



Jurisdictional Waters Report
Brandywine Farm
Spring Hill, Williamson County, Tennessee
S&ME Project No. 218947

PREPARED FOR:

State Street Group
1902 Wedgewood Avenue
2nd Floor
Nashville, Tennessee 37212

PREPARED BY:

S&ME, Inc.
6515 Nightingale Lane
Knoxville, Tennessee 37909

March 2, 2022



March 2, 2022

Tennessee Department of Environment
Nashville Environmental Field Office
711 R.S. Gass Boulevard
Nashville, Tennessee 37216
Attention: Mr. Bill Murph

U.S. Army Corps of Engineers
Nashville Regulatory District, West Branch
3701 Bell Road
Nashville, Tennessee 37214
Attention: Mr. Tim Wilder

Reference: **Jurisdictional Waters Report**
Brandywine Farm
Spring Hill, Williamson County, Tennessee
S&ME Project No. 218947

Dear Tim and Tim,

S&ME, Inc. (S&ME) is submitting this report to present the results of the jurisdictional waters evaluation completed by S&ME in October 2021 on approximately 74 acres of land located at 3706 John Lunn Road in Spring Hill, Williamson County, Tennessee. State Street Group proposes an industrial development at the site and contracted S&ME to delineate potential jurisdictional waters at the site to determine permitting requirements. The following report details the wetland and stream delineation performed by S&ME and includes background information, methodology, observed waters of the U.S. (WOTUS) and waters of the state (WOTS), and relevant figures and photographs.

S&ME is providing this Jurisdictional Waters Report for your review and requests U.S. Army Corps of Engineers (USACE) and Tennessee Department of Environment and Conservation (TDEC) verification of the WOUS and WOTS at the site. We will contact you to schedule a site visit, if required. In the meantime, if you have any questions regarding this report, please feel free to contact us.

Sincerely,

S&ME, Inc.

Sarah A. Rowe, PWS, QHP
Project Biologist

Elizabeth Porter, PG, PMP
Technical Principal



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- USACE Routine Wetland Determination Data Sheets (UpA - UpD, WA, WB)
- Weather Underground Rainfall Data
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1.0 Project Description

The project site is comprised of an approximately 74-acre property located at 3706 John Lunn Road in Spring Hill, Williamson County, Tennessee. The site is being evaluated for industrial development and consists of one undeveloped parcel identified on Tennessee Property Viewer database as Parcel 043 006.00. The site is currently undeveloped and consists of pasture, open fields, and forest, and the site currently operates as a small family farming operation.

S&ME has been contracted by State Street Group to obtain a Jurisdictional Determination (JD) from the U.S. Army Corps of Engineers (USACE) regarding waters of the U.S. (WOTUS) and the Tennessee Department of Environment and Conservation (TDEC) regarding waters of the state (WOTS) to determine permitting requirements in regard to Sections 401 and 404 of the Clean Water Act (CWA) of 1972. The following report details the potentially jurisdictional waters observed on the site by S&ME in October 2021.

2.0 Methodology

Jurisdictional WOTUS, including wetlands and ephemeral streams, are defined by 33 CFR Part 328.3 and are protected by Section 404 of the Clean Water Act (33 USC 1344), which is administered and enforced by the USACE. The TDEC Division of Water Resources (DWR) has jurisdiction over WOTS. The wetland assessment was performed using the Routine On-Site Determination Method as defined in the Corps of Engineers *1987 Wetlands Delineation Manual* and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region*. This technique uses a multi-parameter approach, which requires positive evidence of three criteria: hydrophytic vegetation, hydric soils, and wetland hydrology. Areas exhibiting all three wetland characteristics, as well as surface waters, are considered jurisdictional. Drainage features were evaluated in accordance with the TDEC Guidance for Making Hydrologic Determinations (HDs), Version 1.5 by a Tennessee Qualified Hydrologic Professional (QHP). The procedures outlined in this guidance are intended to be applied to drainage features that could be considered either a wet-weather conveyance (WWC) or a stream.

Our assessment for the possible occurrence of jurisdictional waters within the site consisted of using a combination of in-house research and field reconnaissance. Subsequent to the in-house review, jurisdictional WOTUS and WOTS were assessed in the field employing the methodologies referenced above.

3.0 Literature and Database Review

Prior to our site visit, S&ME performed a literature review of the subject property to determine potential areas of concern to be evaluated while in the field. This included a review of the U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map, the TDEC 303(d) draft list and stream database viewer, U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps, historic aerial photographs, and the Natural Resources Conservation Service (NRCS) soil survey database.

The property is located on a portion of USGS quadrangle map for Carters Creek, Tennessee (Figure 1, Appendix I), and the latitude and longitude near the center of the site are 35.723361°N, 86.913739°W. According to the USGS

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topographic map and National Wetlands Inventory (NWI) maps (Figure 2, Appendix I), one blue-line stream (an unnamed tributary) bisects the property and flows from a freshwater pond near the northwestern site corner to the south, converging with Aenon Creek, which flows along the southern site boundary. The TDEC stream database only shows Aenon Creek located along the southern boundary; this stream segment is shown as having not been assessed by TDEC to determine if the waters support designated uses. The site drains to the Rutherford Creek Upper 12-digit Hydrologic Unit Code (HUC) 060400030201 watershed and the Lower Duck River 8-digit HUC (06040003); it is also located within the 71i (Inner Nashville Basin) ecoregion.

The NRCS soil survey data for Maury County, Tennessee was also reviewed for the presence of hydric soils on the site which may indicate wetland conditions due to poorly drained soil substrates. According to the NRCS soils map (Figure 3, Appendix I), the site is comprised of 11 soil types: Captina silt loam (Ca), Emory silt loam (Em), Gullied land (Gd), Hagerstown silt loam (Ha), Hermitage silt loam (He), Lindside silt loam (Ld), Pickaway silt loam (Pc), Gladeville-rock outcrop complex (Rb), Rockland, Talbott material (Rf), Talbott silty clay loam (Ta), and Talbott silty clay (Tb).

According to the NRCS data, ponding of the soils onsite is not probable, and the chance of ponding is nearly zero percent in any year. The average depth to groundwater in most of the mapped soils is greater than two feet deep, except for areas mapped Ca, Lb, and Lc, which have a depth to groundwater of 20, 23, and 15 inches, respectively. Therefore, these three soil types are more likely to have an elevated saturated zone in the soil, which may cause wetland conditions.

With the exception of low-lying areas on the western and southern portions of the site (comprised of Lb, Eb, and Lc soils), flooding at the site is not probable (i.e., the chance of flooding is nearly zero percent in any year and occurs less than one in 500 years). Flooding is rare in Lb and Eb soils, meaning that flooding is unlikely but possible under unusual weather conditions; the chance of flooding is one to five percent in any year. Flooding is frequent in Lc soils along the Aenon Creek floodplain, meaning that flooding is likely to occur often under normal weather conditions; the chance of flooding is more than 50 percent in any year but is less than 50 percent in all months in any year. This area is also included as a mapped floodway by the Federal Emergency Management Agency (FEMA) (Figure 2, Appendix I).

4.0 Field Review

S&ME personnel visited the site in October 2021 to locate and delineate WOTUS and WOTS within the assessment area, including streams (perennial, intermittent, or ephemeral), wetlands, ponds, or other surface water features. The site visit was conducted on October 12, 2021, six days following a significant rain event of 0.17 inches on October 7, 2021 (documented by the Weather Underground weather station KTNSPRIN164, Appendix II). According to the USACE Antecedent Precipitation Tool (APT) data (also attached in Appendix II), S&ME determined that the rainfall conditions within the evaluation period (i.e., the prior three months) has been slightly wetter than normal.

The site is bordered to the north, east, and west by agricultural properties and to the south by a golf course that is separated from the site by Aenon Creek. A small industrial complex is located near the northwestern corner of the site and additional industrial properties are located further northwest near Highway 396. The site is in relatively flat to gently-sloping terrain with elevations ranging from approximately 650 feet to 710 feet above sea level, with

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the higher elevations located near the northern quarter of the site. The lowest elevations are located to the south, within the Aenon Creek FEMA mapped floodway (Figure 2, Appendix I).

The majority of the site consists of open pasture that is routinely mowed and grazed by cattle. Forested fence-lines transect the site, and a small area of scrub-shrub cedar forest is present on the northeastern corner. Common tree species at the site include eastern red cedar (*Juniperus virginiana*), hackberry (*Celtis laevigata*), sycamore (*Platanus occidentalis*), Osage orange (*Maclura pomifera*), persimmon (*Diospyros virginiana*), Chinquapin oak (*Quercus muehlenbergii*), American elm (*Ulmus americana*). Shrubs include privet (*Ligustrum sinense*), honeysuckle (*Lonicera maackii*), multiflora rose (*Rosa multiflora*), and coral berry (*Symphoricarpos orbiculatus*), and herbaceous species include fescue (*Festuca* sp.), clover (*Trifolium* spp.), foxtail (*Setaria viridis*), aster (*Asteraceae* spp.), and broomsedge (*Andropogon virginicus*). No glades or barren habitats are present within the site.

During S&ME's site visit, one intermittent stream (S1), one ephemeral stream/WWC (S2E), and two wetlands (WA, WB) were observed within the project limits (refer to Table 1 below). An additional perennial stream, Aenon Creek, borders the site to the south but is not included in the project area and will not be affected by development. Locations of the potentially jurisdictional waters are shown in the attached Potential Jurisdictional Waters map (Figure 4); representative photographs of the features (Figure 6) and their locations on an aerial photograph (Figure 5) are also attached (Appendix I).

Table 1 – Potentially Jurisdictional Waters at the Site

ID	Classification TDEC/USACE (Pending Verification)	TDEC HD (Secondary Score)	Length / Acreage
S1	Intermittent Stream	22.0	3,015 feet
S2E	Ephemeral Stream / WWC	12.0	602 feet
WA	Palustrine emergent (PEM) wetland	n/a	0.05 acres
WB	Palustrine emergent (PEM) wetland	n/a	0.09 acres

Drainage Feature Assessment

Two S&ME QHPs performed an evaluation of the site to identify and characterize drainage features that may require permitting. Drainage features observed onsite were assessed using the TDEC Guidance, which provides a score for each stream's geomorphic, hydrologic, and biological characteristics. Drainages scoring 19 or above on the secondary indicator data form, or those with primary indicators, are considered streams by TDEC (i.e., WOTS). Drainage features scoring less than 19 are considered to be WWCs by TDEC and can be considered ephemeral streams by the USACE, if an ordinary high-water mark (OHWM) is present. Ephemeral streams are considered WOTUS according to current regulatory guidance and fall within Section 404 regulations. The individual stream descriptions are discussed below, and their corresponding scores can be found on the completed TDEC HD Field Data Sheets in Appendix II.

S1 is an intermittent stream that originates at a limestone outcrop near the northern end of the site and continues south until converging with Aenon Creek. S1 ranges from one to ten feet wide, has a substrate of bedrock, cobble, and silt, and a narrow riparian buffer on the northern half of the site where it is grazed and impacted by cattle use. Stream flow is variable as it continues south, with much of the southern reach observed to be dry during the site

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visit. The stream develops a well-forested buffer to the south as it approaches Aenon Creek; at this point the stream also meanders through a more natural alignment within the floodplain.

S2E is an ephemeral stream/WWC that consists of a rarely-flowing headwater drainage with a silt/gravel substrate that drains to the intermittent tributary to Aenon Creek. The channel is poorly defined and is dominated by upland vegetation in many areas. S2E has a narrow, forested buffer surrounded by frequently mowed and grazed pasture.

Wetland Assessment and Delineation

An S&ME professional wetland scientist (PWS) and an S&ME staff scientist performed a field review of the site, investigating low-lying areas that may have the potential for extended periods of saturation/inundation, areas mapped by the NRCS soil survey as possessing hydric or partially-hydric soils or other suspect areas (i.e., flooding, ponding, shallow depth to groundwater), as well as areas shown on the NWI map as either streams or wetlands. Two wetlands (WA and WB) were observed within the site.

