



May 31, 2022

Tennessee Department of Environment and Conservation
Division of Water Resources – Nashville Environmental Field Office
711 E.S. Gass Boulevard
Nashville, Tennessee 37216

Attention: **Virginia Lawrence**

Subject: **HD ID No. 31105 – Response to Informal Request for Additional Information**
Bellamy Property
Clarksville, Montgomery County, Tennessee
Latitude 36.609700° North and Longitude -87.242000° West
Project No. 3619-001-30

Via email to: Virginia.Lawrence@tn.gov

Virginia,

Spectrum Environmental, Inc. (Spectrum) appreciates the opportunity to provide this correspondence. This information is provided in response to an email received from the Tennessee Department of Environment and Conservation (TDEC) on May 6, 2022. In this email, TDEC requested additional information pertaining to the Hydrologic Determination performed by Spectrum at the Bellamy Property in Clarksville, Montgomery County, Tennessee. Additional information requested included:

- Datasheets for the mapped but unassessed upland drainage features (UDFs);
- Additional information of a potential wetland associated with the upper portion of Wet Weather Conveyance 3 (WWC3); and
- Documentation demonstrating a lack of groundwater connection for Pond 2.

On May 13, 17, and 20, 2022, Spectrum personnel (Marian Rubin and Kari Kennel) reevaluated the site and collected data pertaining to the information requested. Photographs of these site evaluations are included in Appendix A. According to data obtained from Weather Underground, the closest weather station (KTNCLARK47) indicated that the site received the following precipitation prior to the site visits:

www.specenviro.com

Corporate Office
Alabaster, AL
(205) 664-2000

Mid-South Office
Nashville, TN
(615) 469-4941

Gulf Coast Office
Baldwin County, AL
(251) 923-4352

Date	Precipitation 2-days Prior	Precipitation 7-days Prior
May 13, 2022	0.0"	0.02"
May 17, 2022	0.08"	0.42"
May 20, 2022	0.0"	0.42"

Using the TDEC – Department of Water Resources (DWR) HD Guidance Version 1.5 (April 2020), calculated Weather Conditions indicate that the prior period has been normal. A copy of the Normal Weather Conditions calculation is included in Appendix B.

The following was determined based on observations made in the field:

- Data was collected on Upland Drainage feature 1 (UDF1), UDF3, and UDF4. Hydrologic Determination Field Data Sheets are included in Appendix C.
- Data was collected from five additional upland points and three wetland points. These Wetland Determination Data Forms are included in Appendix D. Based on the hydric soils, hydrophytic vegetation, and hydrology indicators the boundary of Wetland D (Wet D) was extended in a linear manner along points D4, D5, and D6. This increased the size of Wet D by an additional 0.08 acres (Figure 1). Furthermore, additional data points (Up J, Up K, Up M, Up N, and Up O) suggest the linear wetland is confined to this area prior to the transition to WWC3.
- Pond 2 is an artificial pond excavated in the upland within the southwestern portion of the Survey Area. This pond measures approximately 0.18 acres and receives runoff from the adjacent upland to the north. During the 2021 site visits (September 13, November 8, and November 15, 2021), water was observed within the confines of the pond. However, it was noted the pond lacked connection to natural surface water features. A follow-up site visit on May 17, 2022, was conducted to determine if artificial Pond 2 had direct connectivity with groundwater. To aid in determining this, three (3) soil borings were advanced to depths of at least 30" below surface in areas adjacent to Pond 2 (Figure 2).
 - o Boring 1 (B1) – located immediately northeast of Pond 2, downgradient
 - o Boring 2 (B2) – located immediately northwest of Pond 2, crossgradient
 - o Boring 3 (B3) – located immediately southeast of Pond 2, upgradient

Groundwater was not encountered during the advancement of these borings. After a half hour, the borings were reevaluated. Groundwater was not observed in B1 or B2. Groundwater had infiltrated into B3 at 26" below the soil surface.

Additionally, vegetation data was collected along the eastern edge of Pond 2:

- o Hairy buttercup (*Ranunculus sardous*) – FAC
- o Caley pea (*Lathyrus hirsutus*) – FAC
- o Curly dock (*Rumex crispus*) – FAC
- o Blue field-madder (*Sherardia arvensis*) – UPL
- o Meadow barley (*Hordeum brachyantherum*) – FAC
- o Cleavers (*Galium aparine*) – FACU
- o Devil’s beggarticks (*Bidens frondose*) – FACW
- o Blunt Spikerush (*Eleocharis obtusa*) - OBL
- o Carolina geranium (*Geranium carolinianum*) – UPL
- o Frostweed (*Verbesina virginica*) – UPL
- o Horseweed (*Erigeron canadensis*) – FACU
- o Perennial ryegrass (*Lolium perenne*) – FACU
- o Common vetch (*Vicia sativa*) – FACU

Utilizing the dominance test, 46.2% of the vegetative species identified are classified as OBL, FACW, or FAC and therefore would not collectively be considered hydrophytic vegetation.

This data supports the determination that Pond 2 is an artificial pond lacking connectivity to groundwater. Further, Pond 2 was observed to only capture non-point source surface water runoff from the adjacent upland. Although SB3 exhibited moisture in the basal portion of the boring, we do not believe this is reflective perched groundwater and depicts localized dewatering of pore spaces in the shallow sub-surface.

