br>Brazoria-West Columbia, TX | N | **1983**<br>HIG Project # 2085166<br>Client Project # R0050939.00<br>Approximate Scale 1: 6,000 (1"=500')<br>www.historicalinfo.com | HIG |

Site boundaries shown in red are approximate

| | | | |
|---|---|---|---|
| ME Fairlane Green Hydrogen<br><br>Brazoria-West Columbia, TX | N | **1979**<br>HIG Project # 2085166<br>Client Project # R0050939.00<br>Approximate Scale 1: 9,600 (1"=800')<br>www.historicalinfo.com | HIG |

Site boundaries shown in red are approximate

| | | | |
|---|---|---|---|
| ME Fairlane Green Hydrogen<br><br>Brazoria-West Columbia, TX | N | **1974**<br>HIG Project # 2085166<br>Client Project # R0050939.00<br>Approximate Scale 1: 6,000 (1"=500')<br>www.historicalinfo.com | HIG |



Site boundaries shown in red are approximate

| | | | |
|---|---|---|---|
| ME Fairlane Green Hydrogen<br><br>Brazoria-West Columbia, TX | N | **1969**<br>HIG Project # 2085166<br>Client Project # R0050939.00<br>Approximate Scale 1: 6,000 (1"=500')<br>www.historicalinfo.com | HIG |

Site boundaries shown in red are approximate

| | | | |
|---|---|---|---|
| ME Fairlane Green Hydrogen<br><br>Brazoria-West Columbia, TX | N | **1962**<br>HIG Project # 2085166<br>Client Project # R0050939.00<br>Approximate Scale 1: 6,000 (1"=500')<br>www.historicalinfo.com | HIG |

Westwood

Photographs and Locations for Culvert locations on all sides of the proposed Fairlane Green Hydrogen Project. Photographs taken on October 30, 2024.

Westwood



westwoodps.com
(888) 937-5150

Westwood



westwoodps.com
(888) 937-5150

Westwood

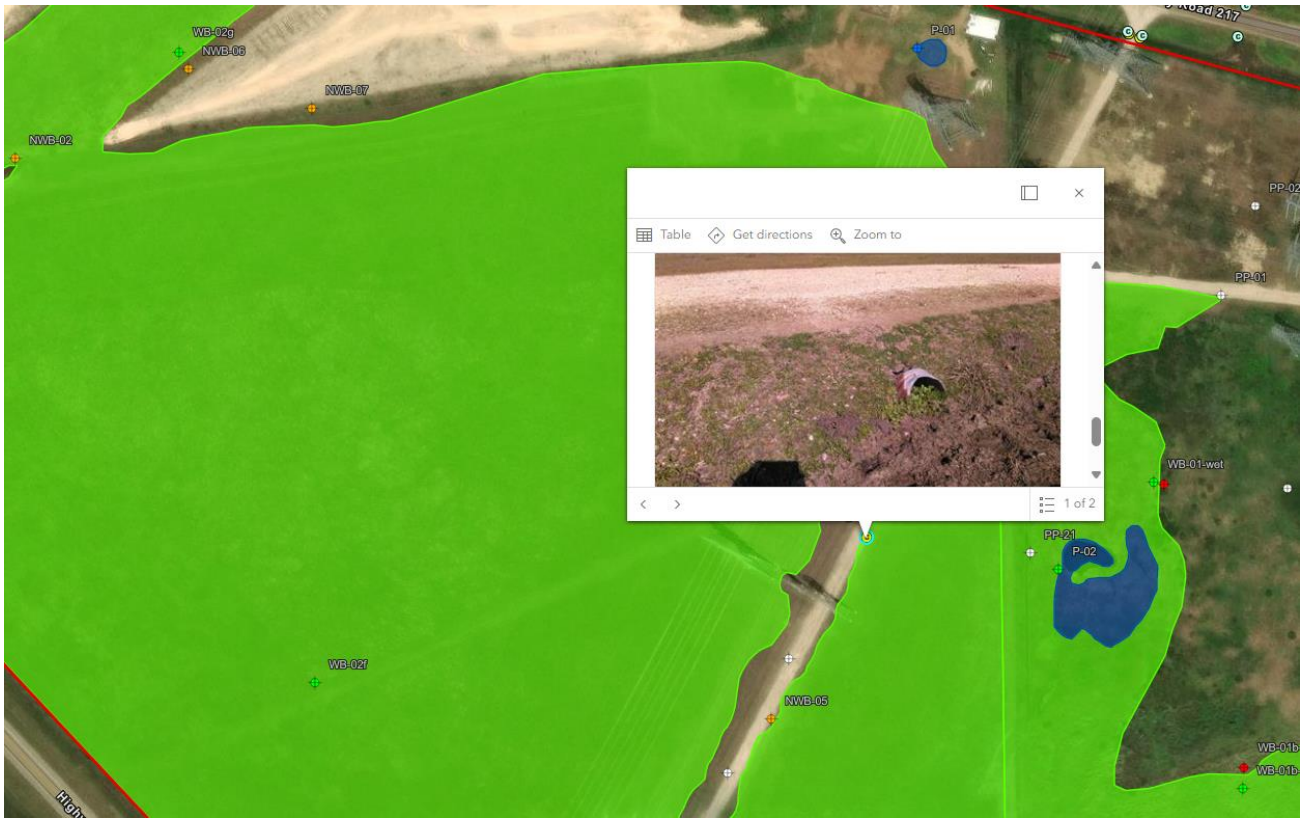

westwoodps.com
(888) 937-5150

Westwood



westwoodps.com
(888) 937-5150

Westwood


westwoodps.com
(888) 937-5150

Westwood

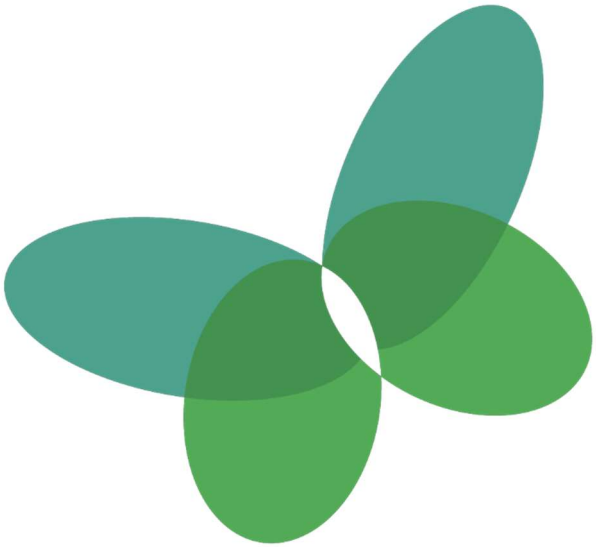
Screenshots of Google Earth Images of Culverts at Fairlane Green Hydrogen.


Westwood


Edit
Dry culvert Screenshot 2024-10-30 122109.jpg
Search Google Maps
3410 TX-36
Freeport, Texas
Google Street View
May 2024
See more dates

Westwood

Updated project boundary and limits of disturbance indicated in blue.



# Project_Description

# Monarch Fairlane LLC

November 2024

## Project Overview

Monarch Fairlane LLC, (Fairlane) is in the process of obtaining permit approvals for a proposed 500-600 MW Fairlane Green Hydrogen Project (Project). The location of the Project is approximately 1.5 miles west of Freeport, Texas. The land is controlled under a purchase option and is within unincorporated Brazoria County. The Project Parcel boundary is approximately 118 acres of land on parcel numbers 157621 and 157496 (as shown in Figure 1) within Original Texas Land Survey Sections A-89, A-90 and A-217.

