

May 10, 2022

*Via electronic mail*

Ms. Brooke Heriges  
Tennessee Department of Environment & Conservation  
Division of Water Resources  
711 R.S. Gass Blvd.  
Nashville, Tennessee 37243

Re: Hydrologic Determination and Pond Assessment  
Adams Circle Site (Tax Map 42 Parcel 34.00)  
Fairview, Williamson County, Tennessee

Dear Ms. Heriges:

Attached, please find materials supporting a Hydrologic Determination (HD) conducted by BDY Environmental LLC (BDY) on one watercourse reach located within the subject site. We are including the accompanying HD Field Data Sheet, figures, and representative photographs, which are provided in support of our determination that the assessed watercourse is a wet weather conveyance, as defined by Tennessee statute and associated administrative regulations<sup>1,2</sup>. BDY has also included information pertaining to a constructed pond located in the northern portion of the site.

The purpose of this report is to obtain TDEC's concurrence with this hydrologic determination to inform site planning for a future residential housing development that would be sited within this approximately 7.43-acre property.

### **Project Site**

The site is located along the north side of Adams Drive, approximately 200 feet north of Fairview Boulevard/Hwy 100 in Fairview, Williamson County, Tennessee (Figure 1). Topographically, the highest elevations are in the northern portion of the site and the terrain gently slopes to the southeast and south. Land cover consists primarily of open fields with a few scattered trees and a larger forested area along the northern property boundary.

The southwestern portion of the site lies within the Upper South Harpeth River Watershed (HUC: 051302040301) and the northeastern portion of the site lies within the Brush Creek Watershed (HUC 12: 051302040604). No watercourses or waterbodies are depicted within the site boundaries on the Fairview USGS 7.5-minute Topographic Quadrangle. Based on a review of the Tennessee Department of Environment and Conservation's (TDEC's) online mapping application (<http://tnmap.tn.gov/wpc/>), the receiving stream for the site, Hunting Camp Creek, is listed as supporting of its designated uses.

<sup>1</sup> Tennessee Code Annotated §69-3-103 (38) & (43) (A-D)

<sup>2</sup> TDEC Rules of the Tennessee Water Quality Control Board 1200-04-03-.04 (23, 28)

The National Resources Conservation Service (NRCS) Web Soil Survey indicates that most of the site is underlain by the Mountview silt loam, while a small linear area in the southern portion of the site occurs on the Linside silt loam, which is listed as predominately non-hydric (Appendix 1). A review of the US Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) database did not identify any wetlands or waterbodies occurring within the site (Appendix 2).

### ***Hydrologic Determination***

Glenn Rohrbach (QHP-IT) conducted the formal hydrological determination on May 4, 2022. This watercourse was previously observed by Chris Fleming (#1120-TN14) on January 18, 2022; however, a hydrologic determination could not be conducted during that visit due recent snowfall and wet conditions. Based on climatological analyses using the U.S. Army Corps of Engineers (USACE) Antecedent Precipitation Tool, the hydrologic determination was conducted under normal climatic conditions. Prior to the site visit, 0.01-inches of rainfall were reported within the previous 7 days (Appendix 3).

The assessed watercourse is mapped on Figure 2. A summary of the assessed watercourse is included in Table 1. The Hydrologic Determination Field Data Sheet for the assessed watercourse is included in Appendix 4. Representative photographs of the assessed watercourse are included in Appendix 5 and the locations of the photographs are shown on Figure 2.

Table 1. Summary of the assessed watercourse with hydrologic determination findings, coordinates of beginning and end points, and watershed acreage.

| Name | Determination          | Begin                | End                   | Watershed Acres |
|------|------------------------|----------------------|-----------------------|-----------------|
|      |                        | Latitude, Longitude  | Latitude, Longitude   |                 |
| D-1  | Wet Weather Conveyance | 35.98506, -87.120103 | 35.985004, -87.119671 | 10              |

### ***Ponds***

A pond (Pond-A) located in the northern portion of the site, upslope of D-1, is shown on Figure 2 and summarized in Table 2. Representative photographs of the pond have been included in Appendix 5 and the locations of the photographs are shown on Figure 2. This pond is formed by an earthen dam constructed across a topographic swale. At the time of the site visit, the feature was dry, and no evidence of a groundwater connection was noted. The soils did not exhibit hydric characteristics and the flora of the immediate area was not dominated by hydrophytic species.

Table 2. Summary of pond, including centroid coordinates and acreage.

| Name   | Determination  | Latitude, Longitude   | Acres |
|--------|----------------|-----------------------|-------|
| Pond-A | Dry/Open Water | 35.98528, - 87.119934 | 0.047 |

Based on the observed conditions, this feature appears to be a seasonal non-jurisdictional farm pond that has been constructed in uplands.

**Request for Concurrence**

We attest that all information submitted herein and in the accompanying attachments is true, accurate, and complete. We appreciate your review of this information and request your concurrence of our hydrologic determination. Please contact us at (615) 460-9797 if we may provide additional information or address your questions regarding our findings.