Based on observations made in the field, updated delineation maps are provided as Figures 3a – 3d. Additionally, the updated Delineation Summary Table is included below:

Site ID	Start Lat/Long	End Lat/Long	Total Mapped		Average Width at OHWM (ft)	Type of aquatic resource	Jurisdictional Authority
			LF	Acres			
WWC1	36.608101, -87.243955	36.608157, -87.244138	64	0.003	2	WWC	N/A
WWC2	36.608291, -87.244641	36.608213, -87.244746	42	0.002	2	WWC	N/A
WWC3	36.607174, -87.239405	36.615177, -87.240736	4,302	0.37	3.75	WWC	N/A
WWC4	36.615342, -87.241027	36.615269, -87.24133	105	0.01	3	WWC	N/A
WWC5	36.614951, -87.24202	36.61527, -87.241329	285*	0.01	2	WWC	N/A
WWC6	36.610847, -87.23905	36.61527, -87.241329	104	0.005	2	WWC	N/A

Site ID	Start Lat/Long	End Lat/Long	Total Mapped		Average Width at OHWM (ft)	Type of aquatic resource	Jurisdictional Authority
			LF	Acres			
WWC7	36.611000, -87.238549	36.611055, -87.237833	217	0.01	2.5	WWC	N/A
UDF1	36.608062, -87.243809	36.608084, -87.243887	45**	-	-	UDF	N/A
UDF2	36.605841, -87.243684	36.607436, -87.243994	617	-	-	UDF	N/A
UDF3	36.610898, -87.239213	36.611002, -87.23942	72	-	-	UDF	N/A
UDF4	36.611189, -87.239922	36.611548, -87.240527	247	-	-	UDF	N/A
Wet A	36.608319, -87.244493	-	-	0.003	-	Linear Wetland	TDEC
Wet B	36.605068, -87.24301	-	-	1.1	-	Fringe Wetland	TDEC
Wet C	36.610939, -87.238732	-	-	0.17	-	Forested Wetland	TDEC
Wet D	36.608188, -87.236491	-	-	6.92***	-	Emergent/Forested Wetland	TDEC
Pond 1	36.608184, -87.244351	-	-	0.18	-	Open Water Pond	TDEC
Pond 2	36.607258, -87.242035	-	-	0.18	-	Open Water Pond	N/A
Pond 3	36.605454, -87.24337	-	-	0.70	-	Open Water Pond	TDEC
Pond 4	36.607893, -87.237689	-	-	0.13	-	Open Water Pond	TDEC

*This length includes 50 LF of a previously piped section of WWC5

**This length includes 20 LF of a previously piped section of UDF1

***Previously delineated as 6.84 acres; Wet D is the only feature that has been modified

Conclusion

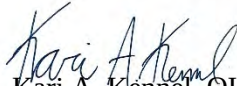
Based on observations made in the field during our re-evaluation, Spectrum has determined the following and request TDEC concur with these findings:

1. UDF1, UDF 3, and UDF4 are upland drainage features that scored as wet weather conveyances utilizing the HD Data Sheets;
2. A feature previously classified as a WWC has been recharacterized as a linear wetland based on the hydric soils, hydrophytic vegetation, and hydrology indicators observed in association with wetland data points Wet D4, Wet D5, and Wet D6. Wetland D (Wet D) was extended as a linear wetland for 0.08 acres along the channel of WWC3; and

3. Pond 2 is an artificial pond lacking connectivity to groundwater based on the data collected from three soil borings advanced around the perimeter of the pond. Further, Pond 2 was observed to only capture non-point source surface water runoff from the adjacent upland. We believe there is sufficient data that supports a non-jurisdictional determination for Pond 2, and therefore request TDEC concur with these findings.

We appreciate your consideration of this submittal and thank you for your assistance through this process. If you have any questions or need additional information, please feel free to contact Kari Kennel at (901)-831-3565 (kkennel@specenviro.com) or Marian Rubin at (615)-613-2066 (mrubin@specenviro.com).