Wetlands WA and WB are both palustrine emergent (PEM) features that abut S1 near the northern end of the site and are located in grazed cattle pasture. Both wetlands obtain their hydrology from groundwater seeps, a shallow water table over bedrock, overland flow from S1, and stormwater input from the surrounding slopes. Dominant vegetation includes sedges (*Carex* sp.), ladythumb (*Polygonum persicaria*), mountain mint (*Mentha arvensis*), and mistflower (*Conoclinium coelestinum*). Detailed descriptions of the wetlands and the associated upland data points can be found in Appendix II on the USACE Wetland Determination Data Sheets (WA, UpA, WB, UpB).

5.0 Conclusion

S&ME performed a pedestrian review of the project area in October 2021 and identified one intermittent stream, one, ephemeral stream/WWC, and two wetlands at the site. Since streams and wetlands such as those observed onsite can be considered jurisdictional by the USACE and/or TDEC, impacts to these WOTUS and/or WOTS (e.g., piping, dredging, fill, or relocations) require permits from both regulatory agencies. S&ME requests a Preliminary Jurisdictional Determination (JD) from the USACE and an HD from TDEC to assist with site planning activities and to determine permitting requirements. S&ME appreciates your assistance with this request. If you have any questions regarding this report, please call or email Sarah Rowe ((865)970-0003, srowe@smeinc.com).

6.0 References

Environmental Systems Research Institute, Inc. 2021. ArcGIS Online [web application]. <https://smeinc.maps.arcgis.com/home/index.html>. (Accessed December 1, 2021.)

Knoxville Geographic Information Systems. 2021. KGIS Maps [web application]. <https://www.kgis.org/kgismaps/map.htm>. (Accessed: December 1, 2021.)

Tennessee Department of Environment and Conservation, Division of Water Resources. 2021. Public Data Viewer [web application]. <https://tdeconline.tn.gov/dwr/>. (Accessed: December 1, 2021.)

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United States Army Corps of Engineers. 1987. Corps of Engineers Wetlands Delineation Manual. Environmental Laboratory, Waterways Experiment Station, Wetlands Research Program Technical Report Y-87-1. Vicksburg, MS.

United States Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region (Version 2.0). ERDC/EL TR-12-19. Vicksburg, MS: U.S. Army.

United States Department of Agriculture, Natural Resources Conservation Service. 2021. Plants Database [web application]. <https://plants.sc.egov.usda.gov/home>. (Accessed: December 6, 2021.)

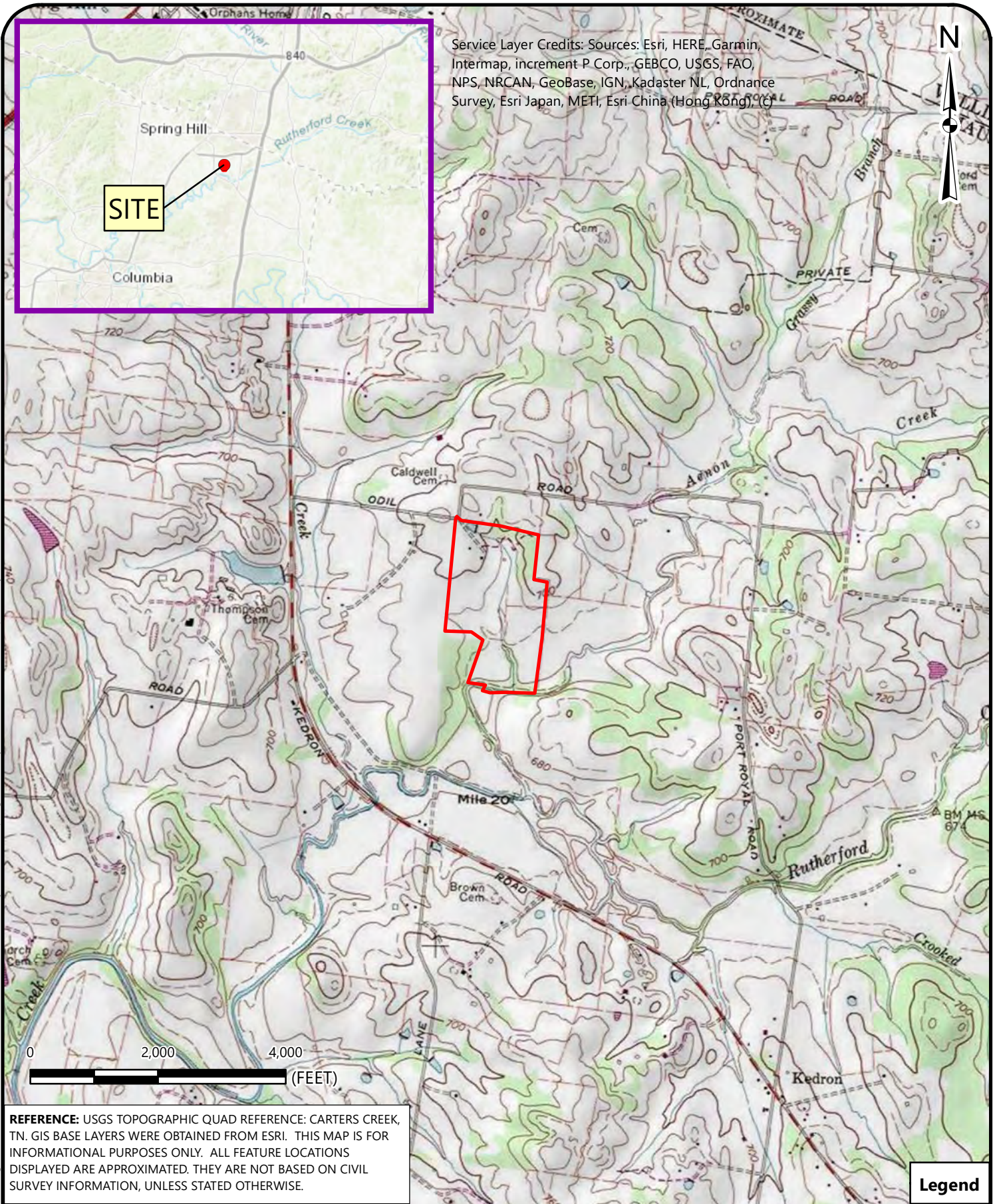
United States Department of Agriculture, Natural Resources Conservation Service. 2021. Web Soil Survey [web application]. <http://websoilsurvey.nrcs.usda.gov/>. (Accessed: December 6, 2021.)

United States Fish and Wildlife Service. 2021. National Wetlands Inventory [web application]. <https://www.fws.gov/wetlands/data/mapper.html>. (Accessed December 1, 2021.)

Appendices

Appendix I - Figures

Drawing Path: R:\GIS\SR\Knoxville North\GIS PROJECTS\2021\Projects\218947 SpringHill Brandywine.DC\FIG1_USGS.mxd plotted by Srowe 10-07-2021



USGS TOPOGRAPHIC QUADRANGLE

BRANDYWINE FARM
SPRING HILL, MAURY COUNTY, TENNESSEE

SCALE:
1" = 2,000'
DATE:
10-7-2021
PROJECT NUMBER
218764

FIGURE NO.

1

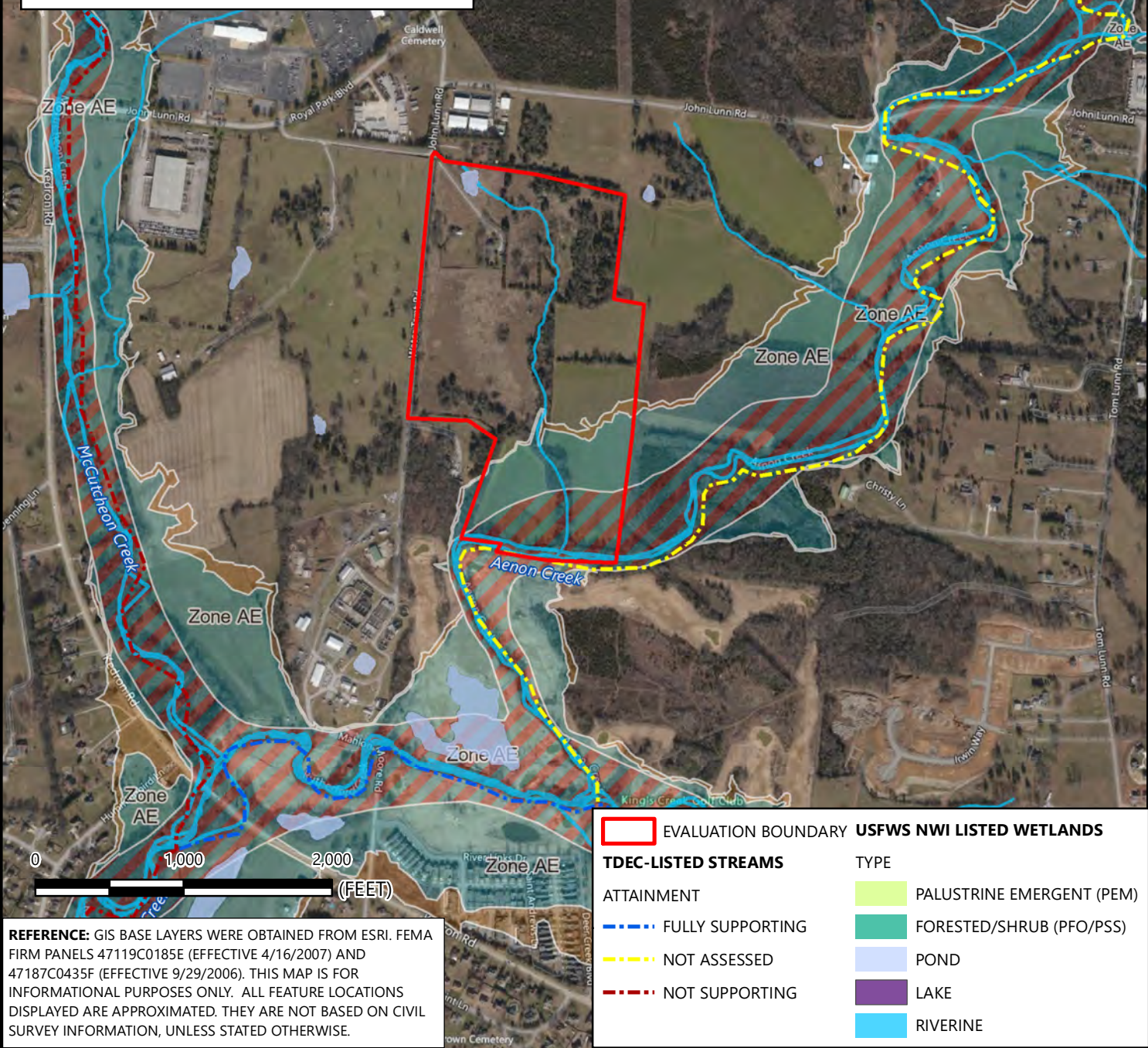
Drawing Path: R:\GIS\SR\Knoxville North\GIS PROJECTS\2021 Projects\218947 Spring Hill Brandywine DCI\FIG2_DATABASE.mxd plotted by Srowe 02-25-2022

FLOOD HAZARD ZONES

ZONE TYPE

- 1% ANNUAL CHANCE FLOOD HAZARD
- REGULATORY FLOODWAY
- SPECIAL FLOODWAY
- AREA OF UNDETERMINED FLOOD HAZARD
- 0.2% ANNUAL CHANCE FLOOD HAZARD
- FUTURE 1% ANNUAL CHANCE FLOOD HAZARD
- HAZARD AREA WITH REDUCED RISK DUE TO LEVEE
- AREA WITH RISK DUE TO LEVEE

Service Layer Credits: © 2022 Microsoft Corporation © 2022 Maxar © CNES (2022)
Distribution Airbus DS © 2022 TomTom



REFERENCE: GIS BASE LAYERS WERE OBTAINED FROM ESRI. FEMA FIRM PANELS 47119C0185E (EFFECTIVE 4/16/2007) AND 47187C0435F (EFFECTIVE 9/29/2006). THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.