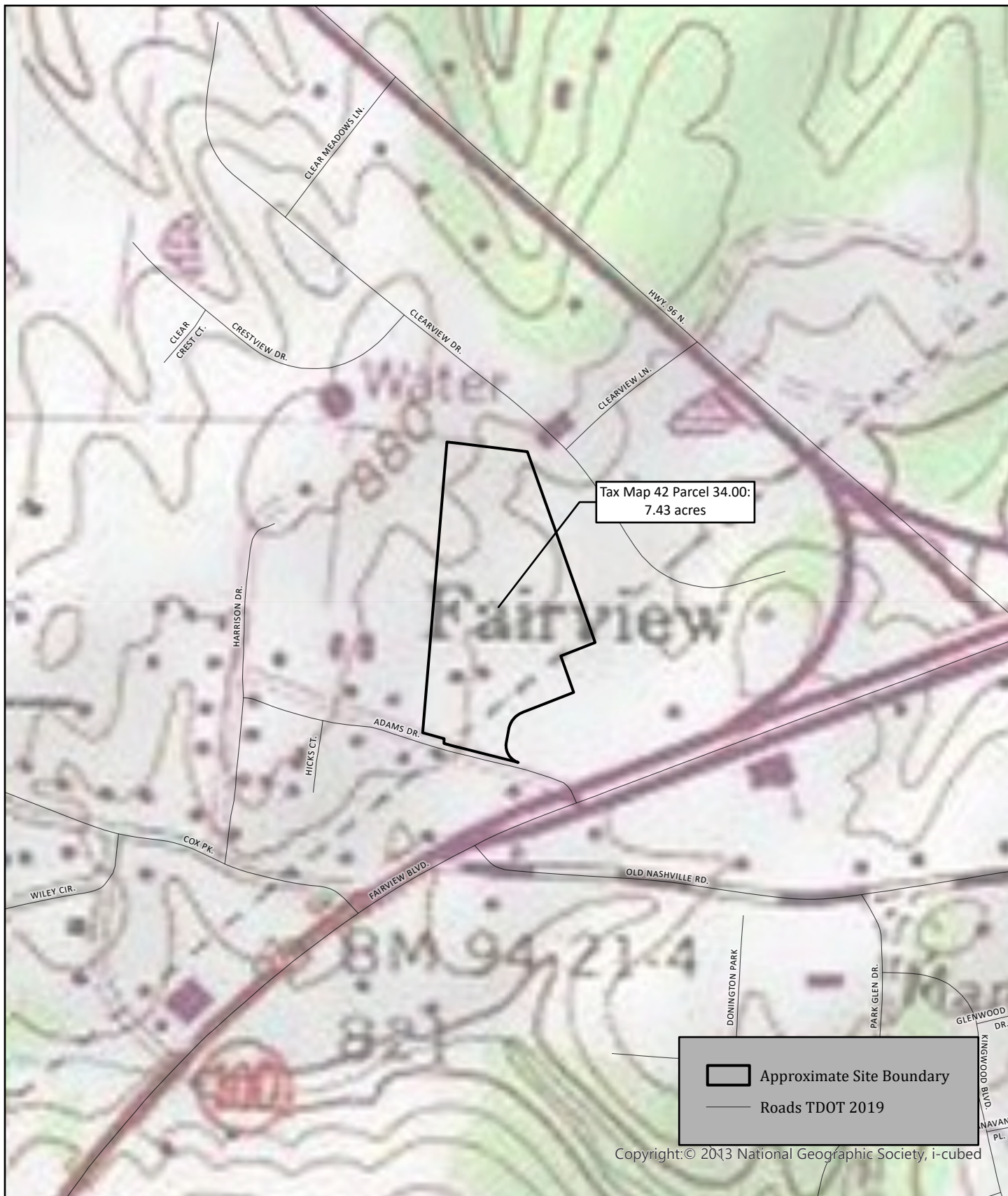
Very truly yours,  
BDY ENVIRONMENTAL LLC



Chris A. Fleming, MS, QHP (#1120-TN14)  
Senior Scientist



Glenn M. Rohrbach (QHP-IT)  
Staff Scientist



**Figure 1. Site location.**  
**Adams Circle Site**  
**Fairview, Williamson County, Tennessee**



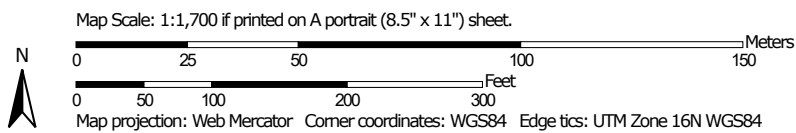
**Figure 2. Summary of aquatic resources and locations of photographs.**  
**Adams Circle Site**  
**Fairview, Williamson County, Tennessee**

## APPENDIX 1: Web Soil Survey

# Hydric Rating by Map Unit—Williamson County, Tennessee (Adams Circle, Fairview TN)



Soil Map may not be valid at this scale.