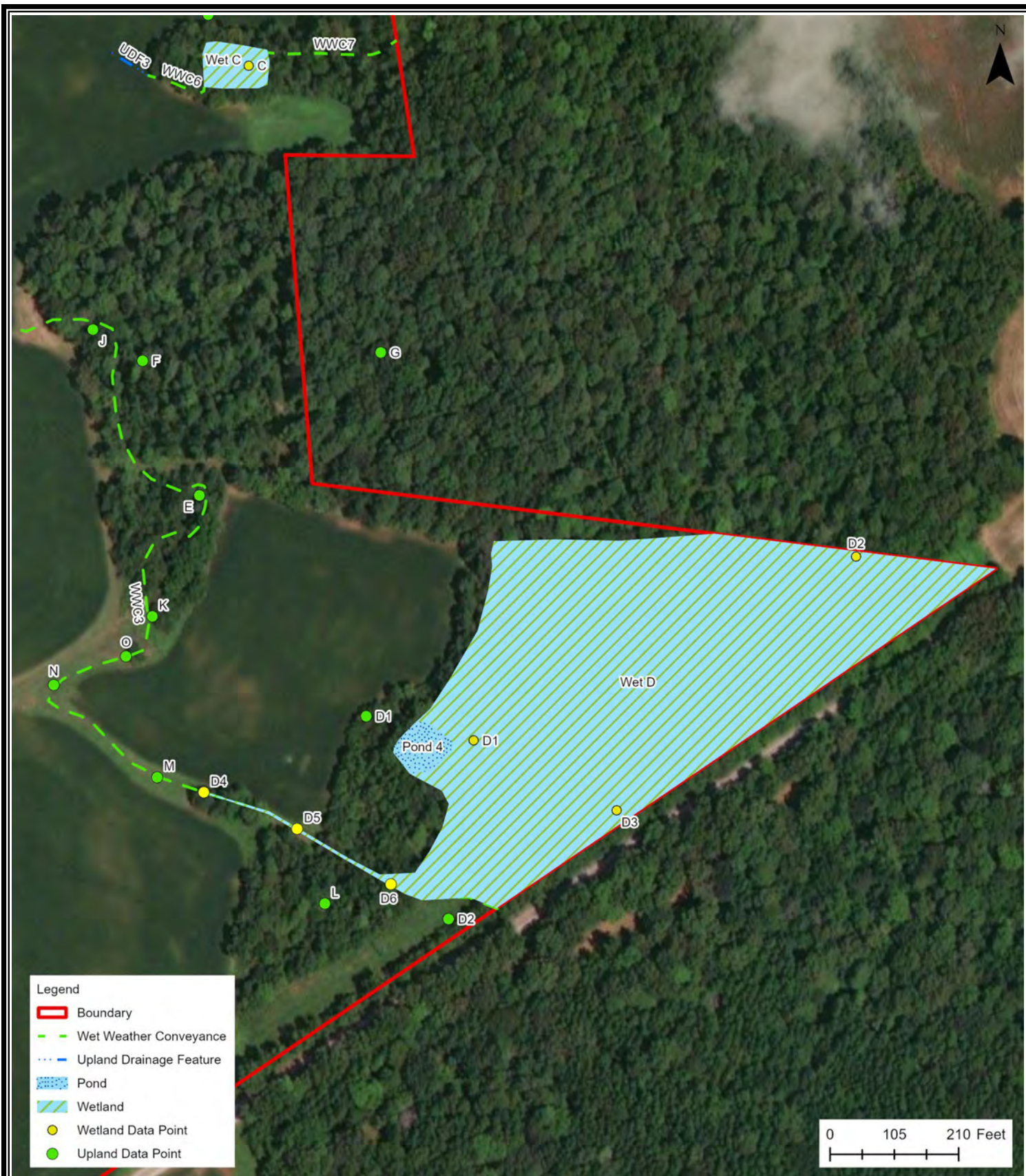
Sincerely,
SPECTRUM ENVIRONMENTAL, INC.


Kari A. Kennel, QHP-IT
Staff Scientist


Marian R. Rubin, QHP-IT
Nashville Division Manager
Natural Resource Biologist

Enclosure – Figures and Appendices

FIGURES



Source: Image courtesy of ESRI.

NO.	DATE	REVISION NOTE	BY

Drawn By:	Client #:
KK	3619
Checked By:	Date:
MR	5/23/2022
Project Mgr.:	Project #:
MR	3619-001-30