EVALUATION BOUNDARY

TDEC-LISTED STREAMS

ATTAINMENT

- FULLY SUPPORTING
- NOT ASSESSED
- NOT SUPPORTING

USFWS NWI LISTED WETLANDS

TYPE

- PALUSTRINE EMERGENT (PEM)
- FORESTED/SHRUB (PFO/PSS)
- POND
- LAKE
- RIVERINE



DATABASE REVIEW

BRANDYWINE FARM
SPRING HILL, MAURY COUNTY, TENNESSEE

SCALE:
1" = 1,000'
DATE:
2-25-2022
PROJECT NUMBER
218947

FIGURE NO.

2

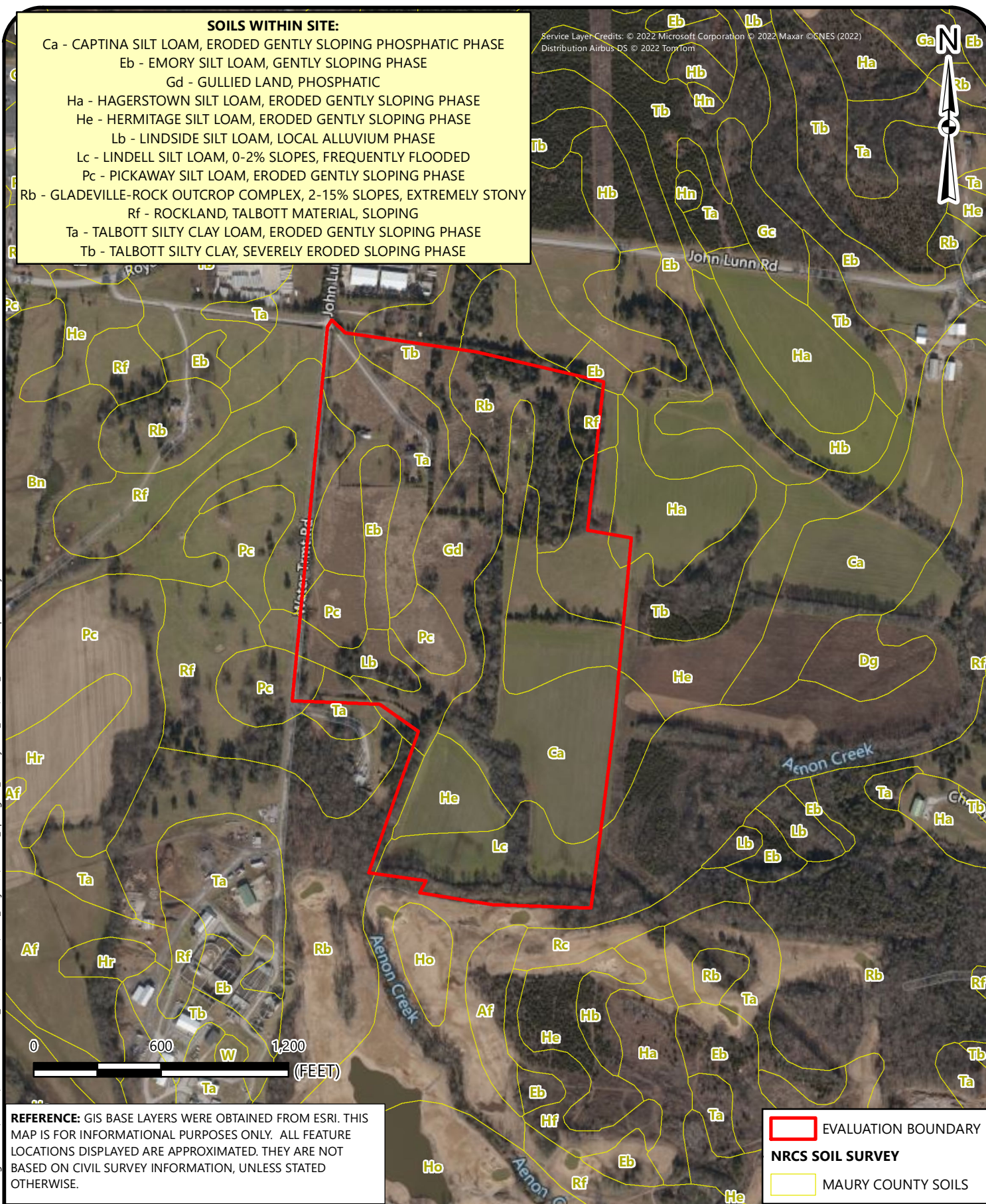
SOILS WITHIN SITE:

Ca - CAPTINA SILT LOAM, ERODED GENTLY SLOPING PHOSPHATIC PHASE
 Eb - EMORY SILT LOAM, GENTLY SLOPING PHASE
 Gd - GULLIED LAND, PHOSPHATIC
 Ha - HAGERSTOWN SILT LOAM, ERODED GENTLY SLOPING PHASE
 He - HERMITAGE SILT LOAM, ERODED GENTLY SLOPING PHASE
 Lb - LINDSIDE SILT LOAM, LOCAL ALLUVIUM PHASE
 Lc - LINDELL SILT LOAM, 0-2% SLOPES, FREQUENTLY FLOODED
 Pc - PICKAWAY SILT LOAM, ERODED GENTLY SLOPING PHASE
 Rb - GLADEVILLE-ROCK OUTCROP COMPLEX, 2-15% SLOPES, EXTREMELY STONY
 Rf - ROCKLAND, TALBOTT MATERIAL, SLOPING
 Ta - TALBOTT SILTY CLAY LOAM, ERODED GENTLY SLOPING PHASE
 Tb - TALBOTT SILTY CLAY, SEVERELY ERODED SLOPING PHASE

Service Layer Credits: © 2022 Microsoft Corporation © 2022 Maxar © CNES (2022)
 Distribution Airbus DS © 2022 TopoTom



Drawing Path: R:\GIS\SR\Knoxville North\GIS PROJECTS\2021 Projects\218947 Spring Hill Brandywine DCIFIG3_SOILS.mxd plotted by Srowe 03-01-2022



REFERENCE: GIS BASE LAYERS WERE OBTAINED FROM ESRI. THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.

EVALUATION BOUNDARY
NRCS SOIL SURVEY
MAURY COUNTY SOILS



NRCS SOIL SURVEY

BRANDYWINE FARM
 SPRING HILL, MAURY COUNTY, TENNESSEE

SCALE:
 1" = 600'
 DATE:
 2-25-2022
 PROJECT NUMBER
 218947

FIGURE NO.

3

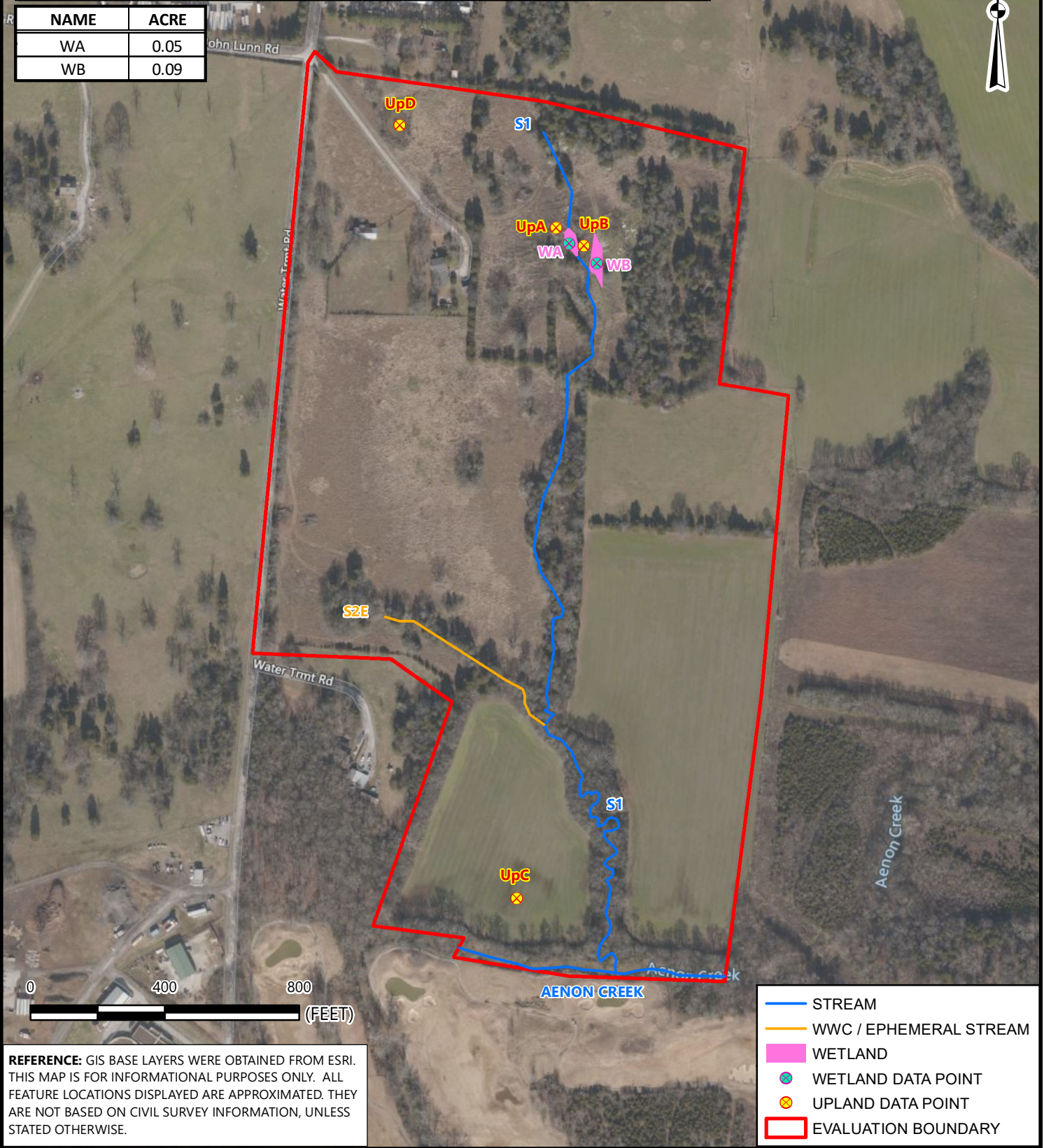
NAME	LENGTH	LAT START	LONG START	LAT END	LONG END
S1	3015	35.7262	-86.9134	35.7193	-86.9126
AENON CREEK	807	35.7195	-86.9141	35.7193	-86.9115
S2E	602	-86.9149	35.7214	35.7222	-86.9133

NAME	ACRE
WA	0.05
WB	0.09

Service Layer Credits: © 2022 Microsoft Corporation ©
2022 Maxar ©CNES (2022) Distribution Airbus DS ©
2022 TomTom



Drawing Path: R:\GIS\SR\Knoxville North\GIS PROJECTS\2021\Projects\218947_SpringHill_Brandywine_DC\FIGURE 4 POTENTIAL JURISDICTIONAL WATERS MAP.mxd plotted by Srowe 02-25-2022



REFERENCE: GIS BASE LAYERS WERE OBTAINED FROM ESRI. THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.