**Natural Resources  
Conservation Service**

Web Soil Survey  
National Cooperative Soil Survey

11/29/2021  
Page 1 of 5

Hydric Rating by Map Unit—Williamson County, Tennessee  
(Adams Circle, Fairview TN)

## MAP LEGEND

### Area of Interest (AOI)

 Area of Interest (AOI)

### Soils

#### Soil Rating Polygons

 Hydric (100%)  
 Hydric (66 to 99%)  
 Hydric (33 to 65%)  
 Hydric (1 to 32%)  
 Not Hydric (0%)  
 Not rated or not available

#### Soil Rating Lines

 Hydric (100%)  
 Hydric (66 to 99%)  
 Hydric (33 to 65%)  
 Hydric (1 to 32%)  
 Not Hydric (0%)  
 Not rated or not available

#### Soil Rating Points

 Hydric (100%)  
 Hydric (66 to 99%)  
 Hydric (33 to 65%)  
 Hydric (1 to 32%)  
 Not Hydric (0%)  
 Not rated or not available

### Water Features

 Streams and Canals

### Transportation

 Rails  
 Interstate Highways  
 US Routes  
 Major Roads  
 Local Roads

### Background

 Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service  
 Web Soil Survey URL:  
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Williamson County, Tennessee  
 Survey Area Data: Version 16, Sep 10, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 21, 2019—Apr 10, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

## Hydric Rating by Map Unit

| Map unit symbol                    | Map unit name                                                         | Rating | Acres in AOI | Percent of AOI |
|------------------------------------|-----------------------------------------------------------------------|--------|--------------|----------------|
| HrB                                | Humphreys silt loam, 2 to 5 percent slopes                            | 0      | 0.2          | 3.1%           |
| Ln                                 | Lindside silt loam                                                    | 8      | 0.9          | 12.2%          |
| MvB2                               | Mountview silt loam, shallow, 2 to 5 percent slopes, eroded           | 0      | 1.0          | 14.1%          |
| MvC2                               | Mountview silt loam, shallow, 5 to 12 percent slopes, eroded          | 0      | 3.5          | 47.8%          |
| MvC3                               | Mountview silt loam, shallow, 5 to 12 percent slopes, severely eroded | 0      | 1.7          | 22.8%          |
| <b>Totals for Area of Interest</b> |                                                                       |        | <b>7.4</b>   | <b>100.0%</b>  |

## Description

This rating indicates the percentage of map units that meets the criteria for hydric soils. Map units are composed of one or more map unit components or soil types, each of which is rated as hydric soil or not hydric. Map units that are made up dominantly of hydric soils may have small areas of minor nonhydric components in the higher positions on the landform, and map units that are made up dominantly of nonhydric soils may have small areas of minor hydric components in the lower positions on the landform. Each map unit is rated based on its respective components and the percentage of each component within the map unit.

The thematic map is color coded based on the composition of hydric components. The five color classes are separated as 100 percent hydric components, 66 to 99 percent hydric components, 33 to 65 percent hydric components, 1 to 32 percent hydric components, and less than one percent hydric components.

In Web Soil Survey, the Summary by Map Unit table that is displayed below the map pane contains a column named 'Rating'. In this column the percentage of each map unit that is classified as hydric is displayed.

Hydric soils are defined by the National Technical Committee for Hydric Soils (NTCHS) as soils that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (Federal Register, 1994). Under natural conditions, these soils are either saturated or inundated long enough during the growing season to support the growth and reproduction of hydrophytic vegetation.

The NTCHS definition identifies general soil properties that are associated with wetness. In order to determine whether a specific soil is a hydric soil or nonhydric soil, however, more specific information, such as information about the depth and duration of the water table, is needed. Thus, criteria that identify those estimated soil properties unique to hydric soils have been established (Federal Register, 2002). These criteria are used to identify map unit components that normally are associated with wetlands. The criteria used are selected estimated soil properties that are described in "Soil Taxonomy" (Soil Survey Staff, 1999) and "Keys to Soil Taxonomy" (Soil Survey Staff, 2006) and in the "Soil Survey Manual" (Soil Survey Division Staff, 1993).

If soils are wet enough for a long enough period of time to be considered hydric, they should exhibit certain properties that can be easily observed in the field. These visible properties are indicators of hydric soils. The indicators used to make onsite determinations of hydric soils are specified in "Field Indicators of Hydric Soils in the United States" (Hurt and Vasilas, 2006).

### References:

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18.

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service. U.S. Department of Agriculture Handbook 436.

Soil Survey Staff. 2006. Keys to soil taxonomy. 10th edition. U.S. Department of Agriculture, Natural Resources Conservation Service.