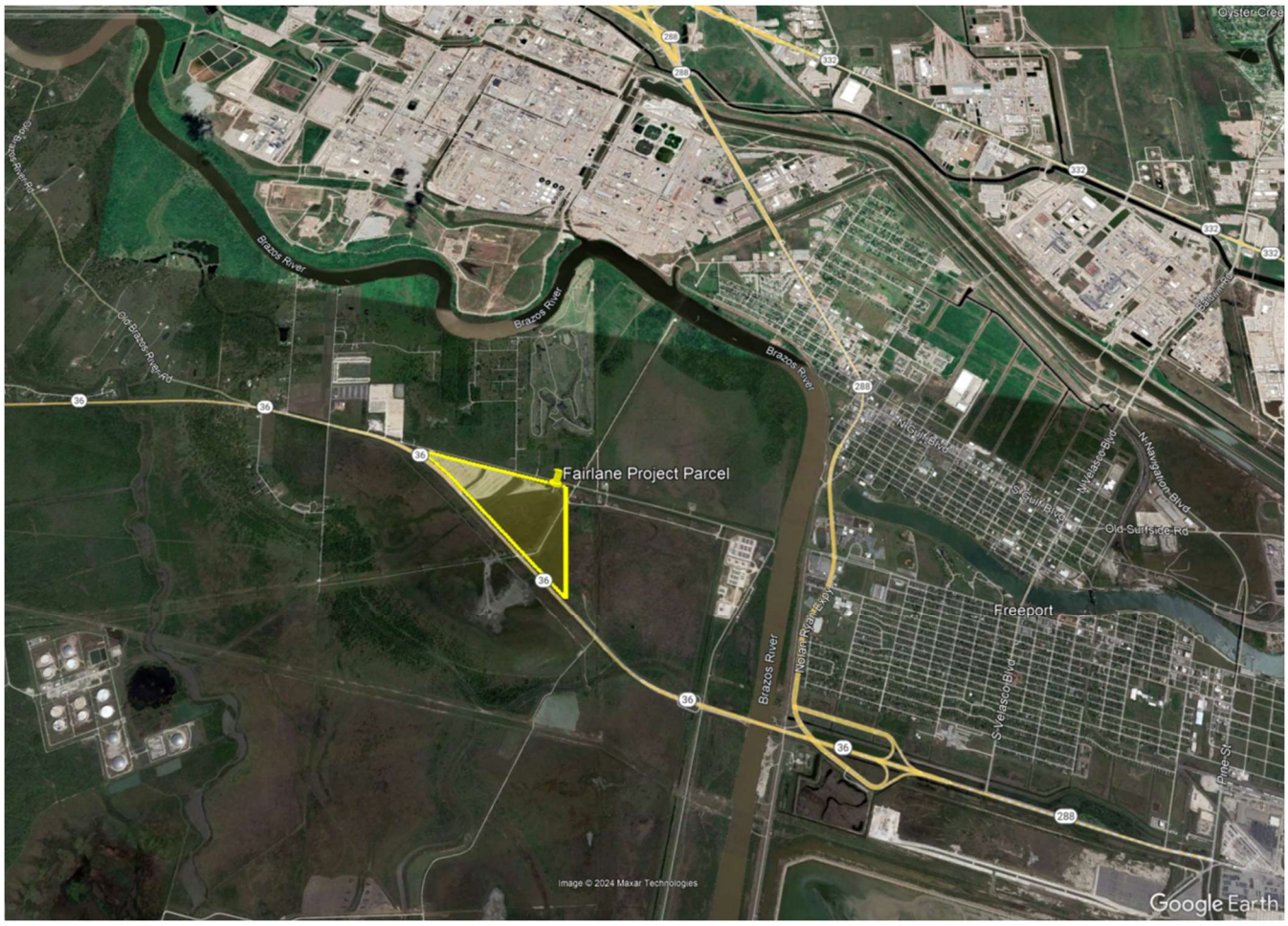



*Figure 1: Fairlane Facility Location Map*

The Fairlane Development Area is approximately 94 acres (as shown in Figure 2) confined within State Highway 36 to the south, Country Road 217 to the north and transmission lines with a raised road to the east (the yellow outline in the facility an project map is greater than planned limits of disturbance). There are numerous natural gas pipelines, several hazardous pipelines and multiple transmission lines that run through the property with easements that restrict where project components can be located. The onsite existence of 345 kV lines adjacent to the site is a key consideration to minimize offsite impacts. Further, an existing concrete facility has previously disturbed the northeast portion of the Development Area. The Project Parcel is within a 100-year floodplain with generally flat elevation that

ranges from 4-8 feet above mean sea level. Drainage is from northwest to the southeast. Surrounding land uses in the Project Vicinity include the Freeport Golf Course, industrial and commercial development, a wildlife management area, mobile home parks and a residential area approximately 1.5 miles to the east. The Project will support community and economic development in Brazoria County through job creation, local taxes, and construction activities, as well as contributing to the development of a green hydrogen supply for nearby industrial facilities that already use hydrogen in process operations.

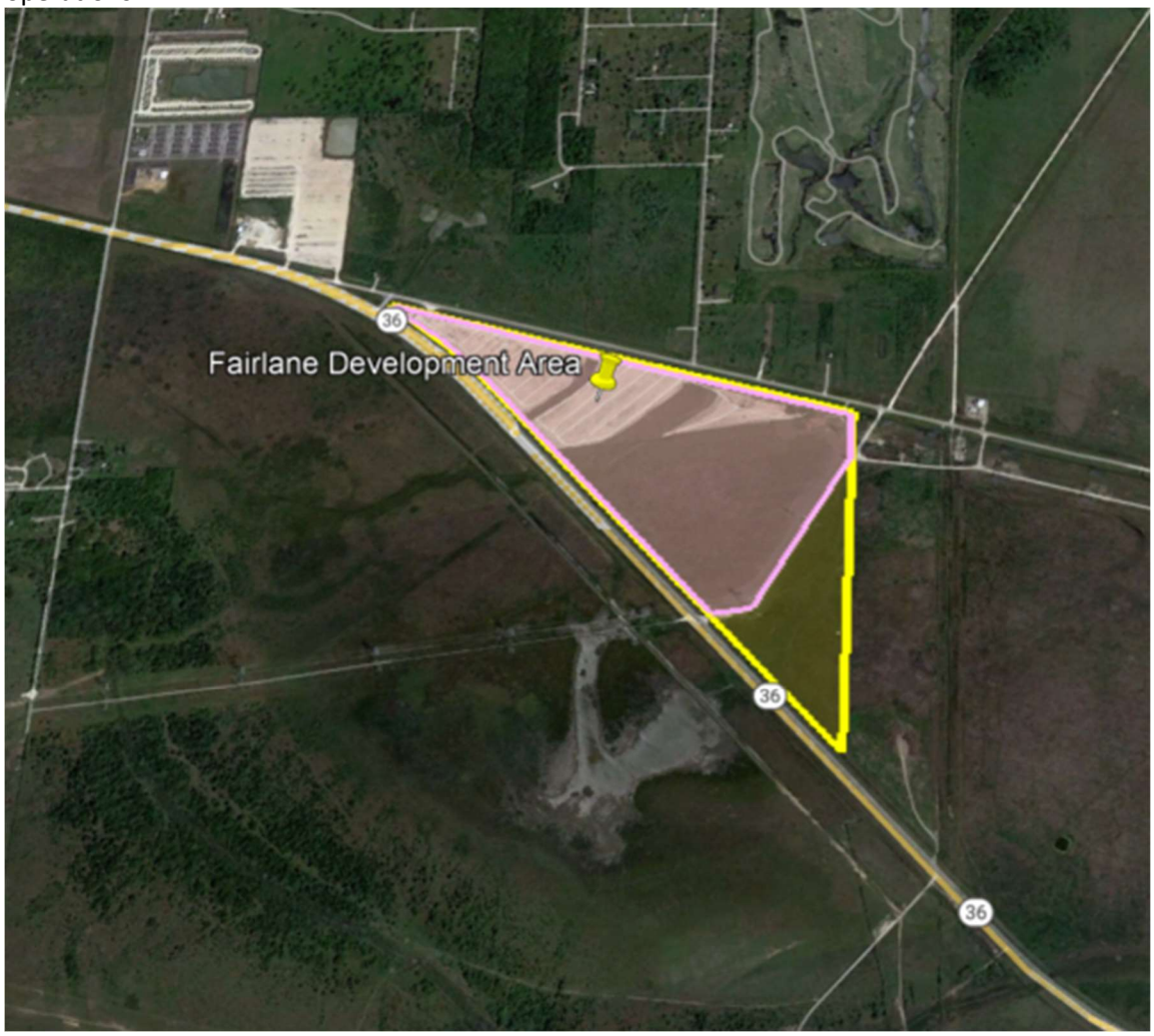



*Figure 2.: Fairlane Development Area ( Parcel in yellow, Development Area shown in pink)*