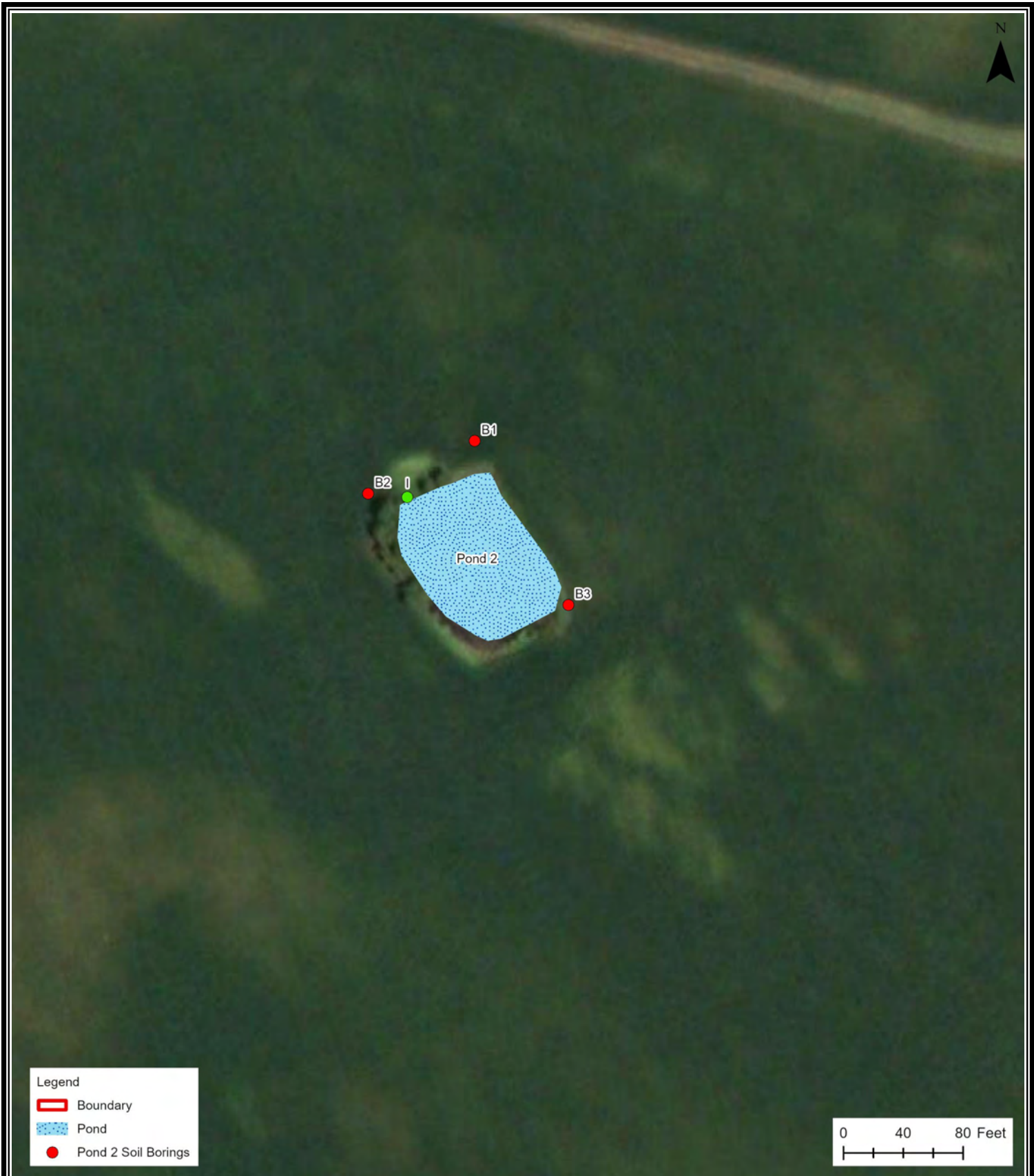
901 Woodland Street
Suite 104
Nashville, TN 37206
P - 615-469-4941



85 Spectrum Cove
Alabaster, AL 35007
O - 205-664-2000
F - 205-664-2142

TITLE

Figure 1 — Site Delineation Overview
Hydrologic Determination
Provident Realty Advisors
Bellamy Property
Clarksville, Montgomery County, Tennessee



Source: Image courtesy of ESRI.

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Drawn By:	Client #:
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Project Mgr.:	Project #:
MR	3619-001-30