	STREAM
	WWC / EPHEMERAL STREAM
	WETLAND
	WETLAND DATA POINT
	UPLAND DATA POINT
	EVALUATION BOUNDARY



POTENTIAL JURISDICTIONAL WATERS MAP

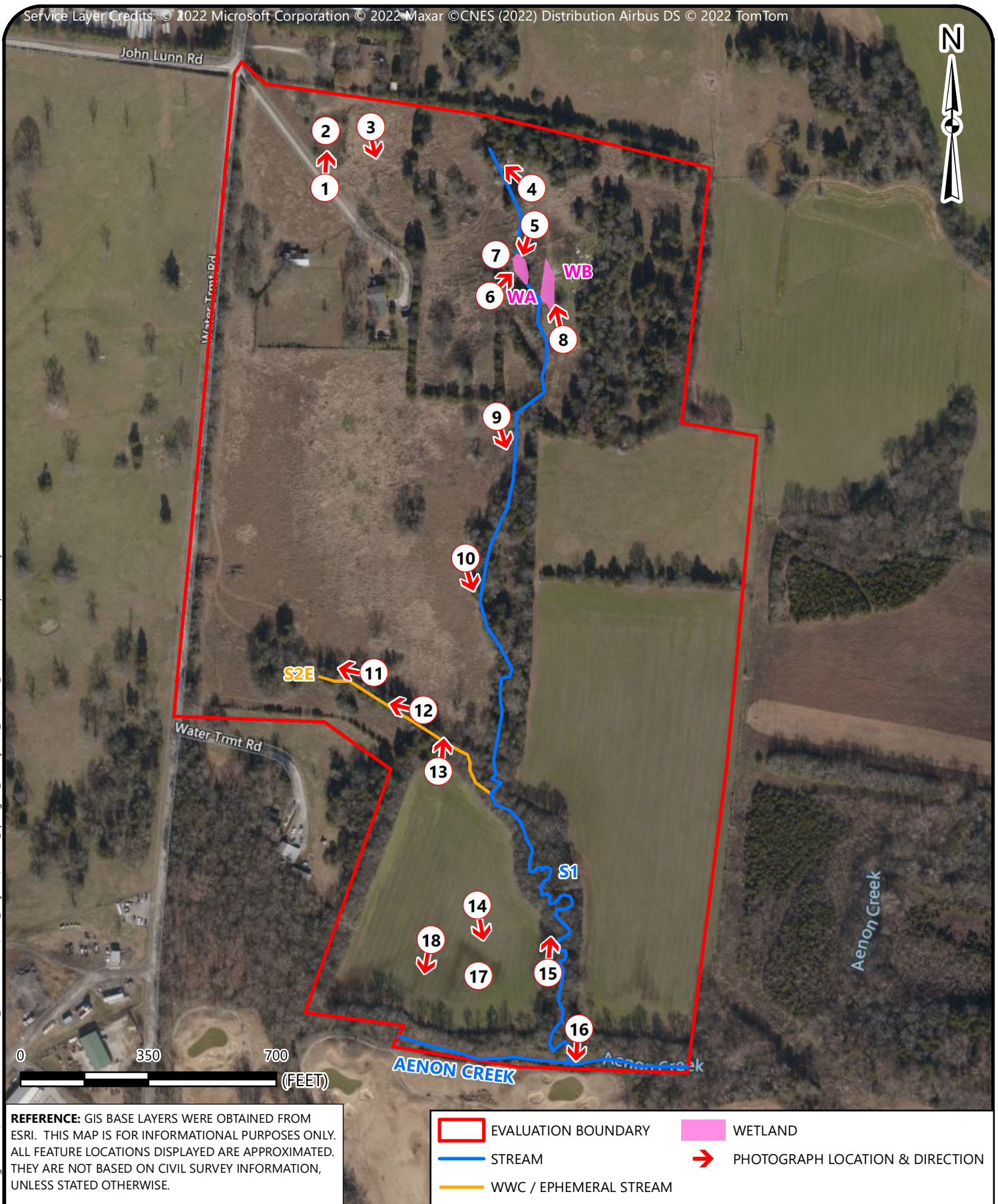
BRANDYWINE FARM
SPRING HILL, MAURY COUNTY, TENNESSEE

SCALE:
1" = 400'
DATE:
2-25-2022
PROJECT NUMBER
218947

FIGURE NO.

4

Drawing Path: R:\GIS\Ren\Knoxville North\GIS PROJECTS\2021 Projects\218947_SpringHill_Brandywine_DC\FIGS_JDPHOTOS.mxd plotted by Srowe 03-01-2022



PHOTOGRAPH LOCATIONS

BRANDYWINE FARM
SPRING HILL, MAURY COUNTY, TENNESSEE

SCALE:
1" = 350'

DATE:
2-25-2022
PROJECT NUMBER
218947

FIGURE NO.

5

Figure 6 – Representative Photographs

Brandywine Farm

Spring Hill, Maury County, Tennessee

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Page 1



		Date: 10/12/2021
Photographer: Sarah A. Rowe		
1	Location / Orientation	Refer to Figure 5 for location.
	Remarks	Dry pond located near the northern boundary of the site; no hydric soils present.

		Date: 10/12/2021
Photographer: Sarah A. Rowe		
2	Location / Orientation	Refer to Figure 5 for location.
	Remarks	Upland, high-chroma soils present in the dry pond.

Figure 6 – Representative Photographs

Brandywine Farm

Spring Hill, Maury County, Tennessee

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Page 2



		Date: 10/12/2021
		Photographer: Sarah A. Rowe
3	Location / Orientation	Refer to Figure 5 for location.
	Remarks	Representative view of the fields on the northern half of the site.

		Date: 10/12/2021
		Photographer: Sarah A. Rowe
4	Location / Orientation	Refer to Figure 5 for location.
	Remarks	Origin of intermittent stream S1, facing upstream.

Figure 6 – Representative Photographs

Brandywine Farm

Spring Hill, Maury County, Tennessee

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Page 3



		Date: 10/12/2021
		Photographer: Sarah A. Rowe
5	Location / Orientation	Refer to Figure 5 for location.
	Remarks	Headwaters of intermittent stream S1, facing downstream.

		Date: 10/12/2021
		Photographer: Sarah A. Rowe
6	Location / Orientation	Refer to Figure 5 for location.
	Remarks	Emergent wetland WA that is frequently mowed and grazed.

Figure 6 – Representative Photographs**Brandywine Farm**

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		Date: 10/12/2021
		Photographer: Sarah A. Rowe
7	Location / Orientation	Refer to Figure 5 for location.
	Remarks	Hydric soils with a depleted matrix observed in WA.

		Date: 10/12/2021
		Photographer: Sarah A. Rowe
8	Location / Orientation	Refer to Figure 5 for location.
	Remarks	Emergent wetland WB that is frequently mowed and grazed.

Figure 6 – Representative Photographs

Brandywine Farm

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Page 5



		Date: 10/12/2021
		Photographer: Sarah A. Rowe
9	Location / Orientation	Refer to Figure 5 for location.
	Remarks	S1 facing downstream.

		Date: 10/12/2021
		Photographer: Sarah A. Rowe
10	Location / Orientation	Refer to Figure 5 for location.
	Remarks	S1 facing downstream.

Figure 6 – Representative Photographs**Brandywine Farm**

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		Date: 10/12/2021
		Photographer: Sarah A. Rowe
11	Location / Orientation	Refer to Figure 5 for location.
	Remarks	Ephemeral stream S2E origin, facing upstream.

		Date: 10/12/2021
		Photographer: Sarah A. Rowe
12	Location / Orientation	Refer to Figure 5 for location.
	Remarks	S2E facing upstream.

Figure 6 – Representative Photographs

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		Date: 10/12/2021
Photographer: Sarah A. Rowe		
13	Location / Orientation	Refer to Figure 5 for location.
	Remarks	Ephemeral stream S2E where it loses definition downstream and is dominated by upland vegetation.

		Date: 10/12/2021
Photographer: Sarah A. Rowe		
14	Location / Orientation	Refer to Figure 5 for location.
	Remarks	View of the floodplain adjacent to Aenon Creek.

Figure 6 – Representative Photographs

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		Date: 10/12/2021
		Photographer: Sarah A. Rowe
15	Location / Orientation	Refer to Figure 5 for location.
	Remarks	Lower reach of S1, facing upstream.

		Date: 10/12/2021
		Photographer: Sarah A. Rowe
16	Location / Orientation	Refer to Figure 5 for location.
	Remarks	View of Aeon Creek that borders the site to the south.

Figure 6 – Representative Photographs**Brandywine Farm**

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		Date: 10/12/2021
		Photographer: Sarah A. Rowe
17	Location / Orientation	Refer to Figure 5 for location.
	Remarks	No hydric soils observed within the Aenon Creek floodplain.

		Date: 10/12/2021
		Photographer: Sarah A. Rowe
18	Location / Orientation	Refer to Figure 5 for location.
	Remarks	Upland vegetation dominant within Aenon Creek floodplain.

Appendix II - Data Forms

**Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

Named Waterbody: UNT to Aenon Creek - S1		Date/Time: 10/12/21
Assessors/Affiliation: S&ME, Inc. (J. Rowe 1103-TN12, S. ROWE 1012-TN11)		Project ID :
Site Name/Description: Brandywine Farm		218947
Site Location: Headwaters of central drainage feature		
HUC (12 digit):	Latitude: 35.725669	
Previous Rainfall (7-days) : 1.2 inches (1.1 on 10/5, 0.1 on 10/6)	Longitude: -86.913078	
Precipitation this Season vs. Normal : average Antecedent Precipitation Tool		
Source of recent & seasonal precip. data :		
Watershed Size : 0.04 square miles	County: Maury	
Soil Type(s) / Geology : Captina silt loam, eroded gently sloping phosphatic phase / limestone/karst	Source: USDA / USGS	
Surrounding Land Use : Agriculture, residential		
Degree of historical alteration to natural channel morphology & hydrology (select one & describe fully in Notes) : Slight		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	☒	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	☒	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions N/A	☐	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	☒	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	☒	Stream
6. Presence of fish (except <i>Gambusia</i>)	☒	Stream
7. Presence of naturally occurring ground water table connection	☐	Stream
8. Flowing water in channel and 7 days since last precip >0.1 " in local watershed	☐	Stream
9. Evidence watercourse has been used as a supply of drinking water	☒	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-DWR Guidance For Making Hydrologic Determinations, Version 1.5*

Overall Hydrologic Determination = STREAM**Secondary Indicator Score (if applicable) = 22.00****Justification / Notes :**

Channel begins at a limestone outcrop near the northern site boundary. Flow is intermittent throughout channel and disappears at some karst-dominated areas. HD secondary score completed near northern reach of channel; stream geomorphology, hydrology, and biology become stronger as the channel flows south; therefore, the downstream reach of S1 would obtain a higher score than 22.00.

Secondary Field Indicator Evaluation

S1

A. Geomorphology (Subtotal = 9.00)	Absent	Weak	Moderate	Strong	
1. Continuous bed and bank	0	1	2	3	1
2. Sinuous channel	0	1	2	3	0.5
3. In-channel structure: riffle-pool sequences	0	1	2	3	1
4. Sorting of soil textures or other substrate	0	1	2	3	1
5. Active/relic floodplain	0	0.5	1	1.5	0.5
6. Depositional bars or benches	0	1	2	3	1
7. Braided channel	0	1	2	3	0
8. Recent alluvial deposits	0	0.5	1	1.5	1
9. Natural levees	0	1	2	3	0
10. Headcuts	0	1	2	3	0
11. Grade controls	0	0.5	1	1.5	1.5
12. Natural valley or drainageway	0	0.5	1	1.5	1.5
13. At least second order channel on existing USGS or NRCS map	0	1	2	3	0

B. Hydrology (Subtotal = 6.00)	Absent	Weak	Moderate	Strong	
14. Subsurface flow/discharge into channel	0	1	2	3	1
15. Water in channel and >48 hours since sig. rain	0	1	2	3	1
16. Leaf litter in channel	1.5	1	0.5	0	0.5
17. Sediment on plants or on debris	0	0.5	1	1.5	1
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5	1
19. Hydric soils in channel bed or sides of channel	No 0		Yes = 1.5		1.5

C. Biology (Subtotal 7.00)	Absent	Weak	Moderate	Strong	
20. Fibrous roots in channel bed ¹	3	2	1	0	1
21. Rooted plants in the thalweg ¹	3	2	1	0	2
22. Crayfish in stream (exclude in floodplain)	0	1	2	3	0
23. Bivalves/mussels	0	1	2	3	0
24. Amphibians	0	0.5	1	1.5	0
25. Macroinvertebrates (record type & abundance)	0	1	2	3	1
26. Filamentous algae; periphyton	0	1	2	3	2
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5	0
28. Wetland plants in channel bed ²	0	0.5	1	1.5	1

¹ Focus is on the presence of terrestrial plants.

² Focus is on the presence of aquatic or wetland plants.