## Project Description

The proposed Project will produce low-carbon hydrogen by utilizing regionally sourced, green renewable energy and groundwater. The energy will be acquired through purchase and sale agreements. The use of an onsite groundwater well will be permitted and regulated by the Brazoria County Groundwater Conservation District. The electricity and water will be used to generate gaseous green hydrogen in five electrolyzer skids. The electrolysis process uses electricity to break down water molecules into hydrogen and oxygen. The oxygen is released into the atmosphere and hydrogen will be routed to a hydrogen pipeline adjacent to the Project Parcel for delivery to existing offsite industrial facilities.

**Project Description**
**Fairlane Green Hydrogen**

The Point of Interconnection (POI) will be the CenterPoint Energy transmission system via an onsite transmission line tap that will connect the Project to the nearby Jones Creek 345 kV substation. It is necessary for the Project to connect to the 345 kV system due to the large 500-600 MW load of the facility. An interconnection request has been filed with CenterPoint Energy for the POI and adequate capacity to serve the Project load has been verified at this location. CenterPoint Energy has provided a Switching Station design on approximately 11.5 acres.

The Project will obtain groundwater from an onsite well. An application for the use of groundwater was submitted to the Brazoria County Groundwater District and permit approvals are anticipated in November 2024. A Reverse Osmosis (RO) water system will be located onsite to treat the water to electrolyzer manufacturer specifications and will generate a non-hazardous waste stream with concentrated total dissolved solids (brine discharge).

The brine discharge will be routed for disposal to a deep injection well into a nondrinking water aquifer. This well will be permitted under the TCEQ Class underground injection program. It is currently anticipated that the Project will be eligible for the TCEQ Class I UIC General Permit WDWG010000.

The site will have several water tanks for raw and treated water as well as brine water. Fire suppression will utilize appropriate chemical suppression for electrical equipment and well water for overall site fire control. Hydrants or other fire department requirements will be coordinated with the local fire department as part of the development and project design process.

The Development Area equipment footprint will be secured by a chain link fence with three-strand barbed wire affixed on top, for a total height of 10 feet. Gated and locked access points will be provided for the Project site. The Project ingress and egress access points will be off Country Road 217 on the north side of the site. Internal access roads will be all-weather to ensure first responder access to the site offices and warehouse, as well as circulation for O&M to major equipment areas. Major equipment will be less than 40 feet in height and supported by piers and concrete foundations. The project may use a hydrogen storage sphere that is about 50 feet high. Lighting installed for the project will be designed to code to provide the minimum illumination needed to achieve safety and security and will be downward-facing and shielded to focus illumination on the desired area only. No plantings and/or screening are planned around or in the project area at this time.

As the project is within a designation FEMA floodplain, it will necessary to raise portions of the site and equipment using a combination of concrete foundations and raised pier footings. Retention basins will be designed to handle the 100 year storm. Consultation with FEMA and permits from the Brazoria County Drainage District will be required.

A full-time Operations and Maintenance (“O&M”) crew of 20-30 employees will be hired and trained to perform routine inspections, maintenance, and repairs while also ensuring the Project is adhering to all necessary safety, hazardous materials, stormwater, and erosion requirements. There will also be approximately 300 part-time employees contracted during the construction phase of the Project. Upon the conclusion of the Project’s useful life, Fairlane will remove all project materials to a minimum depth of 24 inches.

## Project Layout

The Project Layout is driven by three major considerations, consisting of;
1) Avoid placement of major equipment on top of existing pipeline and transmission line easements
2) Avoid and minimize wetland impacts by locating equipment in upland or previously built areas
3) Proximity of electrical equipment to the interconnection POI.

Figure 3 is satellite imagery of the site. Existing easements are shown in red and orange and divide the site up into four sections. Previously disturbed and upland areas are in the NW portions of the site and cover two of the western most sections. The middle third section is potentially an isolated emergent wetland area surrounded by Highway 36, CR 217 and an existing multiple line transmission corridor with a raised road. The fourth section to the east of transmission line road and outside of the Development Area is an emergent wetland area and no permanent disturbance is proposed for this area.

Figure 4 is a Site Layout. Description of equipment starting in the western most corner and traveling to the east are as follows:

a. Office, warehouse, water supply and disposal wells, water treatment and tanks
b. Electrolyzer area,
c. Substation and switching station area which includes stormwater retention basins
d. Open space.

There are also several roads within the facility boundary that are shown on the site layout.

Temporary laydown areas will be located within proposed permanent disturb areas. CenterPoint Energy proposes to use an existing disturbed offsite laydown area. The electrolyzer equipment will be built in modules starting at the south edge of the property and then building out to the north, such that no additional temporary laydown area will be required for this equipment. Temporary laydown for the offices, warehouse, and water/disposal facilities will be in the existing disturbed northwest corner of the property.

There is the potential for some additional temporary linear facility disturbance for a short hydrogen pipeline along the south edge of the property from the electrolyzer area to the southeast corner of the Project parcel to tie into an existing hydrogen pipeline. CenterPoint Energy may also have some temporary disturbance along their transmission line route from the Jones Creek substation to their proposed switching station. Both of these linear facilities are anticipated to be eligible for a USACE Nationwide Permit.

## Historical Project Facilities

Historical aerials of the Project Development Area are attached in the “Supporting Information” documents in the application. Aerials from the 1950’s indicate that the site was previously farmed in the 50s, there are limited potential wetland areas to the east of the site. Subsequent years document the development of roads in the area. In the period from 1974-1979 it appears the transmission lines and road were constructed. These bermed and constructed roads seem to isolate and create the potential for water accumulation at the site. There are culverts at various sites surrounding the site but they are dry during portions of the year. Recent site photos document that this culvert does not have continuous flow or continuous offsite water connection.