## Rating Options

*Aggregation Method:* Percent Present

*Component Percent Cutoff:* None Specified

*Tie-break Rule:* Lower

APPENDIX 2:  
National Wetlands Inventory



U.S. Fish and Wildlife Service

# National Wetlands Inventory

Adams Circle, Fairview TN



November 29, 2021

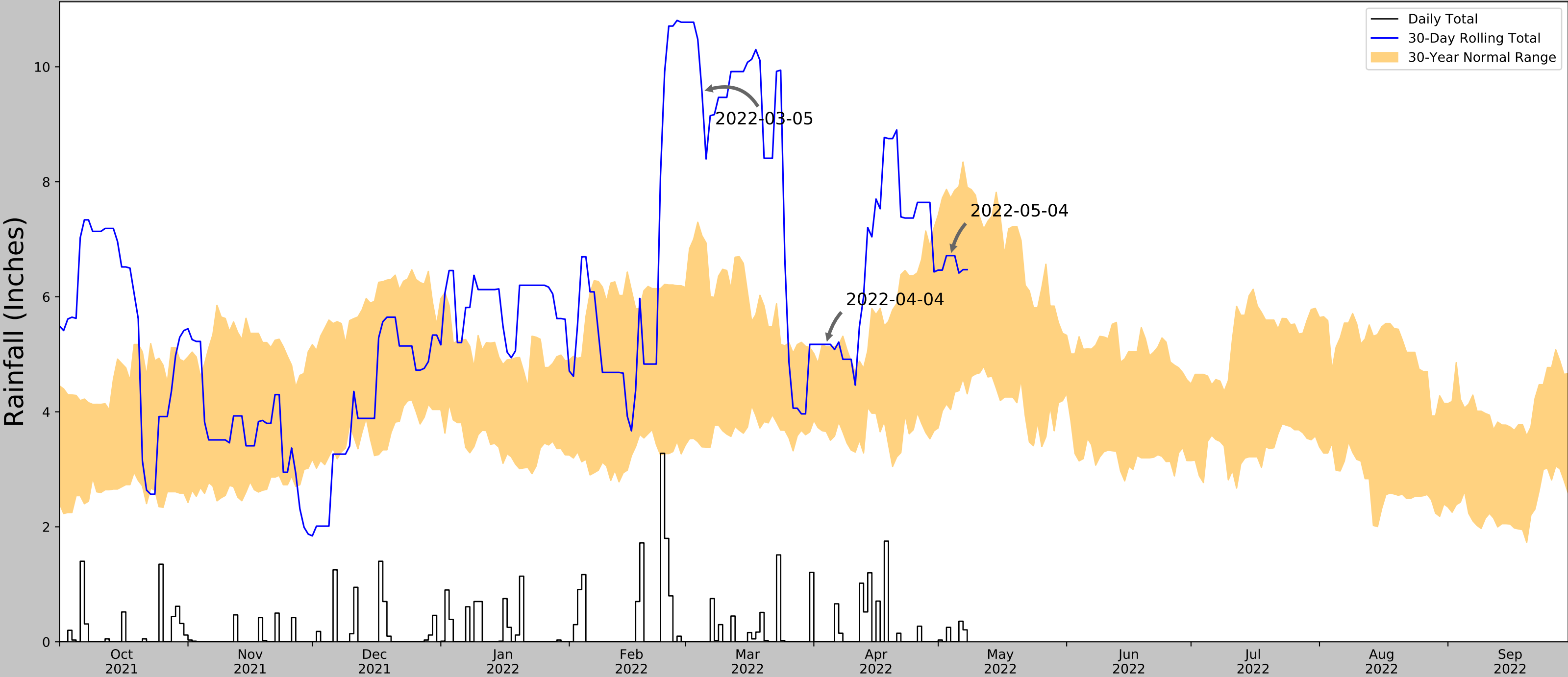
## Wetlands

|                                                                                     |                                |                                                                                     |                                   |                                                                                       |          |
|-------------------------------------------------------------------------------------|--------------------------------|-------------------------------------------------------------------------------------|-----------------------------------|---------------------------------------------------------------------------------------|----------|
|  | Estuarine and Marine Deepwater |  | Freshwater Emergent Wetland       |  | Lake     |
|  | Estuarine and Marine Wetland   |  | Freshwater Forested/Shrub Wetland |  | Other    |
|                                                                                     |                                |  | Freshwater Pond                   |  | Riverine |

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

## APPENDIX 3: Climate Analysis

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



|                                  |                          |
|----------------------------------|--------------------------|
| Coordinates                      | 35.985004, -87.119671    |
| Observation Date                 | 2022-05-04               |
| Elevation (ft)                   | 838.95                   |
| Drought Index (PDSI)             | Severe wetness (2022-04) |
| WebWIMP H <sub>2</sub> O Balance | Wet Season               |

| 30 Days Ending | 30 <sup>th</sup> %ile (in) | 70 <sup>th</sup> %ile (in) | Observed (in) | Wetness Condition | Condition Value | Month Weight | Product                 |
|----------------|----------------------------|----------------------------|---------------|-------------------|-----------------|--------------|-------------------------|
| 2022-05-04     | 4.040158                   | 7.71811                    | 6.716536      | Normal            | 2               | 3            | 6                       |
| 2022-04-04     | 3.656299                   | 5.131496                   | 5.173229      | Wet               | 3               | 2            | 6                       |
| 2022-03-05     | 3.390158                   | 7.063386                   | 9.566929      | Wet               | 3               | 1            | 3                       |
| Result         |                            |                            |               |                   |                 |              | Wetter than Normal - 15 |



Figure and tables made by the  
**Antecedent Precipitation Tool**  
Version 1.0

Written by Jason Deters  
U.S. Army Corps of Engineers

| Weather Station Name   | Coordinates       | Elevation (ft) | Distance (mi) | Elevation Δ | Weighted Δ | Days Normal | Days Antecedent |
|------------------------|-------------------|----------------|---------------|-------------|------------|-------------|-----------------|
| FAIRVIEW BOWIE NAT CTR | 35.9689, -87.1364 | 859.908        | 1.454         | 20.958      | 0.685      | 7245        | 90              |
| FAIRVIEW 1.3 WNW       | 35.9869, -87.145  | 849.081        | 1.333         | 10.827      | 0.614      | 6           | 0               |
| FAIRVIEW 1.4 WNW       | 35.9893, -87.1459 | 863.845        | 1.506         | 3.937       | 0.684      | 15          | 0               |
| FAIRVIEW 2.9 SW        | 35.9487, -87.1588 | 846.129        | 1.875         | 13.779      | 0.87       | 674         | 0               |
| FAIRVIEW 3.8 SW        | 35.9397, -87.1718 | 869.095        | 2.827         | 9.187       | 1.298      | 1           | 0               |
| KINGSTON SPRINGS       | 36.1033, -87.1153 | 517.06         | 9.361         | 342.848     | 7.422      | 3334        | 0               |
| DICKSON                | 36.075, -87.3958  | 779.856        | 16.244        | 80.052      | 8.61       | 78          | 0               |