Total Points = 22.00

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

Notes :

**Hydrologic Determination Field Data Sheet**

Tennessee Division of Water Resources, Version 1.5 (Fillable Form)

Named Waterbody: UNT to Aenon Creek - S2E		Date/Time: 10/12/21
Assessors/Affiliation: S&ME, Inc. (J. Rowe 1103-TN12, S. ROWE 1012-TN11)		Project ID :
Site Name/Description: Brandywine Farm		218947
Site Location: Southwestern corner of site		
HUC (12 digit): 060400030201	Latitude: 35.7214	
Previous Rainfall (7-days) : 1.2 inches (1.1 on 10/5, 0.1 on 10/6)	Longitude: -86.9149	
Precipitation this Season vs. Normal : elevated Source of recent & seasonal precip. data : Antecedent Precipitation Tool		
Watershed Size : <0.01 square miles	County: Maury	
Soil Type(s) / Geology : Lindside silt loam, eroded gently sloping phase / limestone/karst	Source: USDA / USGS	
Surrounding Land Use : Agriculture, residential		
Degree of historical alteration to natural channel morphology & hydrology (select one & describe fully in Notes) : Slight		

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	☒	WWC
2. Defined bed and bank absent, vegetation composed of upland and FACU species	☒	WWC
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	☐ N/A	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	☒	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	☒	Stream
6. Presence of fish (except <i>Gambusia</i>)	☒	Stream
7. Presence of naturally occurring ground water table connection	☒	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	☐	Stream
9. Evidence watercourse has been used as a supply of drinking water	☒	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-DWR Guidance For Making Hydrologic Determinations, Version 1.5

Overall Hydrologic Determination = WET WEATHER CONVEYANCE**Secondary Indicator Score (if applicable) = 12.00****Justification / Notes :**

S2E originates at a shallow headcut near the western site boundary. The channel is ill-defined in many areas; however, some of the forested sections of channel possess a significant bed/bank.

Secondary Field Indicator Evaluation

S2E

A. Geomorphology (Subtotal = 8.00)	Absent	Weak	Moderate	Strong	
1. Continuous bed and bank	0	1	2	3	1.5
2. Sinuous channel	0	1	2	3	0
3. In-channel structure: riffle-pool sequences	0	1	2	3	1
4. Sorting of soil textures or other substrate	0	1	2	3	1
5. Active/relic floodplain	0	0.5	1	1.5	0
6. Depositional bars or benches	0	1	2	3	0.5
7. Braided channel	0	1	2	3	0
8. Recent alluvial deposits	0	0.5	1	1.5	1
9. Natural levees	0	1	2	3	0
10. Headcuts	0	1	2	3	0.5
11. Grade controls	0	0.5	1	1.5	1
12. Natural valley or drainageway	0	0.5	1	1.5	1.5
13. At least second order channel on existing USGS or NRCS map	0	1	2	3	0

B. Hydrology (Subtotal = 2.00)	Absent	Weak	Moderate	Strong	
14. Subsurface flow/discharge into channel	0	1	2	3	0
15. Water in channel and >48 hours since sig. rain	0	1	2	3	0
16. Leaf litter in channel (January – September)	1.5	1	0.5	0	0.5
17. Sediment on plants or on debris	0	0.5	1	1.5	1
18. Organic debris lines or piles (wrack lines)	0	0.5	1	1.5	0.5
19. Hydric soils in channel bed or sides of channel	No = 0		Yes = 1.5		0

C. Biology (Subtotal = 2.00)	Absent	Weak	Moderate	Strong	
20. Fibrous roots in channel bed ¹	3	2	1	0	1
21. Rooted plants in the thalweg ¹	3	2	1	0	1
22. Crayfish in stream (exclude in floodplain)	0	1	2	3	0
23. Bivalves/mussels	0	1	2	3	0
24. Amphibians	0	0.5	1	1.5	0
25. Macroinvertebrates (record type & abundance)	0	1	2	3	0
26. Filamentous algae; periphyton	0	1	2	3	0
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5	0
28. Wetland plants in channel bed ²	0	0.5	1	1.5	0

¹ Focus is on the presence of terrestrial plants.

² Focus is on the presence of aquatic or wetland plants.

Total Points = 12.00

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

Notes :

21. Rooted upland plants prevalent through much of the reach.

22 - 28. - No biological indicators observed.

14 - 15. - Channel dry with no saturation of the hyporheic zone present.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Brandywine Farm **City/County:** Nashville / Davidson **Sampling Date:** 12-Oct-21
Applicant/Owner: State Street Group **State:** TN **Sampling Point:** UpA
Investigator(s): Sarah Rowe, Josh Rowe (S&ME, Inc.) **Section, Township, Range:** S T R
Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** rolling **Slope:** 0.0 % / 0.0 °
Subregion (LRR or MLRA): LRR N **Lat.:** 35.725412 **Long.:** -86.913213 **Datum:** NAD83
Soil Map Unit Name: Rb - Gladeville-Rock outcrop complex, 2-15% slopes, extremely stony **NWI classification:** Upland

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 ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks: Upland point is located along the floodplain of an UNT to Aenon Creek slightly upslope from a groundwater seep-fed wetland.	

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) ☐ Surface Water (A1) ☐ True Aquatic Plants (B14) ☐ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☐ Saturation (A3) ☐ Oxidized Rhizospheres along Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)		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) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-neutral Test (D5)
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 hydrology indicators observed at upland point.		

VEGETATION (Five/Four Strata)- Use scientific names of plants.

				Sampling Point: <u>UpA</u>	
Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status		
1. _____		☐ 0.0%		Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)	
2. _____		☐ 0.0%			
3. _____	0	☐ 0.0%			
4. _____	0	☐ 0.0%			
5. _____	0	☐ 0.0%			
6. _____	0	☐ 0.0%			
7. _____	0	☐ 0.0%			
8. _____	0	☐ 0.0%			
		= Total Cover		Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>0</u> x 3 = <u>0</u> FACU species <u>72</u> x 4 = <u>288</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>72</u> (A) <u>288</u> (B) Prevalence Index = B/A = <u>4.000</u>	
		= Total Cover			
		= Total Cover			
1. <u>Juniperus virginiana</u>	5	☒ 100.0%	FACU		
2. _____		☐ 0.0%			
3. _____		☐ 0.0%			
4. _____		☐ 0.0%			
5. _____		☐ 0.0%			
6. _____	0	☐ 0.0%			
7. _____	0	☐ 0.0%			
8. _____	0	☐ 0.0%			
9. _____	0	☐ 0.0%			
10. _____	0	☐ 0.0%			
		= Total Cover		Hydrophytic Vegetation Indicators: ☐ Rapid Test for Hydrophytic Vegetation ☐ Dominance Test is > 50% ☐ Prevalence Index is ≤3.0 ¹ ☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
		= Total Cover			
1. _____	0	☐ 0.0%			
2. _____	0	☐ 0.0%			
3. _____	0	☐ 0.0%			
4. _____	0	☐ 0.0%			
5. _____	0	☐ 0.0%			
6. _____	0	☐ 0.0%			
7. _____	0	☐ 0.0%			
		= Total Cover		Definition of Vegetation Strata: Four Vegetation Strata: Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height. Five Vegetation Strata: Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.	
		= Total Cover			
1. <u>Festuca arundinacea</u>	40	☒ 59.7%	FACU		
2. <u>Amaranthus retroflexus</u>	20	☒ 29.9%	FACU		
3. <u>Symphotrichum ericoides</u>	2	☐ 3.0%	FACU		
4. <u>Ambrosia artemisiifolia</u>	3	☐ 4.5%	FACU		
5. <u>Solidago canadensis</u>	2	☐ 3.0%	FACU		
6. _____	0	☐ 0.0%			
7. _____	0	☐ 0.0%			
8. _____	0	☐ 0.0%			
9. _____	0	☐ 0.0%			
10. _____	0	☐ 0.0%			
11. _____	0	☐ 0.0%			
12. _____	0	☐ 0.0%			
		= Total Cover		Hydrophytic Vegetation Present? Yes ☐ No ☒	
		= Total Cover			
1. _____	0	☐ 0.0%			
2. _____	0	☐ 0.0%			
3. _____	0	☐ 0.0%			
4. _____	0	☐ 0.0%			
5. _____	0	☐ 0.0%			
6. _____	0	☐ 0.0%			
		= Total Cover			

Remarks: (Include photo numbers here or on a separate sheet.)
 Vegetation at the upland comprised of primarily FACU species.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Sampling Point: UpA

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

[illegible]

¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Indicators for Problematic Hydric Soils³:

- | | |
|---|--|
| ☐ Histosol (A1) | ☐ Dark Surface (S7) |
| ☐ Histic Epipedon (A2) | ☐ Polyvalue Below Surface (S8) (MLRA 147,148) |
| ☐ Black Histic (A3) | ☐ Thin Dark Surface (S9) (MLRA 147, 148) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Stratified Layers (A5) | ☐ Depleted Matrix (F3) |
| ☐ 2 cm Muck (A10) (LRR N) | ☐ Redox Dark Surface (F6) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Dark Surface (F7) |
| ☐ Thick Dark Surface (A12) | ☐ Redox Depressions (F8) |
| ☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148) | ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136) |
| ☐ Sandy Gleyed Matrix (S4) | ☐ Umbric Surface (F13) (MLRA 136, 122) |
| ☐ Sandy Redox (S5) | ☐ Piedmont Floodplain Soils (F19) (MLRA 148) |
| ☐ Stripped Matrix (S6) | ☐ Red Parent Material (F21) (MLRA 127, 147) |

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16)
(MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19)
(MLRA 136, 147)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

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

Hydric Soil Present? Yes ☐ No ☒

Type: _____

Depth (inches):

Remarks:

No hydric soil indicators observed at the upland data point.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Brandywine Farm **City/County:** Nashville / Davidson **Sampling Date:** 12-Oct-21
Applicant/Owner: State Street Group **State:** TN **Sampling Point:** UpB
Investigator(s): Sarah Rowe, Josh Rowe (S&ME, Inc.) **Section, Township, Range:** S T R
Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** rolling **Slope:** 0.0 % / 0.0 °
Subregion (LRR or MLRA): LRR N **Lat.:** 35.725127 **Long.:** -86.912820 **Datum:** NAD83
Soil Map Unit Name: Rb - Gladeville-Rock outcrop complex, 2-15% slopes, extremely stony **NWI classification:** Upland

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 ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks: Upland point is located along the floodplain of an UNT to Aenon Creek slightly upslope from a groundwater seep-fed wetland.	

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) ☐ Surface Water (A1) ☐ True Aquatic Plants (B14) ☐ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☐ Saturation (A3) ☐ Oxidized Rhizospheres along Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)		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) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-neutral Test (D5)
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 hydrology indicators observed at upland point.		

VEGETATION (Five/Four Strata)- Use scientific names of plants.