Figure 3, Satellite Imagery with Easements

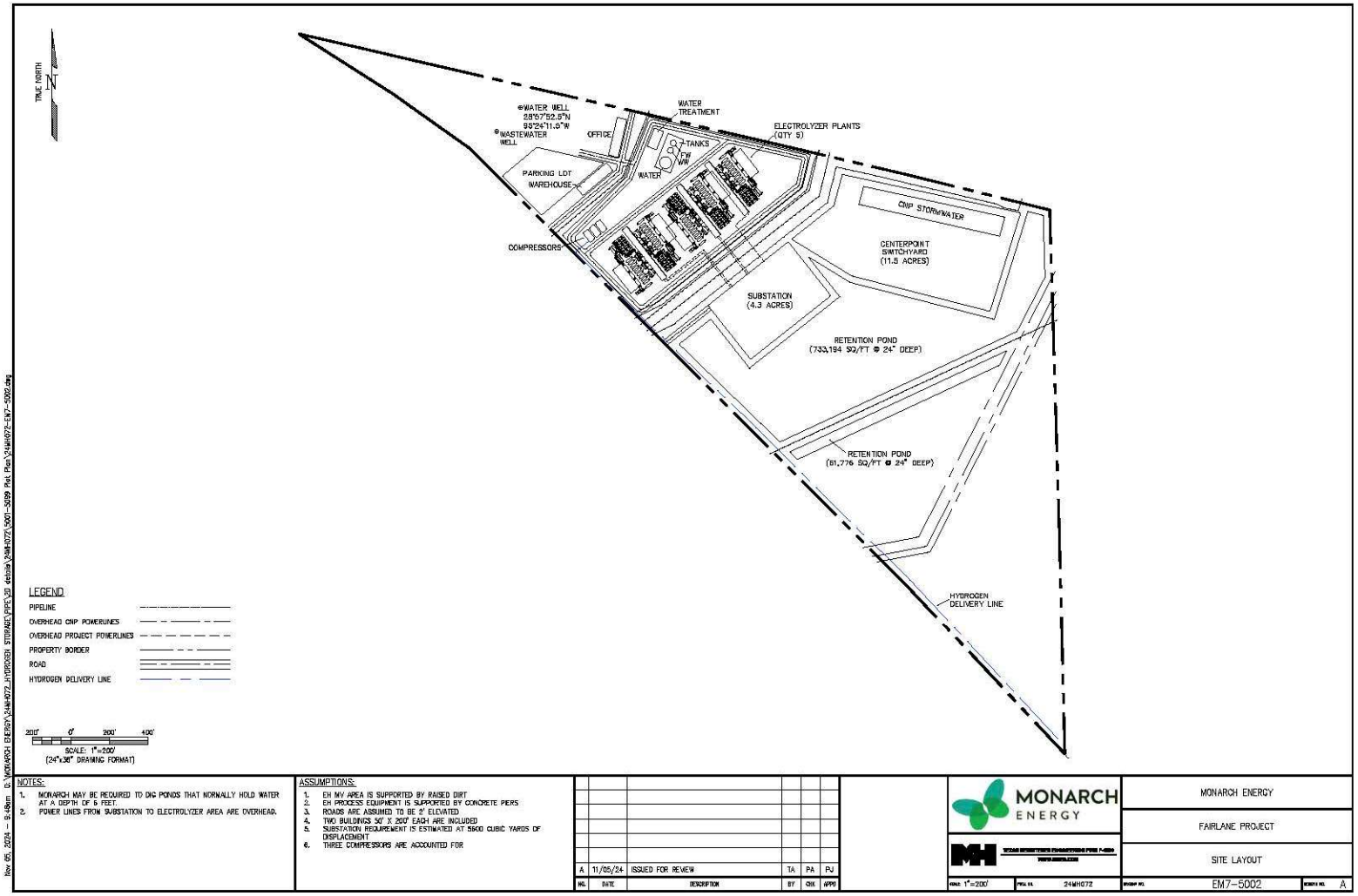



Figure 4 Site Layout

CESWG-RD-C 14 April 2025

MEMORANDUM FOR THE FILE

SUBJECT: SWG-2024-00285; Monarch Energy, No Permit Required, Approximate 173.4 Acre Tract, Located South of Country Road 217 and North of Highway 36 in Freeport, Brazoria County, Texas

1. This memo is in response to a No Permit Required request from Westwood Professional Services, on behalf of Monarch Energy, received 20 November 2024. The project is located south of County Road 217 (Latitude 28.9616439 North Longitude 95.3995827 West) in Freeport, Brazoria County, Texas.

2. A desk review of the information reviewed includes the following;

- Wetland Delineation Report received 20 November 2024
- Aerial Photos: Google Earth Aerial Photos
- United States Department of Interior (DOI), Fish and Wildlife Service (FWS), National Wetland Inventory (NWI): FWS NWI Online Mapper. (http://www.fws.gov/wetlands/data/mapper.HTML).
- United States Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS), Soil Survey: NRCS National Cooperative Soil Survey (NCSS) Google Earth Layer (http://casoilresource.lawr.ucdavis.edu/soil_web/kml/mapunits.kml).
- United States Geological Survey Topographic Maps

A desk review was performed on 11 April 2025. Based on available Google Earth Aerial Imagery, the site has been partially developed, with impervious surface covering the northwest portion of the project site. PO-01 is a stock pond that was dug from uplands sometime between 1995 and 2004. PO-02 is a pond dug from wetlands sometime between April 2022 and February 2023. Since it was dug from wetlands, it will be treated as a wetland. The development in the northwest portion of the site occurred between 2015 and 2017. The rest of the site has remained undeveloped. The soil map indicates Pledger Clay, 0 to 1 percent slopes, rarely flooded. This series consists of moderately, well-drained soil and is a nonhydric soil. Velasco clay, 0 to 1 percent slopes, frequently flooded, and Surfside clay, 0 to 1 percent slopes, occasionally flooded are also present and both are considered hydric. The topographic maps indicates that the Brazos River is located approximately 0.97 miles east of the Site.

3. The Wetland Delineation report revealed five wetlands (WB-01 ~ 47.38 acres, WB-02 ~ 51.4 acres, WB-04 ~ 1.08, WB- 04 ~ 0.55 acres, WB-06 ~ 0.84 acres), one ephemeral stream (WC-01 ~ 0.12 acres), and two ponds (PO-01 ~ acres, PO-02 ~0.49 acres) are located within the review area. Based on the Google Earth aerial photos and site visit photos from the consultant, WC-01 does not carry a relatively permanent flow and is not a water of the United States. The six wetlands present on site (WB-01, WB-02, WB-04, WB-05, WB-06, PO-02) do not abut a relatively permanent water or a traditionally

navigable water, and therefore are not waters of the United States. PO-01 is a man-made stock pond dug wholly from uplands. The 1986 preamble to 33 CFR 320-330 regulations states that for clarification it should be noted that we generally do not consider the following waters to be “waters of the United States…(C) artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, setline basins, or rice growing. Therefore, PO-01 is not a water of the United States and is not subject to Section 404 of the Clean Water Act.

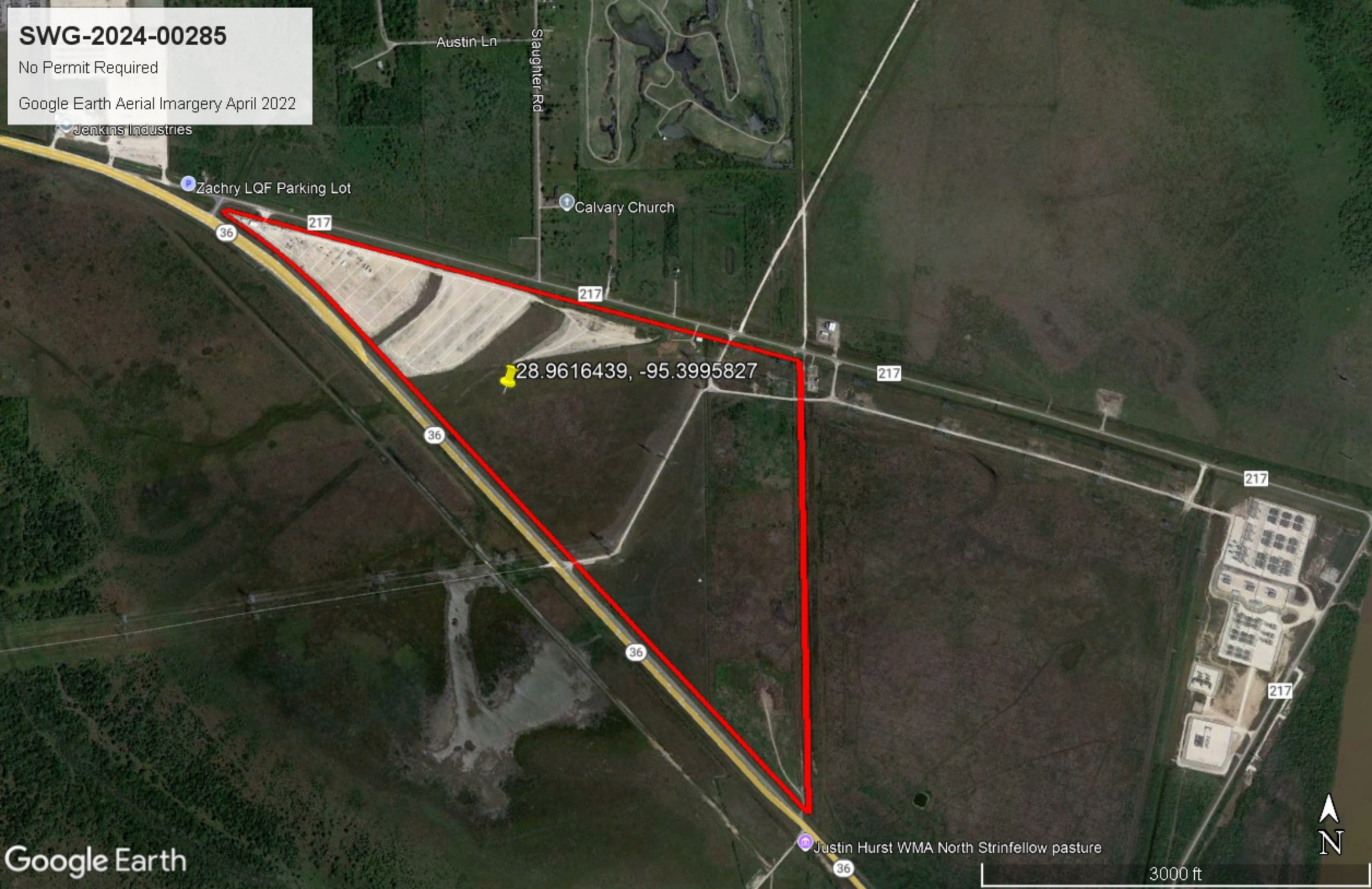
4. In conclusion, WB-01, WB-02, WB-04, WB-05, WB-06, WC-01, PO-01 and PO-02 are not subject to Section 404 of the Clean Water Act and/or Section 10 of the Rivers and Harbors Act. A Department of Army permit is not required for the discharge of dredged and/or fill material into WB-01, WB-02, WB-04, WB-05, WB-06, WC-01, PO-01 or PO-02. This determination is valid for five years unless new information warrants a revision.