**Climatological Data for FRANKLIN SEWAGE PLANT, TN - May 2022**

| Date       | Temperature |         |         |           | HDD | CDD | Precipitation |
|------------|-------------|---------|---------|-----------|-----|-----|---------------|
|            | Maximum     | Minimum | Average | Departure |     |     |               |
| 2022-05-01 | 79          | 63      | 71.0    | 7.6       | 0   | 6   | 0.00          |
| 2022-05-02 | 81          | 50      | 65.5    | 1.8       | 0   | 1   | 0.00          |
| 2022-05-03 | 85          | 50      | 67.5    | 3.6       | 0   | 3   | 0.01          |
| 2022-05-04 | 83          | 58      | 70.5    | 6.3       | 0   | 6   | 0.09          |
| 2022-05-05 | 75          | 56      | 65.5    | 1.0       | 0   | 1   | 0.00          |
| 2022-05-06 | 84          | 55      | 69.5    | 4.8       | 0   | 5   | 0.03          |
| 2022-05-07 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-08 | 59          | 47      | 53.0    | -12.2     | 12  | 0   | 0.00          |
| 2022-05-09 | 73          | 47      | 60.0    | -5.5      | 5   | 0   | 0.00          |
| 2022-05-10 | 80          | 55      | 67.5    | 1.7       | 0   | 3   | 0.00          |
| 2022-05-11 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-12 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-13 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-14 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-15 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-16 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-17 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-18 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-19 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-20 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-21 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-22 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-23 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-24 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-25 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-26 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-27 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-28 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-29 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-30 | M           | M       | M       | M         | M   | M   | M             |
| 2022-05-31 | M           | M       | M       | M         | M   | M   | M             |

**Observations for each day cover the 24 hours ending  
at the time given below (Local Standard Time).**

Max Temperature : 5am

Min Temperature : 5am

Precipitation : 5am

## Climatological Data for FRANKLIN SEWAGE PLANT, TN - April 2022

| Date       | Temperature |         |         |           | HDD | CDD | Precipitation |
|------------|-------------|---------|---------|-----------|-----|-----|---------------|
|            | Maximum     | Minimum | Average | Departure |     |     |               |
| 2022-04-01 | 56          | 41      | 48.5    | -6.2      | 16  | 0   | 0.00          |
| 2022-04-02 | 57          | 35      | 46.0    | -9.0      | 19  | 0   | 0.00          |
| 2022-04-03 | 64          | 35      | 49.5    | -5.9      | 15  | 0   | 0.00          |
| 2022-04-04 | 64          | 41      | 52.5    | -3.2      | 12  | 0   | 0.00          |
| 2022-04-05 | 74          | 41      | 57.5    | 1.5       | 7   | 0   | 0.00          |
| 2022-04-06 | 58          | 51      | 54.5    | -1.8      | 10  | 0   | 0.39          |
| 2022-04-07 | 72          | 42      | 57.0    | 0.4       | 8   | 0   | 0.22          |
| 2022-04-08 | 59          | 42      | 50.5    | -6.4      | 14  | 0   | 0.01          |
| 2022-04-09 | M           | M       | M       | M         | M   | M   | 0.04          |
| 2022-04-10 | 59          | 34      | 46.5    | -11.0     | 18  | 0   | 0.00          |
| 2022-04-11 | 76          | 34      | 55.0    | -2.8      | 10  | 0   | 0.00          |
| 2022-04-12 | 64          | 59      | 61.5    | 3.4       | 3   | 0   | 0.32          |
| 2022-04-13 | 78          | 62      | 70.0    | 11.6      | 0   | 5   | 0.81          |
| 2022-04-14 | 83          | 47      | 65.0    | 6.3       | 0   | 0   | 0.97          |
| 2022-04-15 | 68          | 39      | 53.5    | -5.5      | 11  | 0   | 0.00          |
| 2022-04-16 | 71          | 39      | 55.0    | -4.3      | 10  | 0   | 0.67          |
| 2022-04-17 | M           | M       | M       | M         | M   | M   | 0.00          |
| 2022-04-18 | 61          | 45      | 53.0    | -6.8      | 12  | 0   | 0.74          |
| 2022-04-19 | 57          | 39      | 48.0    | -12.1     | 17  | 0   | 0.00          |
| 2022-04-20 | 61          | 38      | 49.5    | -10.9     | 15  | 0   | 0.00          |
| 2022-04-21 | 71          | 39      | 55.0    | -5.7      | 10  | 0   | 0.03          |
| 2022-04-22 | 78          | 55      | 66.5    | 5.5       | 0   | 2   | 0.04          |
| 2022-04-23 | 83          | 55      | 69.0    | 7.8       | 0   | 4   | 0.00          |
| 2022-04-24 | 83          | 55      | 69.0    | 7.5       | 0   | 4   | 0.00          |
| 2022-04-25 | 82          | 63      | 72.5    | 10.7      | 0   | 8   | 0.00          |
| 2022-04-26 | 76          | 50      | 63.0    | 0.9       | 2   | 0   | 0.69          |
| 2022-04-27 | 63          | 39      | 51.0    | -11.3     | 14  | 0   | 0.00          |
| 2022-04-28 | 70          | 39      | 54.5    | -8.1      | 10  | 0   | 0.00          |
| 2022-04-29 | 77          | 44      | 60.5    | -2.4      | 4   | 0   | 0.00          |
| 2022-04-30 | 81          | 57      | 69.0    | 5.9       | 0   | 4   | 0.00          |
| Sum        | 1946        | 1260    | -       | -         | 237 | 27  | 4.93          |
| Average    | 69.5        | 45.0    | 57.3    | -1.7      | -   | -   | -             |
| Normal     | 71.9        | 46.2    | 59.0    | -         | 218 | 40  | 5.16          |