				Sampling Point: <u>UpB</u>	
Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
1.			☐ 0.0%		
2.			☐ 0.0%		
3.		0	☐ 0.0%		
4.		0	☐ 0.0%		
5.		0	☐ 0.0%		
6.		0	☐ 0.0%		
7.		0	☐ 0.0%		
8.		0	☐ 0.0%		
		0	= Total Cover		
Sapling-Sapling/Shrub Stratum	(Plot size: <u>15 ft</u>)				
1.			☐ 0.0%		
2.			☐ 0.0%		
3.			☐ 0.0%		
4.			☐ 0.0%		
5.			☐ 0.0%		
6.		0	☐ 0.0%		
7.		0	☐ 0.0%		
8.		0	☐ 0.0%		
9.		0	☐ 0.0%		
10.		0	☐ 0.0%		
		0	= Total Cover		
Shrub Stratum	(Plot size: _____)				
1.		0	☐ 0.0%		
2.		0	☐ 0.0%		
3.		0	☐ 0.0%		
4.		0	☐ 0.0%		
5.		0	☐ 0.0%		
6.		0	☐ 0.0%		
7.		0	☐ 0.0%		
		0	= Total Cover		
Herb Stratum	(Plot size: <u>5 ft</u>)				
1. <u>Festuca arundinacea</u>		10	☐ 11.1%	FACU	
2. <u>Persicaria pensylvanica</u>		5	☐ 5.6%	FACW	
3. <u>Cynodon dactylon</u>		60	☒ 66.7%	FACU	
4. <u>Amaranthus retroflexus</u>		15	☐ 16.7%	FACU	
5.			☐ 0.0%		
6.		0	☐ 0.0%		
7.		0	☐ 0.0%		
8.		0	☐ 0.0%		
9.		0	☐ 0.0%		
10.		0	☐ 0.0%		
11.		0	☐ 0.0%		
12.		0	☐ 0.0%		
		90	= Total Cover		
Woody Vine Stratum	(Plot size: _____)				
1.		0	☐ 0.0%		
2.		0	☐ 0.0%		
3.		0	☐ 0.0%		
4.		0	☐ 0.0%		
5.		0	☐ 0.0%		
6.		0	☐ 0.0%		
		0	= Total Cover		

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: 0.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: 0 Multiply by: 1

OBL species 0 x 1 = 0

FACW species 5 x 2 = 10

FAC species 0 x 3 = 0

FACU species 85 x 4 = 340

UPL species 0 x 5 = 0

Column Totals: 90 (A) 350 (B)

Prevalence Index = B/A = 3.889

Hydrophytic Vegetation Indicators:

☐ Rapid Test for Hydrophytic Vegetation

☐ Dominance Test is > 50%

☐ Prevalence Index is ≤ 3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks: (Include photo numbers here or on a separate sheet.)

Vegetation at the upland comprised of primarily FACU species.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Sampling Point: UpB

US Army Corps of Engineers Eastern Mountains and Piedmont - Version 2.0

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Brandywine Farm **City/County:** Nashville / Davidson **Sampling Date:** 12-Oct-21
Applicant/Owner: State Street Group **State:** TN **Sampling Point:** UpC
Investigator(s): Sarah Rowe, Josh Rowe (S&ME, Inc.) **Section, Township, Range:** S T R
Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** flat **Slope:** 0.0 % / 0.0 °
Subregion (LRR or MLRA): LRR N **Lat.:** 35.725412 **Long.:** -86.913213 **Datum:** NAD83
Soil Map Unit Name: Lc - Lindell silt loam, 0-2% slopes, frequently flooded **NWI classification:** Upland

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 ☒ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☐ No ☒	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks: Upland point is located along the floodplain of an Aenon Creek.	

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) ☐ Surface Water (A1) ☐ True Aquatic Plants (B14) ☐ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☐ Saturation (A3) ☐ Oxidized Rhizospheres along Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)		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) ☐ Stunted or Stressed Plants (D1) ☐ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☐ FAC-neutral Test (D5)
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 hydrology indicators observed at upland point.		

VEGETATION (Five/Four Strata)- Use scientific names of plants.

				Sampling Point: <u>UpC</u>	
Tree Stratum (Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status		
1. _____		☐ 0.0%		Dominance Test worksheet: Number of Dominant Species That are OBL, FACW, or FAC: <u>0</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)	
2. _____		☐ 0.0%			
3. _____	0	☐ 0.0%			
4. _____	0	☐ 0.0%			
5. _____	0	☐ 0.0%			
6. _____	0	☐ 0.0%			
7. _____	0	☐ 0.0%			
8. _____	0	☐ 0.0%			
= Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>5</u> x 2 = <u>10</u> FAC species <u>20</u> x 3 = <u>60</u> FACU species <u>67</u> x 4 = <u>268</u> UPL species <u>0</u> x 5 = <u>0</u> Column Totals: <u>92</u> (A) <u>338</u> (B) Prevalence Index = B/A = <u>3.674</u>	
= Total Cover					
1. _____		☐ 0.0%			
2. _____		☐ 0.0%			
3. _____		☐ 0.0%			
4. _____		☐ 0.0%			
5. _____		☐ 0.0%			
6. _____	0	☐ 0.0%			
7. _____	0	☐ 0.0%			
8. _____	0	☐ 0.0%			
9. _____	0	☐ 0.0%			
10. _____	0	☐ 0.0%			
= Total Cover				Hydrophytic Vegetation Indicators: ☐ Rapid Test for Hydrophytic Vegetation ☐ Dominance Test is > 50% ☐ Prevalence Index is ≤3.0 ¹ ☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ☐ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
= Total Cover					
1. _____	0	☐ 0.0%			
2. _____	0	☐ 0.0%			
3. _____	0	☐ 0.0%			
4. _____	0	☐ 0.0%			
5. _____	0	☐ 0.0%			
6. _____	0	☐ 0.0%			
7. _____	0	☐ 0.0%			
8. _____	0	☐ 0.0%			
= Total Cover				Definition of Vegetation Strata: Four Vegetation Strata: Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall. Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall. Woody vines – Consists of all woody vines greater than 3.28 ft in height. Five Vegetation Strata: Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height. Woody vines – Consists of all woody vines, regardless of height.	
= Total Cover					
1. <u>Solidago canadensis</u>	30	☒ 32.6%	FACU		
2. <u>Andropogon virginicus</u>	30	☒ 32.6%	FACU		
3. <u>Andropogon gerardii</u>	10	☐ 10.9%	FAC		
4. <u>Rudbeckia hirta</u>	5	☐ 5.4%	FACU		
5. <u>Persicaria pensylvanica</u>	5	☐ 5.4%	FACW		
6. <u>Rumex crispus</u>	5	☐ 5.4%	FAC		
7. <u>Conyza canadensis</u>	2	☐ 2.2%	FACU		
8. <u>Vernonia qigantea</u>	5	☐ 5.4%	FAC		
9. _____	0	☐ 0.0%			
10. _____	0	☐ 0.0%			
11. _____	0	☐ 0.0%			
12. _____	0	☐ 0.0%			
= Total Cover				Hydrophytic Vegetation Present? Yes ☐ No ☒	
= Total Cover					
1. _____	0	☐ 0.0%			
2. _____	0	☐ 0.0%			
3. _____	0	☐ 0.0%			
4. _____	0	☐ 0.0%			
5. _____	0	☐ 0.0%			
6. _____	0	☐ 0.0%			
= Total Cover					

Remarks: (Include photo numbers here or on a separate sheet.)
 Vegetation at the upland comprised of primarily FACU and FAC species.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Soil

Sampling Point: UpC

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

[illegible]

¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- | | |
|---|--|
| ☐ Histosol (A1) | ☐ Dark Surface (S7) |
| ☐ Histic Epipedon (A2) | ☐ Polyvalue Below Surface (S8) (MLRA 147,148) |
| ☐ Black Histic (A3) | ☐ Thin Dark Surface (S9) (MLRA 147, 148) |
| ☐ Hydrogen Sulfide (A4) | ☐ Loamy Gleyed Matrix (F2) |
| ☐ Stratified Layers (A5) | ☐ Depleted Matrix (F3) |
| ☐ 2 cm Muck (A10) (LRR N) | ☐ Redox Dark Surface (F6) |
| ☐ Depleted Below Dark Surface (A11) | ☐ Depleted Dark Surface (F7) |
| ☐ Thick Dark Surface (A12) | ☐ Redox Depressions (F8) |
| ☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148) | ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136) |
| ☐ Sandy Gleyed Matrix (S4) | ☐ Umbric Surface (F13) (MLRA 136, 122) |
| ☐ Sandy Redox (S5) | ☐ Piedmont Floodplain Soils (F19) (MLRA 148) |
| ☐ Stripped Matrix (S6) | ☐ Red Parent Material (F21) (MLRA 127, 147) |

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16)
(MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19)
(MLRA 136, 147)
- ☐ 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 hydric soil indicators observed at the upland data point.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Brandywine Farm **City/County:** Nashville / Davidson **Sampling Date:** 12-Oct-21
Applicant/Owner: State Street Group **State:** TN **Sampling Point:** UpD
Investigator(s): Sarah Rowe, Josh Rowe (S&ME, Inc.) **Section, Township, Range:** S T R
Landform (hillslope, terrace, etc.): Hillside **Local relief (concave, convex, none):** concave **Slope:** 0.0 % / 0.0 °
Subregion (LRR or MLRA): LRR N **Lat.:** 35.726278 **Long.:** -86.914801 **Datum:** NAD83
Soil Map Unit Name: Tb - Talbott silty clay, severely eroded sloping phase **NWI classification:** Upland

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 ☐ Hydric Soil Present? Yes ☐ No ☒ Wetland Hydrology Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☐ No ☒
Remarks: Upland point is located within an area shown as an open-water pond on historic aerial photographs. No inundation observed during the site visit, and soils within the depression are not hydric. Feature likely only holds rainfall for a short term.	

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) ☐ Surface Water (A1) ☐ True Aquatic Plants (B14) ☐ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☐ Saturation (A3) ☐ Oxidized Rhizospheres along Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☒ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)		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) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☒ FAC-neutral Test (D5)
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: A primary and secondary hydrology indicator present.		

VEGETATION (Five/Four Strata)- Use scientific names of plants.

				Dominant Species?		Indicator Status		Sampling Point: UpD	
Tree Stratum	(Plot size: 30 ft)	Absolute % Cover	Rel.Strat. Cover					Dominance Test worksheet:	
1.			☐	0.0%				Number of Dominant Species That are OBL, FACW, or FAC: 6 (A)	
2.			☐	0.0%				Total Number of Dominant Species Across All Strata: 6 (B)	
3.		0	☐	0.0%				Percent of dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)	
4.		0	☐	0.0%					
5.		0	☐	0.0%					
6.		0	☐	0.0%					
7.		0	☐	0.0%					
8.		0	☐	0.0%					
		0	= Total Cover						
Sapling-Sapling/Shrub Stratum (Plot size: 15 ft)								Prevalence Index worksheet:	
1. <i>Salix nigra</i>		10	☒	100.0%	OBL			Total % Cover of: Multiply by:	
2.			☐	0.0%				OBL species 30 x 1 = 30	
3.			☐	0.0%				FACW species 15 x 2 = 30	
4.			☐	0.0%				FAC species 25 x 3 = 75	
5.			☐	0.0%				FACU species 7 x 4 = 28	
6.		0	☐	0.0%				UPL species 0 x 5 = 0	
7.		0	☐	0.0%				Column Totals: 77 (A) 163 (B)	
8.		0	☐	0.0%				Prevalence Index = B/A = 2.117	
9.		0	☐	0.0%					
10.		0	☐	0.0%					
		10	= Total Cover					Hydrophytic Vegetation Indicators:	
Shrub Stratum (Plot size:)								☐ Rapid Test for Hydrophytic Vegetation	
1.		0	☐	0.0%				☒ Dominance Test is > 50%	
2.		0	☐	0.0%				☒ Prevalence Index is ≤ 3.0 ¹	
3.		0	☐	0.0%				☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
4.		0	☐	0.0%				☐ Problematic Hydrophytic Vegetation ¹ (Explain)	
5.		0	☐	0.0%				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
6.		0	☐	0.0%				Definition of Vegetation Strata:	
7.		0	☐	0.0%				Four Vegetation Strata:	
Herb Stratum (Plot size: 5 ft)								Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
1. <i>Xanthium strumarium</i>		10	☒	14.9%	FAC			Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
2. <i>Eleocharis obtusa</i>		10	☒	14.9%	OBL			Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.	
3. <i>Carex frankii</i>		10	☒	14.9%	OBL			Woody vines – Consists of all woody vines greater than 3.28 ft in height.	
4. <i>Rumex crispus</i>		15	☒	22.4%	FAC			Five Vegetation Strata:	
5. <i>Persicaria maculosa</i>		5	☐	7.5%	FACW			Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
6. <i>Bidens aristosa</i>		10	☒	14.9%	FACW			Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
7. <i>Ambrosia artemisiifolia</i>		5	☐	7.5%	FACU			Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
8. <i>Symphotrichum ericoides</i>		2	☐	3.0%	FACU			Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.	
9.		0	☐	0.0%				Woody vines – Consists of all woody vines, regardless of height.	
10.		0	☐	0.0%					
11.		0	☐	0.0%					
12.		0	☐	0.0%					
Woody Vine Stratum (Plot size:)		67	= Total Cover					Hydrophytic Vegetation Present? Yes ☒ No ☐	
1.		0	☐	0.0%					
2.		0	☐	0.0%					
3.		0	☐	0.0%					
4.		0	☐	0.0%					
5.		0	☐	0.0%					
6.		0	☐	0.0%					
		0	= Total Cover						
Remarks: (Include photo numbers here or on a separate sheet.)									
Vegetation within the depression consists of hydrophytic vegetation.									