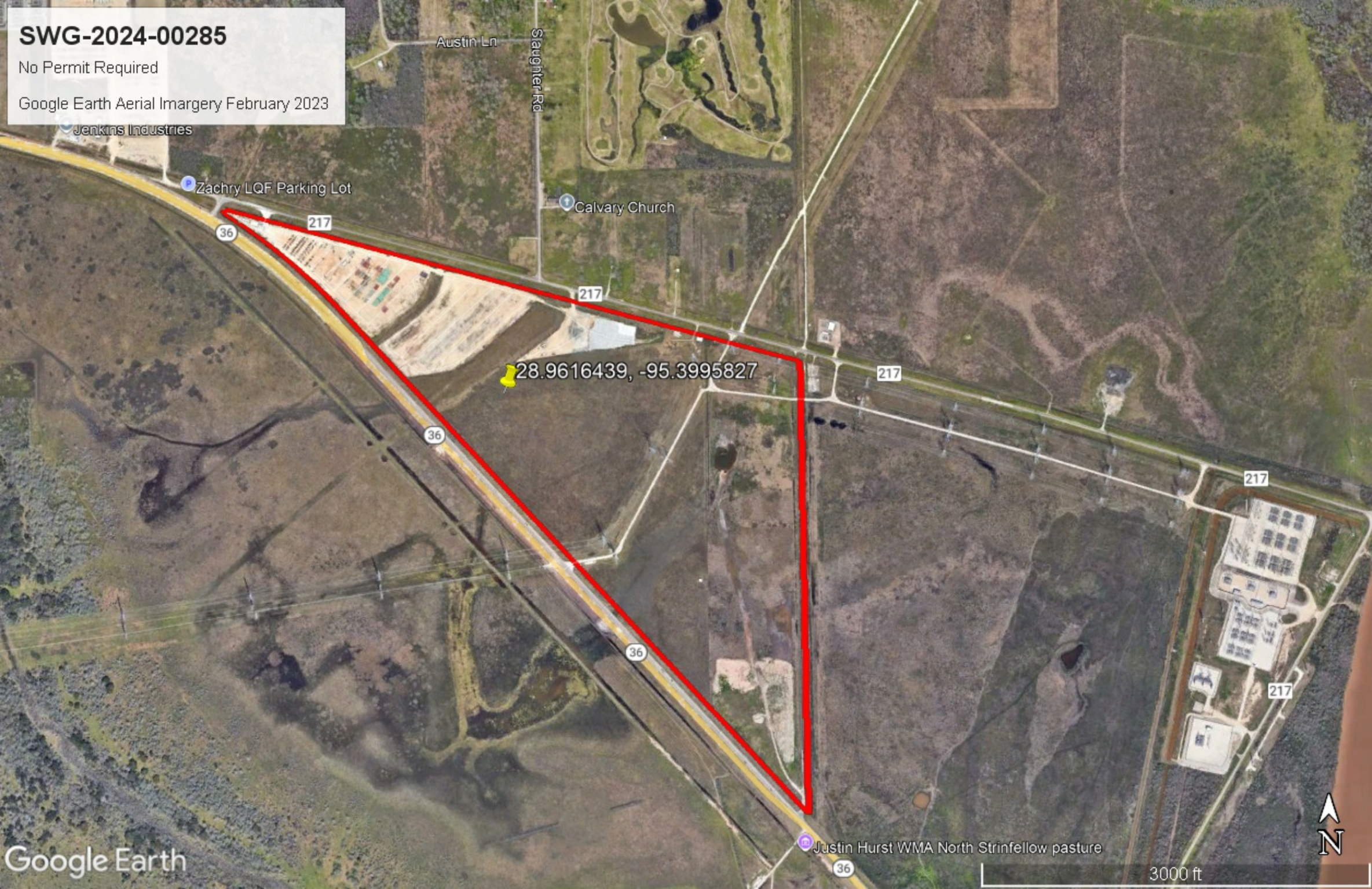
Kristin McKnight

Kristin McKnight
Regulatory Specialist
Compliance Branch


SWG-2024-00285
No Permit Required
Google Earth Aerial Imargery January 1995
Freeport Studios
Brazos River
36
36
28.9616439, -95.3995827
Google Earth
Image U.S. Geological Survey
3000 ft
N


SWG-2024-00285
No Permit Required
Google Earth Aerial Imagery February 2004
Zachry LQF Parking Lot
Calvary Church
Austin Ln
Slaughter Rd
217
36
28.9616439, -95.3995827
Justin Hurst WMA North Strinfellow pasture
Google Earth
Image U.S. Geological Survey
N
2000 ft


SWG-2024-00285
No Permit Required
Google Earth Aerial Imargery April 2022
Austin Ln
Slaughter Rd
Jenkins Industries
Zachry LQF Parking Lot
Calvary Church
217
36
28.9616439, -95.3995827
Justin Hurst WMA North Strinfellow pasture
Google Earth
N
3000 ft


SWG-2024-00285
No Permit Required
Google Earth Aerial Imagery February 2023
Austin Ln
Staughter Rd
Jenkins Industries
Zachry LQF Parking Lot
Calvary Church
217
36
28.9616439, -95.3995827
Justin Hurst WMA North Strinfellow pasture
Google Earth
3000 ft
N

**DEPARTMENT OF THE ARMY**
**U. S. ARMY CORPS OF ENGINEERS, GALVESTON DISTRICT**
**2000 FORT POINT ROAD**
**GALVESTON, TEXAS 77551**

April 14, 2025

Compliance Branch

SUBJECT: **SWG-2024-00285**; Monarch Energy, No Permit Required, Approximate 173.4 Acre Tract, Located South of Country Road 217 and North of Highway 36 in Freeport, Brazoria County, Texas

Joan Heredia
Monarch Energy
101 Cooper Street Suite 400
Santa Cruz, California 95060

Dear Ms. Heredia:

This letter is in reference to the November 20, 2024, request for a No Permit Required, for an approximate 173.4-acre tract received from Westwood Professional Services, on behalf of Monarch Energy. The project is located south of County Road 217 (Latitude 28.9616439 North Longitude 95.3995827 West) in Freeport, Brazoria County, Texas (map enclosed).