Observations for each day cover the 24 hours ending  
at the time given below (Local Standard Time).  
Observation times may have changed during this period.

Max Temperature : 6am, 5am

Min Temperature : 6am, 5am

Precipitation : 6am, 5am

APPENDIX 4:  
Hydrologic Determination Field Data Sheets

# Hydrologic Determination Field Data Sheet

## Tennessee Division of Water Pollution Control, Version 1.5

|                                                                                                                                                                                                                                                                    |                                                                        |                          |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|--------------------------|
| Named Waterbody: Brush Creek                                                                                                                                                                                                                                       |                                                                        | Date/Time: 5/4/2022 12PM |
| Assessors/Affiliation: GMR (QHP-IT), CAF (QHP #1120-TN14) / BDY Environmental                                                                                                                                                                                      |                                                                        | Project ID :<br>D-1      |
| Site Name/Description: Pulte_Adams Circle                                                                                                                                                                                                                          |                                                                        |                          |
| Site Location: Fairview, TN                                                                                                                                                                                                                                        |                                                                        |                          |
| HUC (12 digit): 051302040604                                                                                                                                                                                                                                       | Lat/Long:<br>Begin: 35.98506, -87.120103<br>End: 35.985004, -87.119671 |                          |
| Previous Rainfall (7-days) : 0.01" (past 48hrs), 0.01" (past 7-days)                                                                                                                                                                                               |                                                                        |                          |
| Precipitation this Season vs. Normal : <input type="checkbox"/> abnormally wet <input checked="" type="checkbox"/> elevated <input type="checkbox"/> average <input type="checkbox"/> low <input type="checkbox"/> abnormally dry <input type="checkbox"/> unknown |                                                                        |                          |
| Source of recent & seasonal precip data : NOAA-Franklin Sewage Plant / USACE Antecedent Precipitation Tool                                                                                                                                                         |                                                                        |                          |
| Watershed Size : ~10 acres                                                                                                                                                                                                                                         | County: Williamson                                                     |                          |
| Soil Type(s) / Geology : Mountview silt loam, shallow, 5 to 12 percent slopes, eroded / Warsaw Source: NRCS/USGS                                                                                                                                                   |                                                                        |                          |
| Surrounding Land Use : Residential / Commercial                                                                                                                                                                                                                    |                                                                        |                          |
| Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) :<br><input type="checkbox"/> Severe <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Slight <input type="checkbox"/> Absent |                                                                        |                          |

### Primary Field Indicators Observed

| Primary Indicators                                                                                                 | NO                                  | YES                             |                              |
|--------------------------------------------------------------------------------------------------------------------|-------------------------------------|---------------------------------|------------------------------|
| 1. Hydrologic feature exists solely due to a process discharge                                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> WWC    |                              |
| 2. Defined bed and bank absent, vegetation composed of upland and FACU species                                     | <input checked="" type="checkbox"/> | <input type="checkbox"/> WWC    |                              |
| 3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions | <input checked="" type="checkbox"/> | <input type="checkbox"/> WWC    | <input type="checkbox"/> N/A |
| 4. Daily flow and precipitation records showing feature only flows in direct response to rainfall                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> WWC    | <input type="checkbox"/> N/A |
| 5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase                       | <input checked="" type="checkbox"/> | <input type="checkbox"/> Stream |                              |
| 6. Presence of fish (except <i>Gambusia</i> )                                                                      | <input checked="" type="checkbox"/> | <input type="checkbox"/> Stream |                              |
| 7. Presence of naturally occurring ground water table connection                                                   | <input checked="" type="checkbox"/> | <input type="checkbox"/> Stream |                              |
| 8. Flowing water in channel and 7 days since last precip >0.1" in local watershed                                  | <input checked="" type="checkbox"/> | <input type="checkbox"/> Stream |                              |
| 9. Evidence watercourse has been used as a supply of drinking water                                                | <input checked="" type="checkbox"/> | <input type="checkbox"/> Stream |                              |

**NOTE: If any Primary Indicators 1-9 = "Yes", then no further investigation is necessary. However, assessors may choose to score secondary indicators as supporting evidence.**

In the absence of a primary indicator, or other definitive evidence, complete the secondary indicator table on page 2 of this sheet, and provide score below.