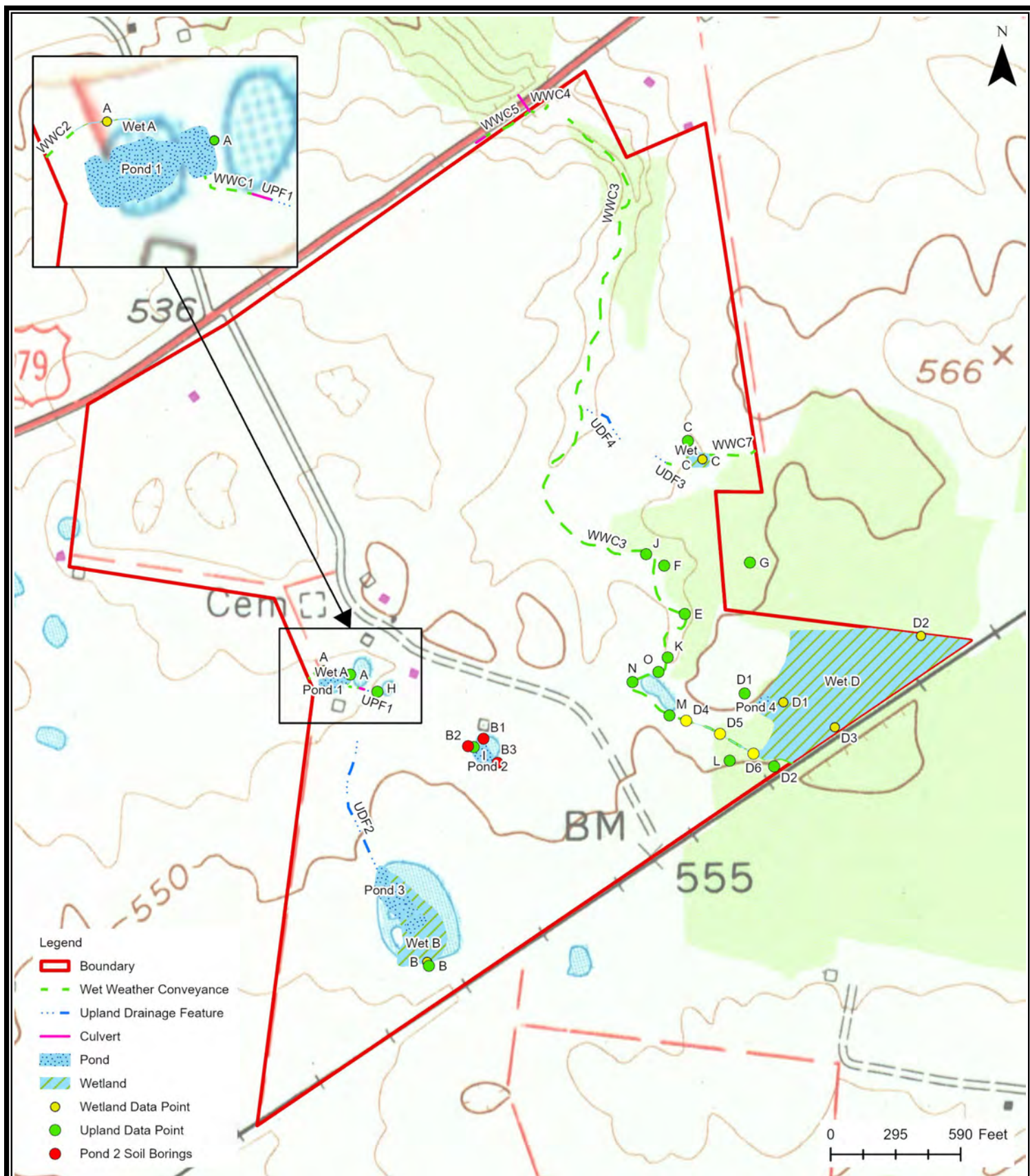
901 Woodland Street
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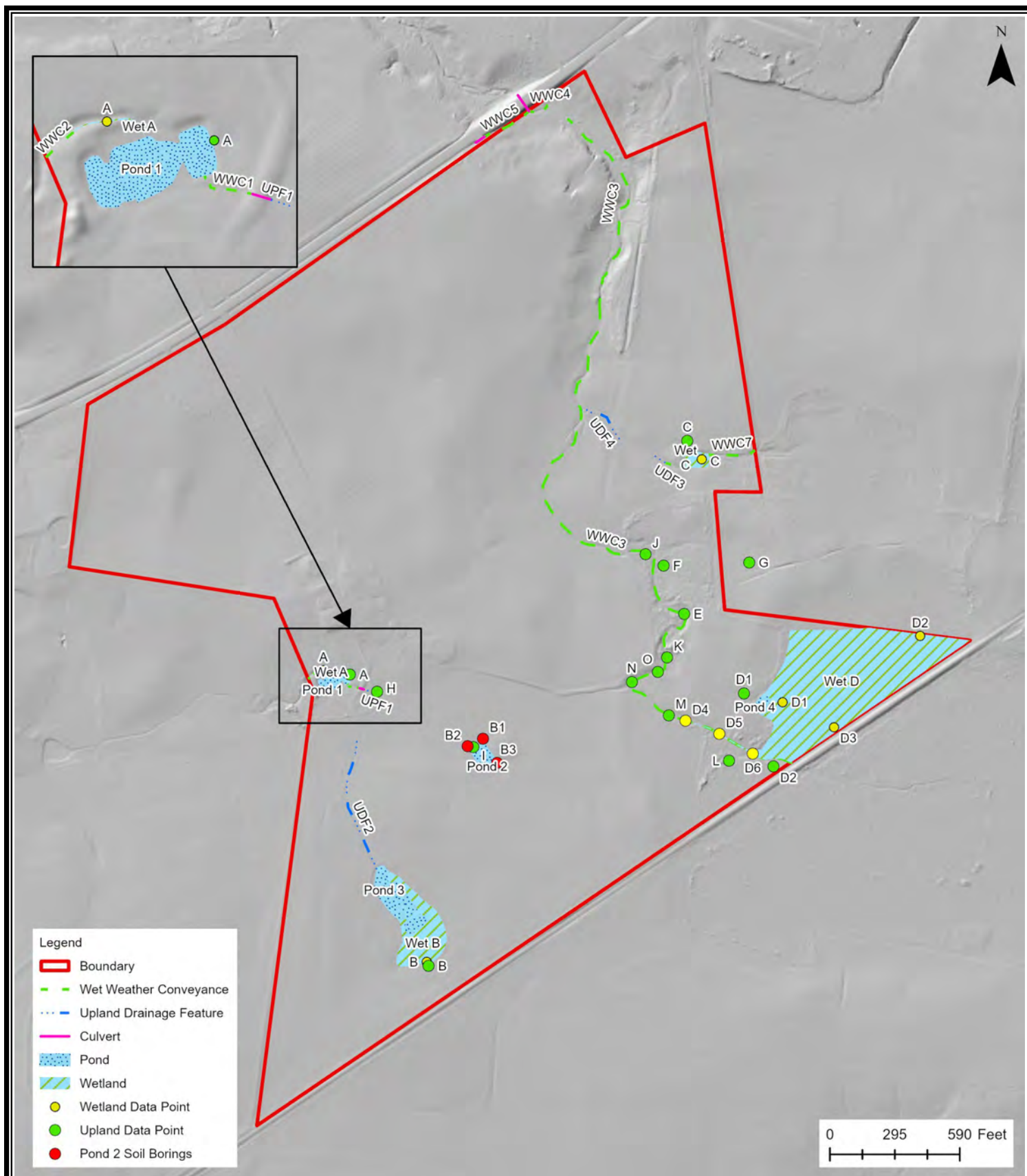
SPECTRUM
Solutions to Your Environmental Challenges

TITLE
Figure 2 — Site Delineation Overview Hydrologic Determination Provident Realty Advisors Bellamy Property Clarksville, Montgomery County, Tennessee



Source: Image courtesy of ESRI and USGS. USGS Hopkinsville, TN 7.5 minute quadrangle.