The Corps of Engineers has the regulatory responsibility over two primary federal laws, Section 10 of the Rivers and Harbors Act (Section 10) which regulates work and/or structures in/or affecting navigable waters of the United States (U.S.) and Section 404 of the Clean Water Act (Section 404) which regulates the discharge of dredged and/or fill material into waters of the U.S., including adjacent wetlands. If activities involved trigger either of these aforementioned federal regulations, a Department of the Army (DA) permit is required prior those activities occurring. Based on our desk review we have determined the approximate 173.4-acre tract contains six wetlands (WB-01, WB-02, WB-04, WB-05, WB-06, and PO-02), one pond (PO-01), and one ephemeral feature (WC-01). The wetlands do not abut a water of the United States. The pond is a man-made stock pond that was dug wholly from uplands. The ephemeral stream is not a relatively permanent water and is not a water of the United States. Therefore, the discharge of dredged or fill material or any work and/or the placement of structures within the review area is not subject to Section 404 or Section 10 and does not require a Department of the Army permit.

Areas of Federal Interests (federal projects, and/or work areas) may be located within this proposed project area. Any activities in these federal interest areas would also be subject to federal regulations under the authority of Section 14 of the Rivers and Harbors Act (aka Section 408). Section 408 makes it unlawful for anyone to alter in any manner, in whole or in part, any work (ship channel, flood control channels, seawalls, bulkhead, jetty,

piers, etc.) built by the United States unless it is authorized by the Corps of Engineers (i.e., Navigation and Operations Division).

This jurisdictional determination included herein has been conducted to identify the presence of aquatic resources and/or the jurisdictional status of aquatic resources for the purpose of the Clean Water Act for the particular site identified in this request. This determination may not be valid for the Wetland Conservation Provisions of the Food Security Act of 1985 as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should discuss the applicability of a certified wetland determination with the local USDA service center, prior to starting work.

This letter contains an approved jurisdictional determination for your subject site. The AJD is valid for five years from the date of this letter unless new information warrants a revision prior to the expiration date. For the purposes of this AJD, we have relied on the pre-2015 regime post-Sackett and the 12 March 2025 Memorandum to the Field Between the U.S. Department of Army, U.S. Army Corps of Engineers, and the U.S. Environmental Protection Agency Concerning the Proper Implementation of “Continuous Surface Connection” Under the Definition of “Waters of the United States” Under the Clean Water Act to determine jurisdiction. If you object to the AJD portion determination, you may request an administrative appeal under USACE regulations at 33 CFR Part 331. You will find an enclosed Notification of Appeals Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this determination, you must submit a completed RFA form to the Southwest Division Office at the following address:

Mr. Jamie Hyslop
Administrative Appeals Review Officer
Southwest Division (CESWD-PR-O)
U.S. Army Corps of Engineer Division, Southwestern
1100 Commerce Street, Room 831
Dallas, Texas 75242-1713
Telephone: 469-216-8324

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete; that it meets the criteria for appeal under 33 CFR Part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP; noting the letter date is considered day 1. It is not necessary to submit an RFA form to the Division office if you do not object to the determination in this letter.

This approved jurisdictional determination is valid for 5 years from the date of this letter unless new information warrants a revision prior to the expiration date. If you have any

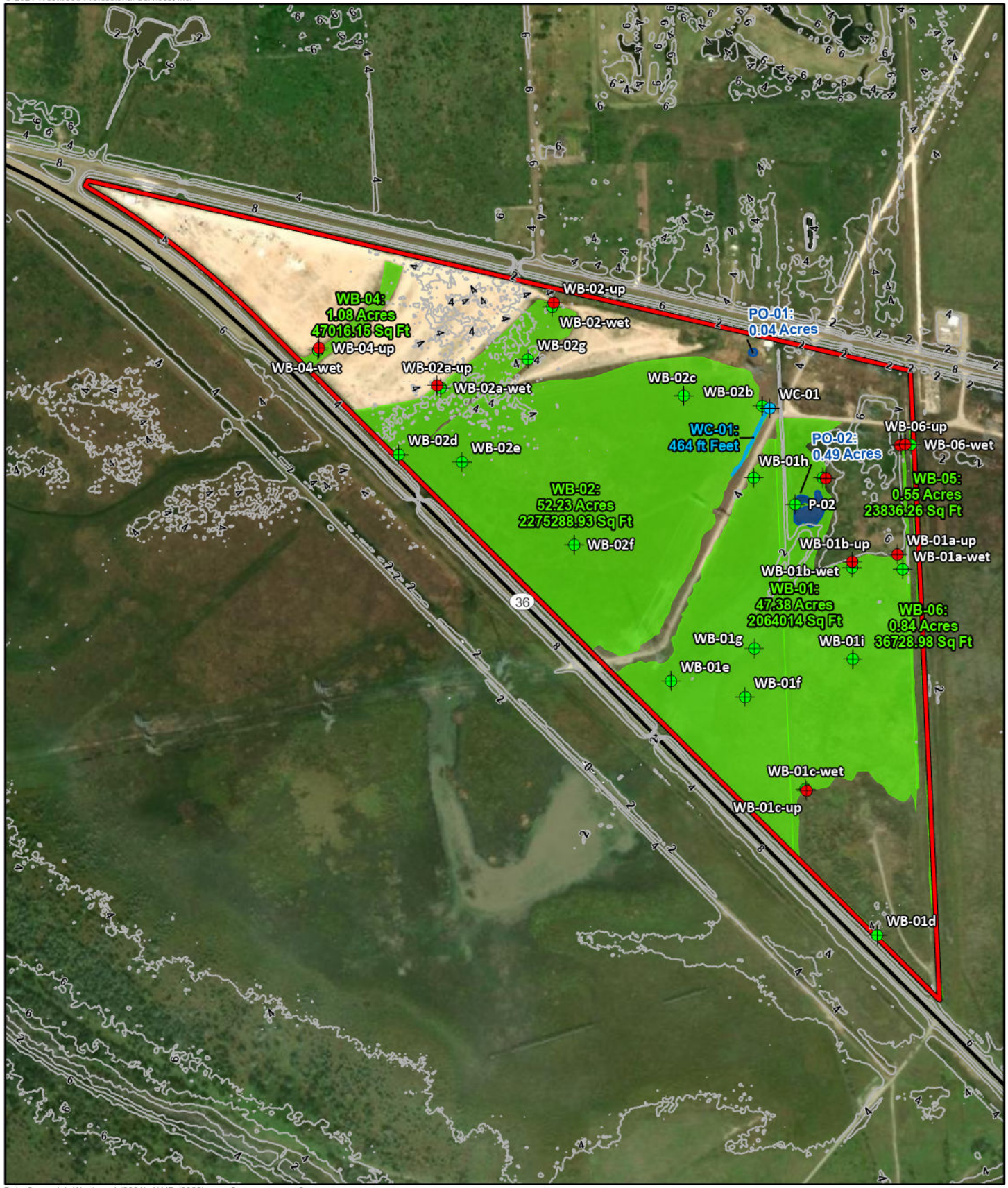
questions concerning this jurisdictional determination, please reference file number **SWG-2024-00285** and contact Ms. Kristin McKnight at the letterhead address, via email at Kristin.m.nelson@usace.army.mil, or by telephone at 409-766-3826. To assist us in improving our service to you, please complete the survey found at https://regulatory.ops.usace.army.mil/customer-service-survey/ and/or if you would prefer a hard copy of the survey form, please let us know, and one will be mailed to you.

Sincerely,

Kara Vick

Kara Vick
Team Lead, Compliance Branch

Enclosures
CF: Kevin Alexander <kevin.alexander@westwoodps.com>




Data Source(s): Westwood (2024); NAIP (2022); U.S. Census Bureau (2021); USGS 3DEP (Accessed 2024).