Guidance for the interpretation and scoring of both the primary & secondary indicators is provided in *TDEC-WPC Guidance For Making Hydrologic Determinations, Version 1.5*

|                                                                  |
|------------------------------------------------------------------|
| <b>Overall Hydrologic Determination</b> = Wet Weather Conveyance |
| <b>Secondary Indicator Score (if applicable)</b> = 11.25 OR N/A  |

#### Justification / Notes :

Upper portion of reach appears to have been filled, vegetation is cleared and mowed. Channel forms below this area, travels downslope adjacent to dry pond, then exits the property and loses definition in residential yard.

## Secondary Field Indicator Evaluation

| <b>A. Geomorphology</b> (Subtotal = <b>6.7</b> )               | <b>Absent</b>                                           | <b>Weak</b>                                        | <b>Moderate</b>                                  | <b>Strong</b>                |
|----------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------|--------------------------------------------------|------------------------------|
| 1. Continuous bed and bank                                     | <input type="checkbox"/> 0                              | <input checked="" type="checkbox"/> <del>1</del>   | <input type="checkbox"/> 2                       | <input type="checkbox"/> 3   |
| 2. Sinuous channel                                             | <input type="checkbox"/> 0                              | <input checked="" type="checkbox"/> <del>1</del>   | <input type="checkbox"/> 2                       | <input type="checkbox"/> 3   |
| 3. In-channel structure: riffle-pool sequences                 | <input type="checkbox"/> 0                              | <input checked="" type="checkbox"/> <del>1</del>   | <input type="checkbox"/> 2                       | <input type="checkbox"/> 3   |
| 4. Sorting of soil textures or other substrate                 | <input type="checkbox"/> 0                              | <input checked="" type="checkbox"/> <del>1</del>   | <input type="checkbox"/> 2                       | <input type="checkbox"/> 3   |
| 5. Active/relic floodplain                                     | <input checked="" type="checkbox"/> <del>0</del>        | <input type="checkbox"/> 0.5                       | <input type="checkbox"/> 1                       | <input type="checkbox"/> 1.5 |
| 6. Depositional bars or benches                                | <input checked="" type="checkbox"/> <del>0</del>        | <input type="checkbox"/> 1                         | <input type="checkbox"/> 2                       | <input type="checkbox"/> 3   |
| 7. Braided channel                                             | <input checked="" type="checkbox"/> <del>0</del>        | <input type="checkbox"/> 1                         | <input type="checkbox"/> 2                       | <input type="checkbox"/> 3   |
| 8. Recent alluvial deposits                                    | <input type="checkbox"/> 0                              | <input checked="" type="checkbox"/> <del>0.5</del> | <input type="checkbox"/> 1                       | <input type="checkbox"/> 1.5 |
| 9. Natural levees                                              | <input checked="" type="checkbox"/> <del>0</del>        | <input type="checkbox"/> 1                         | <input type="checkbox"/> 2                       | <input type="checkbox"/> 3   |
| 10. Headcuts                                                   | <input type="checkbox"/> 0                              | <input checked="" type="checkbox"/> <del>1</del>   | <input type="checkbox"/> 2                       | <input type="checkbox"/> 3   |
| 11. Grade controls                                             | <input type="checkbox"/> 0                              | <input checked="" type="checkbox"/> <del>0.5</del> | <input type="checkbox"/> 1                       | <input type="checkbox"/> 1.5 |
| 12. Natural valley or drainageway                              | <input type="checkbox"/> 0                              | <input type="checkbox"/> 0.5                       | <input checked="" type="checkbox"/> <del>1</del> | <input type="checkbox"/> 1.5 |
| 13. At least second order channel on existing USGS or NRCS map | No = 0 <input checked="" type="checkbox"/> <del>1</del> |                                                    | Yes = 3 <input type="checkbox"/>                 |                              |

| <b>B. Hydrology</b> (Subtotal = <b>2</b> )          | <b>Absent</b>                                           | <b>Weak</b>                                        | <b>Moderate</b>                                    | <b>Strong</b>                |
|-----------------------------------------------------|---------------------------------------------------------|----------------------------------------------------|----------------------------------------------------|------------------------------|
| 14. Subsurface flow/discharge into channel          | <input checked="" type="checkbox"/> <del>1.5</del>      | <input type="checkbox"/> 1                         | <input type="checkbox"/> 2                         | <input type="checkbox"/> 3   |
| 15. Water in channel and >48 hours since sig. rain  | <input checked="" type="checkbox"/> <del>1.5</del>      | <input type="checkbox"/> 1                         | <input type="checkbox"/> 2                         | <input type="checkbox"/> 3   |
| 16. Leaf litter in channel (January – September)    | <input type="checkbox"/> 1.5                            | <input type="checkbox"/> 1                         | <input checked="" type="checkbox"/> <del>0.5</del> | <input type="checkbox"/> 0   |
| 17. Sediment on plants or on debris                 | <input type="checkbox"/> 0                              | <input checked="" type="checkbox"/> <del>0.5</del> | <input type="checkbox"/> 1                         | <input type="checkbox"/> 1.5 |
| 18. Organic debris lines or piles (wrack lines)     | <input type="checkbox"/> 0                              | <input type="checkbox"/> 0.5                       | <input checked="" type="checkbox"/> <del>1</del>   | <input type="checkbox"/> 1.5 |
| 19. Hydric soils in channel bed or sides of channel | No = 0 <input checked="" type="checkbox"/> <del>1</del> |                                                    | Yes = 1.5 <input type="checkbox"/>                 |                              |