				Drawn By:	Client #:	901 Woodland Street Suite 104 Nashville, TN 37206 P - 615-469-4941  85 Spectrum Cove Alabaster, AL 35007 O - 205-664-2000 F - 205-664-2142	TITLE Figure 3a — Site Delineation Overview Hydrologic Determination Provident Realty Advisors Bellamy Property Clarksville, Montgomery County, Tennessee				
				KK	3619						
				Checked By:	Date:						
				MR	5/23/2022						
				Project Mgr.:	Project #:						
NO.	DATE	REVISION NOTE	BY	MR	3619-001-30						



Source: Image courtesy of ESRI and USGS.

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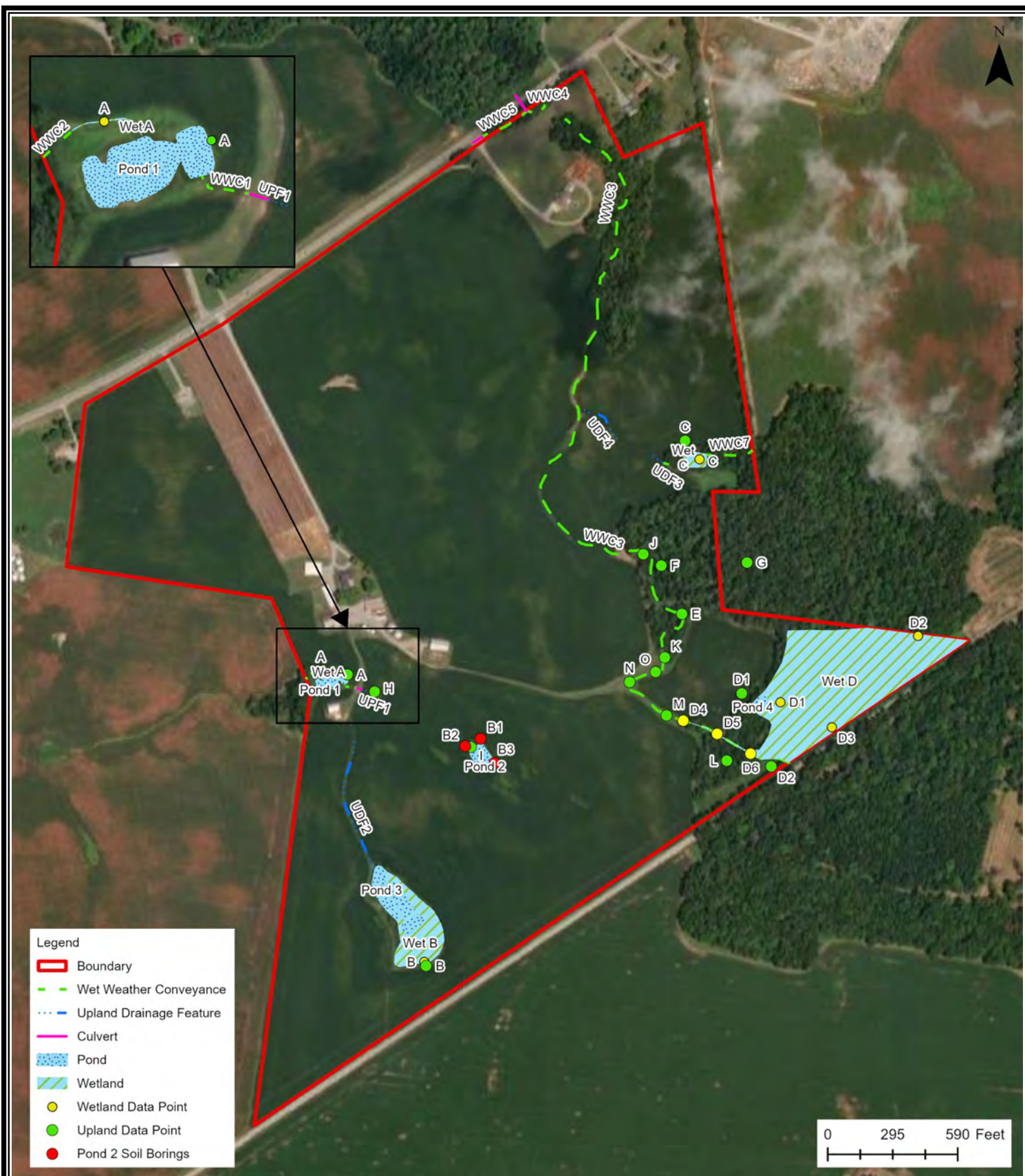
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TITLE

Figure 3b — Site Delineation Overview
Hydrologic Determination
Provident Realty Advisors
Bellamy Property
Clarksville, Montgomery County, Tennessee



Source: Image courtesy of ESRI.