Feet
0 700

Westwood

Toll Free (888) 937-5150 westwoodps.com
Westwood Professional Services, Inc.

## Legend

- Project Area
- Field Delineated Wetland
- Field Delineated Watercourse
- Field Delineated Pond
- Major Road
- 10ft Contour
- 2ft Contour
- Wetland Sample Point
- Upland Sample Point
- Watercourse Sample Point

# Monarch Fairlane Project

Brazoria County, Texas

N

## Field Delineated Features

EXHIBIT 4

**DEPARTMENT OF THE ARMY**
**U.S. ARMY CORPS OF ENGINEERS, GALVESTON DISTRICT**
**2000 FORT POINT ROAD**
**GALVESTON TEXAS 77550**

CESWG-RD-C 14 April 2025

MEMORANDUM FOR RECORD

SUBJECT: US Army Corps of Engineers (Corps) Pre-2015 Regulatory Regime Approved Jurisdictional Determination in Light of *Sackett v. EPA*, 143 S. Ct. 1322 (2023) ,[1] SWG-2024-00285[2]

BACKGROUND. An Approved Jurisdictional Determination (AJD) is a Corps document stating the presence or absence of waters of the United States on a parcel or a written statement and map identifying the limits of waters of the United States on a parcel. AJDs are clearly designated appealable actions and will include a basis of JD with the document.[3] AJDs are case-specific and are typically made in response to a request. AJDs are valid for a period of five years unless new information warrants revision of the determination before the expiration date or a District Engineer has identified, after public notice and comment, that specific geographic areas with rapidly changing environmental conditions merit re-verification on a more frequent basis.[4] For the purposes of this AJD, we have relied on section 10 of the Rivers and Harbors Act of 1899 (RHA),[5] the Clean Water Act (CWA) implementing regulations published by the Department of the Army in 1986 and amended in 1993 (references 2.a. and 2.b. respectively), the 2008 *Rapanos-Carabell* guidance (reference 2.c.), and other applicable guidance, relevant case law and longstanding practice, (collectively the pre-2015 regulatory regime), and the *Sackett* decision (reference 2.d.) in evaluating jurisdiction.

This Memorandum for Record (MFR) constitutes the basis of jurisdiction for a Corps AJD as defined in 33 CFR §331.2. The features addressed in this AJD were evaluated consistent with the definition of "waters of the United States" found in the pre-2015 regulatory regime and consistent with the Supreme Court's decision in *Sackett*. This AJD did not rely on the 2023 "Revised Definition of 'Waters of the United States,'" as

[1] While the Supreme Court's decision in *Sackett* had no effect on some categories of waters covered under the CWA, and no effect on any waters covered under RHA, all categories are included in this Memorandum for Record for efficiency.
[2] When documenting aquatic resources within the review area that are jurisdictional under the Clean Water Act (CWA), use an additional MFR and group the aquatic resources on each MFR based on the TNW, interstate water, or territorial seas that they are connected to. Be sure to provide an identifier to indicate when there are multiple MFRs associated with a single AJD request (i.e., number them 1, 2, 3, etc.).
[3] 33 CFR 331.2.
[4] Regulatory Guidance Letter 05-02.
[5] USACE has authority under both Section 9 and Section 10 of the Rivers and Harbors Act of 1899 but for convenience, in this MFR, jurisdiction under RHA will be referred to as Section 10.

amended on September 8, 2023 (Amended 2023 Rule) because, as of the date of this decision, the Amended 2023 Rule is not applicable in Texas due to litigation.

1. SUMMARY OF CONCLUSIONS.

    a. Provide a list of each individual feature within the review area and the jurisdictional status of each one (i.e., identify whether each feature is/is not a water of the United States and/or a navigable water of the United States).

        i. Wetland, WB-01, 47.38 acres, non-jurisdictional, Latitude 28.958109° Longitude -95.394349°
        ii. Wetland, WB-02, 51.4 acres, non-jurisdictional, Latitude 28.960590° Longitude -95.398811°
        iii. Wetland, WB-4, 1.08 acres, non-jurisdictional, Latitude 28.963444° Longitude -95.401743°
        iv. Wetland, WB-05, 0.55 acres, non-jurisdictional, Latitude 28.959721° Longitude -95.392483°
        v. Wetland, WB-06, 0.84 acres, non-jurisdictional, Latitude 28.959722° Longitude - 95.392335°
        vi. Pond, PO-01, 0.04 acres, non-jurisdictional, Latitude 28.962684° Longitude - 95.395035
        vii. Pond, PO-02, 0.49 acres, non-jurisdictional, Latitude 28.960209° Longitude - 95.394180°
        viii. Ephemeral Stream, WC-0-1, 0.12 acres, non-jurisdictional, Latitude 28.961776° Longitude - 95.394731°

2. REFERENCES.

    a. Final Rule for Regulatory Programs of the Corps of Engineers, 51 FR 41206 (November 13, 1986).

    b. Clean Water Act Regulatory Programs, 58 FR 45008 (August 25, 1993).

    c. U.S. EPA & U.S. Army Corps of Engineers, Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. United States & Carabell v. United States* (December 2, 2008)

    d. *Sackett v. EPA*, 598 U.S. 651, 143 S. Ct. 1322 (2023)

    e. 12 March 2025 Memorandum to the Field Between the U.S. Department of Army, U.S. Army Corps of Engineers, and the U.S. Environmental Protection Agency

Concerning the Proper Implementation of "Continuous Surface Connection" Under the Definition of "Waters of the United States" Under the Clean Water Act.

3. REVIEW AREA. An approximate 173.4-acre tract located south of County Road 217 (Latitude 28.9616439 North Longitude 95.3995827 West) in Freeport, Brazoria County, Texas

4. NEAREST TRADITIONAL NAVIGABLE WATER (TNW), INTERSTATE WATER, OR THE TERRITORIAL SEAS TO WHICH THE AQUATIC RESOURCE IS CONNECTED. N/A

5. FLOWPATH FROM THE SUBJECT AQUATIC RESOURCES TO A TNW, INTERSTATE WATER, OR THE TERRITORIAL SEAS. N/A

6. SECTION 10 JURISDICTIONAL WATERS[6]: Describe aquatic resources or other features within the review area determined to be jurisdictional in accordance with Section 10 of the Rivers and Harbors Act of 1899. Include the size of each aquatic resource or other feature within the review area and how it was determined to be jurisdictional in accordance with Section 10.[7] N/A

7. SECTION 404 JURISDICTIONAL WATERS: Describe the aquatic resources within the review area that were found to meet the definition of waters of the United States in accordance with the pre-2015 regulatory regime and consistent with the Supreme Court's decision in *Sackett*. List each aquatic resource separately, by name, consistent with the naming convention used in section 1, above. Include a rationale for each aquatic resource, supporting that the aquatic resource meets the relevant category of "waters of the United States" in the pre-2015 regulatory regime. The rationale should also include a written description of, or reference to a map in the administrative record that shows, the lateral limits of jurisdiction for each aquatic resource, including how that limit was determined, and incorporate relevant references used. Include the size of each aquatic resource in acres or linear feet and attach and reference related figures as needed.

   a. TNWs (a)(1): N/A

[6] 33 CFR 329.9(a) A waterbody which was navigable in its natural or improved state, or which was susceptible of reasonable improvement (as discussed in § 329.8(b) of this part) retains its character as "navigable in law" even though it is not presently used for commerce, or is presently incapable of such use because of changed conditions or the presence of obstructions.