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Sampling Point: UpD

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

[illegible]

¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (LRR N)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)

- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147,148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)
- ☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16)
(MLRA 147, 148)
- ☐ Piedmont Floodplain Soils (F19)
(MLRA 136, 147)
- ☐ 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 dominant hydric soil indicators observed at the upland data point. The depleted matrix is less than an inch thick and only observed within a 10-ft square area.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Brandywine Farm **City/County:** Nashville / Davidson **Sampling Date:** 12-Oct-21
Applicant/Owner: State Street Group **State:** TN **Sampling Point:** WA
Investigator(s): Sarah Rowe, Josh Rowe (S&ME, Inc.) **Section, Township, Range:** S T R
Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** rolling **Slope:** 0.0 % / 0.0 °
Subregion (LRR or MLRA): LRR N **Lat.:** 35.725277 **Long.:** -86.913082 **Datum:** NAD83
Soil Map Unit Name: Rb - Gladeville-Rock outcrop complex, 2-15% slopes, extremely stony **NWI classification:** Upland

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 ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Remarks: Wetland is located along the floodplain of S1 and originates at a groundwater seep.	

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) ☐ Surface Water (A1) ☐ True Aquatic Plants (B14) ☒ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☒ Saturation (A3) ☒ Oxidized Rhizospheres along Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)		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) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☒ FAC-neutral Test (D5)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☒ No ☐ Depth (inches): 1 Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 0		Wetland Hydrology Present? Yes ☒ No ☐
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Multiple hydrology indicators present.		

VEGETATION (Five/Four Strata)- Use scientific names of plants.

				Dominant Species?		Sampling Point: <u>WA</u>	
		Absolute % Cover	Rel.Strat. Cover	Indicator Status			
Tree Stratum (Plot size: <u>30 ft</u>)						Dominance Test worksheet:	
1.			☐ 0.0%			Number of Dominant Species That are OBL, FACW, or FAC: <u>2</u> (A)	
2.			☐ 0.0%				
3.		0	☐ 0.0%			Total Number of Dominant Species Across All Strata: <u>2</u> (B)	
4.		0	☐ 0.0%				
5.		0	☐ 0.0%			Percent of dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)	
6.		0	☐ 0.0%				
7.		0	☐ 0.0%				
8.		0	☐ 0.0%				
		0	= Total Cover				
Sapling-Sapling/Shrub Stratum (Plot size: <u>15 ft</u>)						Prevalence Index worksheet:	
1.			☐ 0.0%			<u> </u> Total % Cover of: <u> </u> Multiply by: <u> </u>	
2.			☐ 0.0%			OBL species <u>45</u> x 1 = <u>45</u>	
3.			☐ 0.0%			FACW species <u>15</u> x 2 = <u>30</u>	
4.			☐ 0.0%			FAC species <u>5</u> x 3 = <u>15</u>	
5.			☐ 0.0%			FACU species <u>10</u> x 4 = <u>40</u>	
6.		0	☐ 0.0%			UPL species <u>0</u> x 5 = <u>0</u>	
7.		0	☐ 0.0%			Column Totals: <u>75</u> (A) <u>130</u> (B)	
8.		0	☐ 0.0%			Prevalence Index = B/A = <u>1.733</u>	
9.		0	☐ 0.0%				
10.		0	☐ 0.0%				
		0	= Total Cover				
Shrub Stratum (Plot size: <u> </u>)						Hydrophytic Vegetation Indicators:	
1.			☐ 0.0%			☒ Rapid Test for Hydrophytic Vegetation	
2.			☐ 0.0%			☒ Dominance Test is > 50%	
3.			☐ 0.0%			☒ Prevalence Index is ≤3.0 ¹	
4.			☐ 0.0%			☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)	
5.		0	☐ 0.0%			☐ Problematic Hydrophytic Vegetation ¹ (Explain)	
6.		0	☐ 0.0%			¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	
7.		0	☐ 0.0%				
8.		0	☐ 0.0%				
9.		0	☐ 0.0%				
10.		0	☐ 0.0%				
		0	= Total Cover				
Herb Stratum (Plot size: <u>5 ft</u>)						Definition of Vegetation Strata:	
1.	<u>Carex frankii</u>	45	☒ 60.0%	OBL		Four Vegetation Strata:	
2.	<u>Persicaria maculosa</u>	15	☒ 20.0%	FACW		Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.	
3.	<u>Festuca arundinacea</u>	10	☐ 13.3%	FACU		Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.	
4.	<u>Conoclinium coelestinum</u>	5	☐ 6.7%	FAC		Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.	
5.			☐ 0.0%			Woody vines – Consists of all woody vines greater than 3.28 ft in height.	
6.		0	☐ 0.0%				
7.		0	☐ 0.0%				
8.		0	☐ 0.0%				
9.		0	☐ 0.0%				
10.		0	☐ 0.0%				
11.		0	☐ 0.0%				
12.		0	☐ 0.0%				
		75	= Total Cover			Five Vegetation Strata:	
1.		0	☐ 0.0%			Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).	
2.		0	☐ 0.0%			Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.	
3.		0	☐ 0.0%			Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.	
4.		0	☐ 0.0%			Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.	
5.		0	☐ 0.0%			Woody vines – Consists of all woody vines, regardless of height.	
6.		0	☐ 0.0%				
		0	= Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)						Hydrophytic Vegetation Present? Yes ☒ No ☐	
Wetland is a PEM dominated by hydrophytic herbaceous species.							

Soil

Sampling Point: WA

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

[illegible]

¹Type: C=Concentration. D=Depletion. RM=Reduced Matrix, CS=Covered or Coated Sand Grains ²Location: PL=Pore Lining. M=Matrix

Hydric Soil Indicators:

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ 2 cm Muck (A10) (LRR N)
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Sandy Muck Mineral (S1) (LRR N, MLRA 147, 148)
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)

- ☐ Dark Surface (S7)
- ☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
- ☐ Thin Dark Surface (S9) (MLRA 147, 148)
- ☐ Loamy Gleyed Matrix (F2)
- ☒ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- ☐ Umbric Surface (F13) (MLRA 136, 122)
- ☐ Piedmont Floodplain Soils (F19) (MLRA 148)
- ☐ Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils³:

- ☐ 2 cm Muck (A10) (MLRA 147)
- ☐ Coast Prairie Redox (A16)
(MLRA 147,148)
- ☐ Piedmont Floodplain Soils (F19)
(MLRA 136, 147)
- ☐ 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: Bedrock

Depth (inches): 10

Hydric Soil Present? Yes ☒ No ☐

Remarks:

Soils possessed a depleted matrix within the upper 12 inches.

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Brandywine Farm **City/County:** Nashville / Davidson **Sampling Date:** 12-Oct-21
Applicant/Owner: State Street Group **State:** TN **Sampling Point:** WB
Investigator(s): Sarah Rowe, Josh Rowe (S&ME, Inc.) **Section, Township, Range:** S T R
Landform (hillslope, terrace, etc.): Floodplain **Local relief (concave, convex, none):** rolling **Slope:** 0.0 % / 0.0 °
Subregion (LRR or MLRA): LRR N **Lat.:** 35.725277 **Long.:** -86.913082 **Datum:** NAD83
Soil Map Unit Name: Rb - Gladeville-Rock outcrop complex, 2-15% slopes, extremely stony **NWI classification:** Upland

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 ☐ Hydric Soil Present? Yes ☒ No ☐ Wetland Hydrology Present? Yes ☒ No ☐	Is the Sampled Area within a Wetland? Yes ☒ No ☐
Remarks: Wetland is located along the floodplain of S1 and originates at a groundwater seep.	

Hydrology

Wetland Hydrology Indicators: Primary Indicators (minimum of one required; check all that apply) ☐ Surface Water (A1) ☐ True Aquatic Plants (B14) ☒ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☒ Saturation (A3) ☒ Oxidized Rhizospheres along Living Roots (C3) ☐ Water Marks (B1) ☐ Presence of Reduced Iron (C4) ☐ Sediment Deposits (B2) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Drift deposits (B3) ☐ Thin Muck Surface (C7) ☐ Algal Mat or Crust (B4) ☐ Other (Explain in Remarks) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13)		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) ☐ Stunted or Stressed Plants (D1) ☒ Geomorphic Position (D2) ☐ Shallow Aquitard (D3) ☐ Microtopographic Relief (D4) ☒ FAC-neutral Test (D5)
Field Observations: Surface Water Present? Yes ☐ No ☒ Depth (inches): _____ Water Table Present? Yes ☒ No ☐ Depth (inches): 1 Saturation Present? (includes capillary fringe) Yes ☒ No ☐ Depth (inches): 0		Wetland Hydrology Present? Yes ☒ No ☐
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Multiple hydrology indicators present.		

VEGETATION (Five/Four Strata)- Use scientific names of plants.

				Sampling Point: <u>WB</u>	
Tree Stratum	(Plot size: <u>30 ft</u>)	Absolute % Cover	Dominant Species? Rel.Strat. Cover	Indicator Status	
1.			☐ 0.0%		
2.			☐ 0.0%		
3.		0	☐ 0.0%		
4.		0	☐ 0.0%		
5.		0	☐ 0.0%		
6.		0	☐ 0.0%		
7.		0	☐ 0.0%		
8.		0	☐ 0.0%		
		0	= Total Cover		
Sapling-Sapling/Shrub Stratum	(Plot size: <u>15 ft</u>)				
1.			☐ 0.0%		
2.			☐ 0.0%		
3.			☐ 0.0%		
4.			☐ 0.0%		
5.			☐ 0.0%		
6.		0	☐ 0.0%		
7.		0	☐ 0.0%		
8.		0	☐ 0.0%		
9.		0	☐ 0.0%		
10.		0	☐ 0.0%		
		0	= Total Cover		
Shrub Stratum	(Plot size: _____)				
1.		0	☐ 0.0%		
2.		0	☐ 0.0%		
3.		0	☐ 0.0%		
4.		0	☐ 0.0%		
5.		0	☐ 0.0%		
6.		0	☐ 0.0%		
7.		0	☐ 0.0%		
		0	= Total Cover		
Herb Stratum	(Plot size: <u>5 ft</u>)				
1. <u>Carex frankii</u>		40	☒ 50.0%	OBL	
2. <u>Persicaria maculosa</u>		15	☒ 18.8%	FACW	
3. <u>Mentha arvensis</u>		10	☐ 12.5%	FACW	
4. <u>Conoclinium coelestinum</u>		5	☐ 6.3%	FAC	
5. <u>Festuca arundinacea</u>		10	☐ 12.5%	FACU	
6.		0	☐ 0.0%		
7.		0	☐ 0.0%		
8.		0	☐ 0.0%		
9.		0	☐ 0.0%		
10.		0	☐ 0.0%		
11.		0	☐ 0.0%		
12.		0	☐ 0.0%		
		80	= Total Cover		
Woody Vine Stratum	(Plot size: _____)				
1.		0	☐ 0.0%		
2.		0	☐ 0.0%		
3.		0	☐ 0.0%		
4.		0	☐ 0.0%		
5.		0	☐ 0.0%		
6.		0	☐ 0.0%		
		0	= Total Cover		

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of: 40 Multiply by: 1

OBL species 40 x 1 = 40

FACW species 25 x 2 = 50

FAC species 5 x 3 = 15

FACU species 10 x 4 = 40

UPL species 0 x 5 = 0

Column Totals: 80 (A) 145 (B)

Prevalence Index = B/A = 1.813

Hydrophytic Vegetation Indicators:

☒ Rapid Test for Hydrophytic Vegetation

☒ Dominance Test is > 50%

☒ Prevalence Index is ≤ 3.0 ¹

☐ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)

☐ Problematic Hydrophytic Vegetation ¹ (Explain)

¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definition of Vegetation Strata:

Four Vegetation Strata:

Tree stratum – Consists of woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub stratum – Consists of woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb stratum – Consists of all herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 ft tall.