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TITLE

Figure 3c — Site Delineation Overview
Hydrologic Determination
Provident Realty Advisors
Bellamy Property
Clarksville, Montgomery County, Tennessee

Site ID	Start/Mid Lat, Long (Decimal Degrees)		End Lat, Long (Decimal Degrees)		Total Mapped		Average Width at OHWM	Type
	Latitude	Longitude	Latitude	Longitude	LF	Acre		
WWC1	36.608101	-87.243955	36.608157	-87.244138	64	0.003	2	Wet Weather Conveyance
WWC2	36.608291	-87.244641	36.608213	-87.244746	42	0.002	2	Wet Weather Conveyance
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WWC6	36.610847	-87.238903	36.610899	-87.239216	104	0.005	2	Wet Weather Conveyance
WWC7	36.611000	-87.238549	36.611055	-87.237833	217	0.01	2.5	Wet Weather Conveyance
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UDF3	36.610898	-87.239213	36.611002	-87.23942	72	-	-	Upland Drainage Feature
UDF4	36.611189	-87.239922	36.611548	-87.240527	247	-	-	Upland Drainage Feature
Pond 1	36.608184	-87.244351	-	-	-	0.18	-	Open Water Pond
Pond 2	36.607258	-87.242035	-	-	-	0.18	-	Open Water Pond
Pond 3	36.605454	-87.24337	-	-	-	0.70	-	Open Water Pond
Pond 4	36.607893	-87.237689	-	-	-	0.13	-	Open Water Pond
Wet A	36.608319	-87.244493	-	-	-	0.003	-	Linear Wetland
Wet B	36.605068	-87.24301	-	-	-	1.1	-	Fringe Wetland
Wet C	36.610939	-87.238732	-	-	-	0.17	-	Forested Wetland
Wet D	36.608188	-87.236491	-	-	-	6.92	-	Emergent/Forested Wetland

*Includes 50 LF of a previously piped section of WWC5

**Includes 20 LF of a previously piped section of UDF1

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TITLE
Figure 3d — Site Delineation Table Hydrologic Determination Provident Realty Advisors Bellamy Property Clarksville, Montgomery County, Tennessee