N/A  
N/A

| <b>C. Biology</b> (Subtotal = <b>2.5</b> )       | <b>Absent</b>                                    | <b>Weak</b>                  | <b>Moderate</b>                                  | <b>Strong</b>                |
|--------------------------------------------------|--------------------------------------------------|------------------------------|--------------------------------------------------|------------------------------|
| 20. Fibrous roots in channel bed <sup>1</sup>    | <input type="checkbox"/> 3                       | <input type="checkbox"/> 2   | <input checked="" type="checkbox"/> <del>1</del> | <input type="checkbox"/> 0   |
| 21. Rooted plants in the thalweg <sup>1</sup>    | <input type="checkbox"/> 3                       | <input type="checkbox"/> 2   | <input checked="" type="checkbox"/> <del>1</del> | <input type="checkbox"/> 0   |
| 22. Crayfish in stream (exclude in floodplain)   | <input checked="" type="checkbox"/> <del>0</del> | <input type="checkbox"/> 1   | <input type="checkbox"/> 2                       | <input type="checkbox"/> 3   |
| 23. Bivalves/mussels                             | <input checked="" type="checkbox"/> <del>0</del> | <input type="checkbox"/> 1   | <input type="checkbox"/> 2                       | <input type="checkbox"/> 3   |
| 24. Amphibians                                   | <input checked="" type="checkbox"/> <del>0</del> | <input type="checkbox"/> 0.5 | <input type="checkbox"/> 1                       | <input type="checkbox"/> 1.5 |
| 25. Macroinvertebrates (record type & abundance) | <input checked="" type="checkbox"/> <del>0</del> | <input type="checkbox"/> 1   | <input type="checkbox"/> 2                       | <input type="checkbox"/> 3   |
| 26. Filamentous algae; periphyton                | <input checked="" type="checkbox"/> <del>0</del> | <input type="checkbox"/> 1   | <input type="checkbox"/> 2                       | <input type="checkbox"/> 3   |
| 27. Iron oxidizing bacteria/fungus               | <input checked="" type="checkbox"/> <del>0</del> | <input type="checkbox"/> 0.5 | <input type="checkbox"/> 1                       | <input type="checkbox"/> 1.5 |
| 28. Wetland plants in channel bed <sup>2</sup>   | <input checked="" type="checkbox"/> <del>0</del> | <input type="checkbox"/> 0.5 | <input type="checkbox"/> 1                       | <input type="checkbox"/> 1.5 |

<sup>1</sup> Focus is on the presence of terrestrial plants.

<sup>2</sup> Focus is on the presence of aquatic or wetland plants.

Total Points = 11.25

*Under Normal Conditions, Watercourse is a Wet Weather Conveyance if Secondary Indicator Score < 19 points*

### Notes :

- 1) Majority interrupted with better definition in lower reach, but still poorly defined.
- 2) Channel generally follows one long, gradual bend.
- 3) Almost entirely a run downslope
- 4) Not incised through soil profile; soil dominated with little coarse materials in lower reach
- 8) Occasional scattered alluvium in lower reach
- 10) 1-2 minor headcuts, weakly defined
- 11) One medium tree root, relatively permanent; few other minor temporary grade controls
- 12) Natural, with some disturbances upslope and near pond berm; not steeply sloped.
- 16) Abundance of leaf litter in upper portion, relatively clear in lower half of reach
- 17) Small amount of sediment on debris, not plants.
- 18) Medium debris piles common, large pile up against fence at boundary. No wracking.
- 20) Fibrous roots common throughout
- 21) Rooted veg easily observed with every other pace

## APPENDIX 5:

### Photographs



1 View of disturbed area upgradient of D-1 origin, facing southeast.



2 View from disturbed area upgradient of D-1 origin point, looking toward the assessed channel and facing northeast.



3      View of D-1 origin showing dense vegetation and leaf litter upgradient of origin point, facing southwest.



4      View of D-1 origin showing dense leaf litter and dumped trash, facing downgradient to the northeast.



5      View of poorly defined channel within upper reach of D-1, facing downgradient to the northeast.



6      View of soil substrate and upland vegetation within D-1 mid-reach, facing down.



7      View of small debris piles and soil substrate within the poorly-defined D-1 channel, facing downgradient to the east.



8      View of organic debris piles within D-1, facing upgradient to the northwest.



9 View of D-1 lower reach showing increased bed/bank definition, organic debris, and cobble/gravel on soil-dominant substrate, facing upgradient to the northwest.



10 View of D-1 at the eastern site boundary, showing large leaf pack against the fence line; facing downgradient to the southeast



11      View of D-1 beyond the site boundary, showing loss of definition as the channel approaches residential yards; facing downgradient to the southeast.



12      View of dry conditions within Pond-A, facing north.



13      View of dry conditions within Pond-A, showing disturbed areas and breached berm in background, facing southwest.



14      View of upland soils (10YR 5/3) within Pond-A, facing down.