Woody vines – Consists of all woody vines greater than 3.28 ft in height.

Five Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling stratum – Consists of woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub stratum – Consists of woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb stratum – Consists of all herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody species, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vines – Consists of all woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ☒ No ☐

Remarks: (Include photo numbers here or on a separate sheet.)

Wetland is a PEM dominated by hydrophytic herbaceous species.

*Indicator suffix = National status or professional decision assigned because Regional status not defined by FWS.

Sampling Point: WB

US Army Corps of Engineers Eastern Mountains and Piedmont - Version 2.0



Knoxville, TN
81 °F Partly Cloudy (/weather/us/tn/knoxville/35.93,-84.05)

Mt. Juliet, TN
79 °F Mostly Cloudy (/weather/us/tn/mt-juliet/36.17,-86.51)

Recent Cities
Cleveland, TN (/weather/us/tn/cleveland/35.17,-84.89) Whittier, NC (28789) (/weather/us/nc/whittier/35.93,-84.05)

Webcam hosting service will be discontinued on October 21, 2021. [Read more about our decision here.](https://support.weather.com/s/article/Webcam-hosting-service-is-discontinued-effective-October-21-2021) (https://support.weather.com/s/article/Webcam-hosting-service-is-discontinued-effective-October-21-2021)

Elev 745 ft, 35.73 °N, 86.94 °W

MyWeatherStation - KTNSPRIN164 🇺🇸 ⓘ

FORECAST FOR SPRING HILL, TN (WEATHER/US/TN/SPRING-HILL/KTNSPRIN164)

Station Summary

Online(updated 12 seconds ago)

CURRENT CONDITIONS

MAP



80.2 °F
Feels Like 82.8 °

DEWPOINT
67.8 ° F

PRESSURE
29.76 in

PRECIP ACCUM
0.06 in

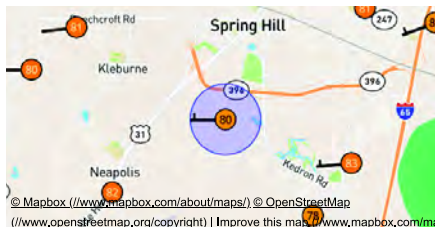


WIND & GUST
5.5 / 5.5 mph

PRECIP RATE
0.00 in/hr

HUMIDITY
66 %

UV
—



lat=35.725237&lon=-86.937667&zoom=13&tl.play=0&tl.spd=2&groupSevere=1&groupHurricane=1

PWS CURRENT CONDITIONS

TEMPERATURE ⓘ

WIND ⓘ

PRESSURE ⓘ



CURRENT
80°

DEWPOINT
67.8 °F
HUMIDITY
66 %



WIND FROM
WSW
GUST
5.5 mph

CURRENT
29.76 In

PRECIPITATION ⓘ

UV ⓘ



PRECIP RATE
0.00 in/hr
PRECIP TOTAL
0.06 in



UNAVAILABLE

THERE IS NO ASSOCIATED WEBCAM WITH
THIS STATION

Weather History for KTNSPRIN164

Monthly Mode

October

2021

View

Next

Previous

Summary

October 1, 2021 - October 31, 2021

	High	Low	Average
Temperature	89.4 °F	57.7 °F	71.0 °F
Dew Point	72.5 °F	56.8 °F	65.0 °F
Humidity	97 %	38 %	83 %
Precipitation	2.10 in	--	--
	High	Low	Average
Wind Speed	13.1 mph	0.0 mph	1.4 mph
Wind Gust	16.3 mph	--	1.5 mph
Wind Direction	--	--	South
Pressure	30.03 in	29.68 in	--

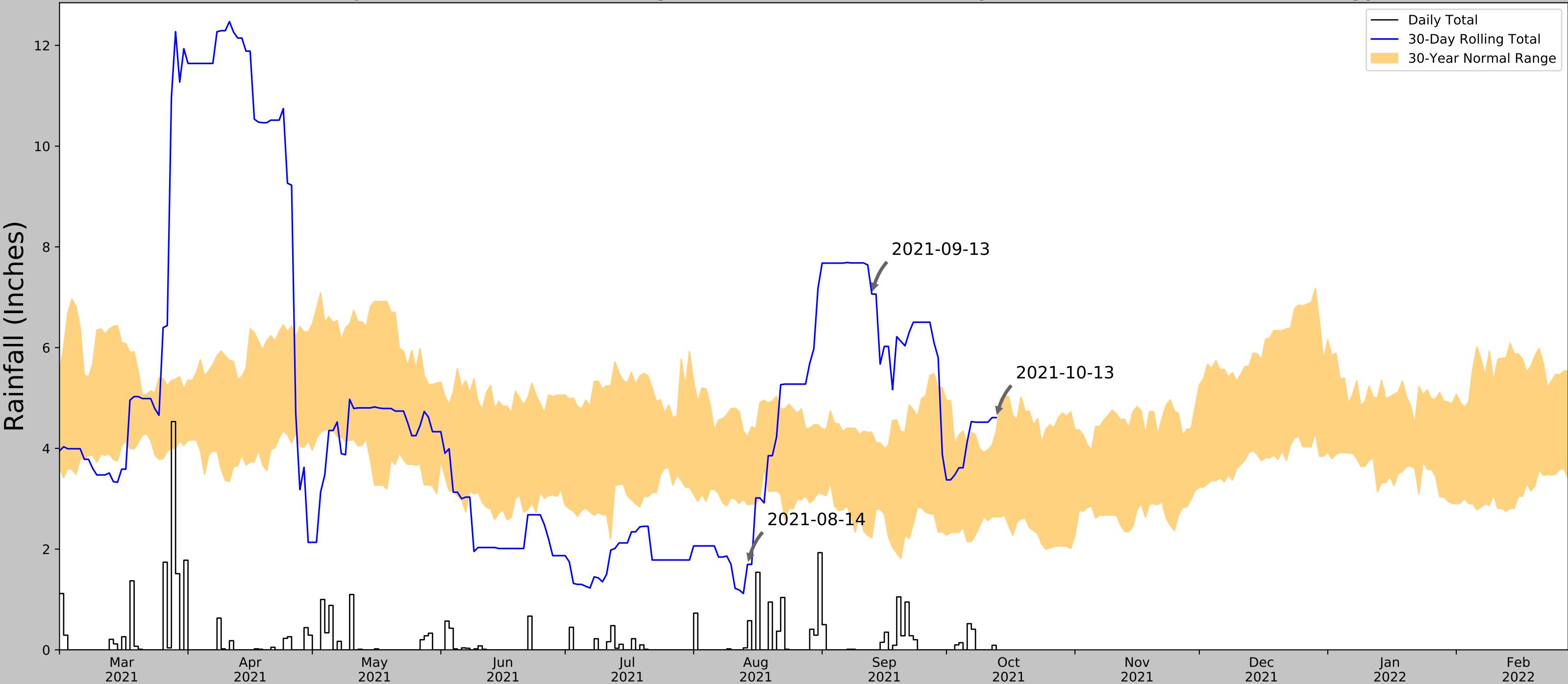
Graph

Table

October 1, 2021 - October 31, 2021

Date	Temperature			Dew Point			Humidity			Speed			Pressure		Precip. Accum.
	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Avg	Low	High	Low	Sum
10/1/2021	89.4 °F	75.0 °F	65.3 °F	70.8 °F	66.0 °F	59.9 °F	96 %	77 %	38 %	8.2 mph	0.7 mph	0.0 mph	30.03 in	29.97 in	0.00 in
10/2/2021	81.3 °F	70.3 °F	61.8 °F	70.3 °F	65.2 °F	60.8 °F	97 %	85 %	60 %	13.1 mph	1.3 mph	0.0 mph	30.03 in	29.91 in	0.47 in
10/3/2021	80.7 °F	71.5 °F	67.1 °F	71.2 °F	68.2 °F	66.2 °F	97 %	90 %	66 %	9.6 mph	1.5 mph	0.0 mph	29.91 in	29.76 in	0.29 in
10/4/2021	83.8 °F	70.7 °F	62.9 °F	69.2 °F	65.0 °F	59.0 °F	97 %	84 %	45 %	7.1 mph	0.9 mph	0.0 mph	29.88 in	29.79 in	0.00 in
10/5/2021	75.9 °F	67.1 °F	59.7 °F	69.2 °F	64.4 °F	58.8 °F	97 %	92 %	73 %	11.1 mph	1.6 mph	0.0 mph	29.94 in	29.85 in	1.10 in
10/6/2021	78.2 °F	68.8 °F	62.2 °F	71.0 °F	65.5 °F	60.8 °F	97 %	90 %	72 %	9.6 mph	3.0 mph	0.0 mph	30.00 in	29.88 in	0.17 in
10/7/2021	82.5 °F	69.4 °F	60.8 °F	70.3 °F	64.8 °F	59.7 °F	97 %	86 %	54 %	6.7 mph	1.1 mph	0.0 mph	30.00 in	29.88 in	0.01 in
10/8/2021	82.9 °F	68.6 °F	57.7 °F	68.0 °F	61.8 °F	56.8 °F	97 %	81 %	49 %	8.9 mph	1.1 mph	0.0 mph	29.97 in	29.88 in	0.00 in
10/9/2021	88.5 °F	71.8 °F	59.3 °F	68.7 °F	63.1 °F	58.4 °F	97 %	77 %	43 %	8.9 mph	1.0 mph	0.0 mph	29.94 in	29.82 in	0.00 in
10/10/2021	88.3 °F	73.3 °F	60.4 °F	68.7 °F	64.6 °F	59.3 °F	97 %	77 %	46 %	9.3 mph	1.2 mph	0.0 mph	29.88 in	29.76 in	0.00 in
10/11/2021	83.4 °F	72.4 °F	62.2 °F	67.4 °F	64.1 °F	61.1 °F	96 %	77 %	49 %	12.5 mph	2.6 mph	0.0 mph	29.82 in	29.68 in	0.00 in
10/12/2021	83.8 °F	71.9 °F	61.1 °F	69.8 °F	64.8 °F	59.7 °F	96 %	80 %	48 %	8.9 mph	1.7 mph	0.0 mph	29.91 in	29.76 in	0.00 in
10/13/2021	86.1 °F	72.6 °F	61.3 °F	71.7 °F	66.3 °F	59.9 °F	96 %	82 %	55 %	9.3 mph	1.1 mph	0.0 mph	29.91 in	29.82 in	0.00 in
10/14/2021	86.1 °F	72.9 °F	63.3 °F	70.1 °F	65.0 °F	62.0 °F	97 %	78 %	46 %	8.9 mph	0.8 mph	0.0 mph	29.91 in	29.79 in	0.00 in
10/15/2021	80.7 °F	68.8 °F	63.3 °F	72.5 °F	65.5 °F	61.8 °F	95 %	90 %	71 %	8.9 mph	1.3 mph	0.0 mph	29.82 in	29.76 in	0.06 in

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



Coordinates	35.723206, -86.910276
Observation Date	2021-10-13
Elevation (ft)	682.12
Drought Index (PDSI)	Extreme wetness (2021-09)
WebWIMP H ₂ O Balance	Wet Season

30 Days Ending	30 th %ile (in)	70 th %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2021-10-13	2.637795	4.340945	4.610236	Wet	3	3	9
2021-09-13	2.224016	4.32126	7.062992	Wet	3	2	6
2021-08-14	2.879134	4.223622	1.69685	Dry	1	1	1
Result							Wetter than Normal - 16



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)
FRANKLIN SEWAGE PLT	35.9417, -86.8686	654.856	15.276	27.264	7.291	11293	87
NEAPOLIS RES & EDU STN	35.7197, -86.9653	700.131	3.096	18.011	1.449	43	0
SPRING HILL 2.8 ENE	35.7593, -86.8783	741.142	3.072	59.022	1.564	7	0
THOMPSON STN	35.7636, -86.9322	774.934	3.05	92.814	1.655	7	0
SPRING HILL 3.2 NE	35.7779, -86.8881	771.982	3.978	89.862	2.148	3	3