[7] This MFR is not to be used to make a report of findings to support a determination that the water is a navigable water of the United States. The district must follow the procedures outlined in 33 CFR part 329.14 to make a determination that water is a navigable water of the United States subject to Section 10 of the RHA.

b. Interstate Waters (a)(2): N/A

c. Other Waters (a)(3): N/A

d. Impoundments (a)(4): N/A

e. Tributaries (a)(5): N/A

f. The territorial seas (a)(6): N/A

g. Adjacent wetlands (a)(7): N/A

8. NON-JURISDICTIONAL AQUATIC RESOURCES AND FEATURES

a. Describe aquatic resources and other features within the review area identified as "generally non-jurisdictional" in the preamble to the 1986 regulations (referred to as "preamble waters").[8] Include size of the aquatic resource or feature within the review area and describe how it was determined to be non-jurisdictional under the CWA as a preamble water.

Pond PO-01 (0.04 acre)
Pond OW-1 (0.18 acre) does not appear in the USGS Topographic map. PO-01 is a stock pond that was dug from uplands sometime between 1995 and 2004. 1986 preamble to 33 CFR 320-330 regulations states that for clarification it should be noted that we generally do not consider the following waters to be "waters of the United States…(C) artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, setline basins, or rice growing. Therefore, Pond OW-1 is not a water of the United States and is not subject to Section 404 of the Clean Water Act.

b. Describe aquatic resources and features within the review area identified as "generally not jurisdictional" in the *Rapanos* guidance. Include size of the aquatic resource or feature within the review area and describe how it was determined to be non-jurisdictional under the CWA based on the criteria listed in the guidance.

Ephemeral stream (WC-01), 0.12 acres, is located within the review area. Reviewing the Google Earth imagery there is a small non RPW observed along the eastern edge of the road at the center of the site. The boundary of the stream

[8] 51 FR 41217, November 13, 1986.

does not share a surface connection with any other aquatic resource within the review area. The non RPW is visible one of the four years used for review and does not appear in the topo. This desktop review supports the Corps determination that ephemeral stream WC-01 is non-adjacent/non-jurisdictional.

c. Describe aquatic resources and features identified within the review area as waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA. Include the size of the waste treatment system within the review area and describe how it was determined to be a waste treatment system. N/A

d. Describe aquatic resources and features within the review area determined to be prior converted cropland in accordance with the 1993 regulations (reference 2.b.). Include the size of the aquatic resource or feature within the review area and describe how it was determined to be prior converted cropland. N/A

e. Describe aquatic resources (i.e. lakes and ponds) within the review area, which do not have a nexus to interstate or foreign commerce, and prior to the January 2001 Supreme Court decision in "*SWANCC*," would have been jurisdictional based solely on the "Migratory Bird Rule." Include the size of the aquatic resource or feature, and how it was determined to be an "isolated water" in accordance with *SWANCC*. N/A

f. Describe aquatic resources and features within the review area that were determined to be non-jurisdictional because they do not meet one or more categories of waters of the United States under the pre-2015 regulatory regime consistent with the Supreme Court's decision in *Sackett* (e.g., tributaries that are non-relatively permanent waters; non-tidal wetlands that do not have a continuous surface connection to a jurisdictional water).

**Wetlands, WB-01, WB-02, WB-04, WB-05, WB-06, PO-02 (101.74 acres total)** Based on data sources listed in #9 and our 11 April 2025 desk review, we have determined these wetlands reside in small depressional areas within the review area. Based on our review, the wetlands do not meet the continuous surface connection standard for adjacent wetlands as they do not abut a relatively permanent water, a jurisdictional impoundment, or a traditional navigable water. Therefore, in accordance with the pre-2015 regime post-Sackett and the 12 March 2025 Memorandum to the Field Between the U.S. Department of Army, U.S. Army Corps of Engineers, and the U.S. Environmental Protection Agency Concerning the Proper Implementation of "Continuous Surface Connection" Under the Definition of "Waters of the United States" Under the Clean Water Act,

WB-01, WB-02. WB-04, WB-05, WB-06, and PO-02 do not meet the definition of adjacent as defined in the pre-2015 regime post Sackett guidance and are not a water of the United States subject to Section 404 of the Clean Water Act. Any discharge of dredged and/or fill material into WB-01, WB-02. WB-04, WB-05, WB-06, and PO-02 does not require a Department of the Army permit.

9. DATA SOURCES. List sources of data/information used in making determination. Include titles and dates of sources used and ensure that information referenced is available in the administrative record.

   a. Desk Review: 11 April 2025

   b. Maps, plans, plots, and data submitted by or on behalf of the applicant consultant: Wetland Delineation Report received 20 November 2024

   c. Aerial Photos: Google Earth Aerial Imagery

   d. United States Department of Interior (DOI), Fish and Wildlife Service (FWS), National Wetland Inventory (NWI); FWS NWI ESRI Layer.

   e. United State Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS), Soil Survey Geographic Database (SSURGO) Esri Layer

   f. United States Geological Survey Topographic Maps (West Columbia, Texas Quadrangles)

10. OTHER SUPPORTING INFORMATION. N/A

11. NOTE: The structure and format of this MFR were developed in coordination with the EPA and Department of the Army. The MFR's structure and format may be subject to future modification or may be rescinded as needed to implement additional guidance from the agencies; however, the approved jurisdictional determination described herein is a final agency action.

## NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

| Applicant: Monarch Energy | File Number: SWG-2024-00285 | Date: 11/12/2024 |
|---|---|---|
| Attached is: | | See Section below |
| | INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission) | A |
| | PROFFERED PERMIT (Standard Permit or Letter of permission) | B |
| | PERMIT DENIAL WITHOUT PREJUDICE | C |
| | PERMIT DENIAL WITH PREJUDICE | D |
| X | APPROVED JURISDICTIONAL DETERMINATION | E |
| | PRELIMINARY JURISDICTIONAL DETERMINATION | F |

**SECTION I**

The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/appeals/ or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C. PERMIT DENIAL WITHOUT PREJUDICE: Not appealable
You received a permit denial without prejudice because a required Federal, state, and/or local authorization and/or certification has been denied for activities which also require a Department of the Army permit before final action has been taken on the Army permit application. The permit denial without prejudice is not appealable. There is no prejudice to the right of the applicant to reinstate processing of the Army permit application if subsequent approval is received from the appropriate Federal, state, and/or local agency on a previously denied authorization and/or certification.

D: PERMIT DENIAL WITH PREJUDICE: You may appeal the permit denial
You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information for reconsideration

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety and waive all rights to appeal the approved JD.

- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

- RECONSIDERATION: You may request that the district engineer reconsider the approved JD by submitting new information or data to the district engineer within 60 days of the date of this notice. The district will determine whether the information submitted qualifies as new information or data that justifies reconsideration of the approved JD. A reconsideration request does not initiate the appeal process. You may submit a request for appeal to the division engineer to preserve your appeal rights while the district is determining whether the submitted information qualifies for a reconsideration.

F: PRELIMINARY JURISDICTIONAL DETERMINATION: Not appealable
You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also, you may provide new information for further consideration by the Corps to reevaluate the JD.

**POINT OF CONTACT FOR QUESTIONS OR INFORMATION:**

If you have questions regarding this decision you may contact:

Kristin McKnight, Regulatory Specialist
Regulatory Division, Compliance Branch
U.S. Army Corps of Engineers, Galveston District
P.O. Box 1229
Galveston, Texas 77553-1229
Telephone: 409-766-3826; Fax: 409-766-3931
Email: Kristin.m.nelson@usace.army.mil

If you have questions regarding the appeal process, or to submit your request for appeal, you may contact:

Mr. Jamie Hyslop
Administrative Appeals Review Officer
Southwestern Division (CESWD-PD-O)
U.S. Army Corps of Engineers
1100 Commerce Street, Suite 831
Dallas, Texas 75242-1317
Phone: 469-216-8324
Email: Jamie.r.hyslop@usace.army.mil

**SECTION II – REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT**

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. Use additional pages as necessary. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation and will have the opportunity to participate in all site investigations.

| | |
|---|---|
| _____<br>Signature of appellant or agent. | Date: |
| Email address of appellant and/or agent: | Telephone number: |