APPENDIX A

Site Reconnaissance Photographs

Site Reconnaissance Photographs—May 13, 2022

Photo Index Map

Site Reconnaissance Photographs—May 13, 2022



UDF1 facing downstream towards culvert



UDF1 facing upstream

Site Reconnaissance Photographs—May 13, 2022



UDF4 facing downstream towards WW3 at top of feature



UDF4 facing downstream towards WW3 at bottom of feature

Site Reconnaissance Photographs—May 13, 2022



UDF3 facing downstream towards WWC6



UDF3 facing upstream

Site Reconnaissance Photographs—May 13, 2022



Up J soils



Up J soils

Site Reconnaissance Photographs—May 13, 2022



Area around Up J soil pit facing northwest



Area around Up J soil pit facing southeast

Site Reconnaissance Photographs—May 13, 2022



Up K soils



Up K soils

Site Reconnaissance Photographs—May 13, 2022



Area around Up K soil pit facing southeast



Area around Up K soil pit facing northwest

Site Reconnaissance Photographs—May 13, 2022



WW3 facing upstream —Area in between Up K and Wet D4 soil pits



Wet D4 soils

Site Reconnaissance Photographs—May 13, 2022



Wet D4 soils



Area around Wet D4 soil pit facing northwest

Site Reconnaissance Photographs—May 13, 2022



Area around Wet D4 soil pit facing southeast

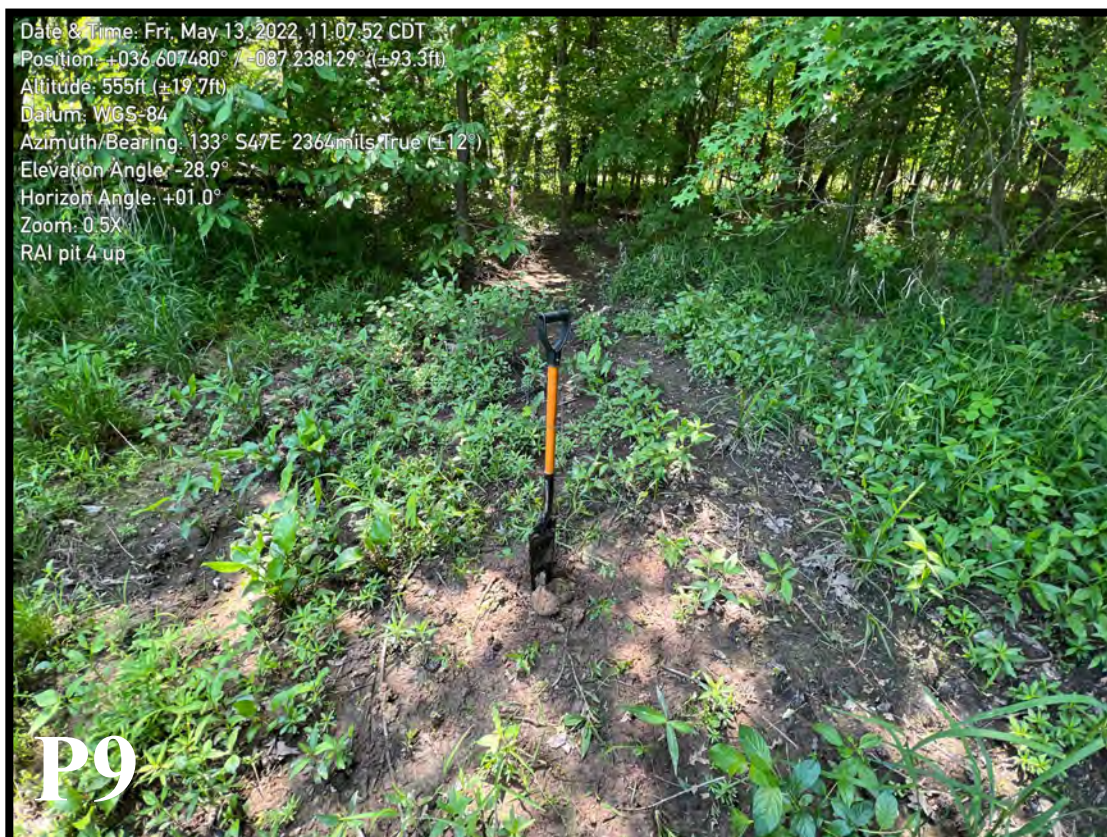


Wet D5 soils

Site Reconnaissance Photographs—May 13, 2022



Wet D5 soils



Area around Wet D5 soil pit facing southeast

Site Reconnaissance Photographs—May 13, 2022



Area around Wet D5 soil pit facing northwest



Wet D6 soils

Site Reconnaissance Photographs—May 13, 2022



Wet D6 soils



Area around Wet D6 soil pit facing southeast

Site Reconnaissance Photographs—May 13, 2022



Area around Wet D6 soil pit facing southwest



Crayfish burrow near Wet D6

Site Reconnaissance Photographs—May 13, 2022



Up L soils



Up L soils

Site Reconnaissance Photographs—May 13, 2022



Area around Up L soil pit facing southeast



Up M soils

Site Reconnaissance Photographs—May 13, 2022



Up M soils



Area around Up M soil pit facing southeast

Site Reconnaissance Photographs—May 13, 2022



Area around Up M soil pit facing northwest

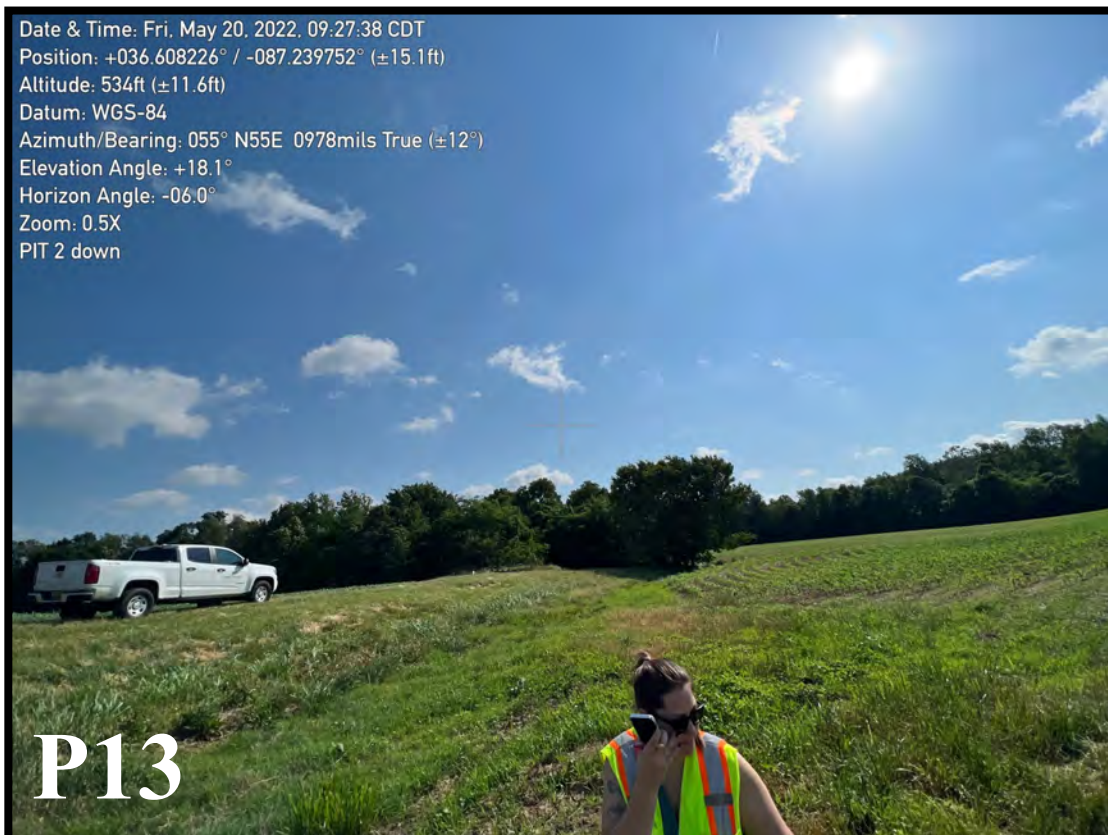


Up N soils

Site Reconnaissance Photographs—May 13, 2022

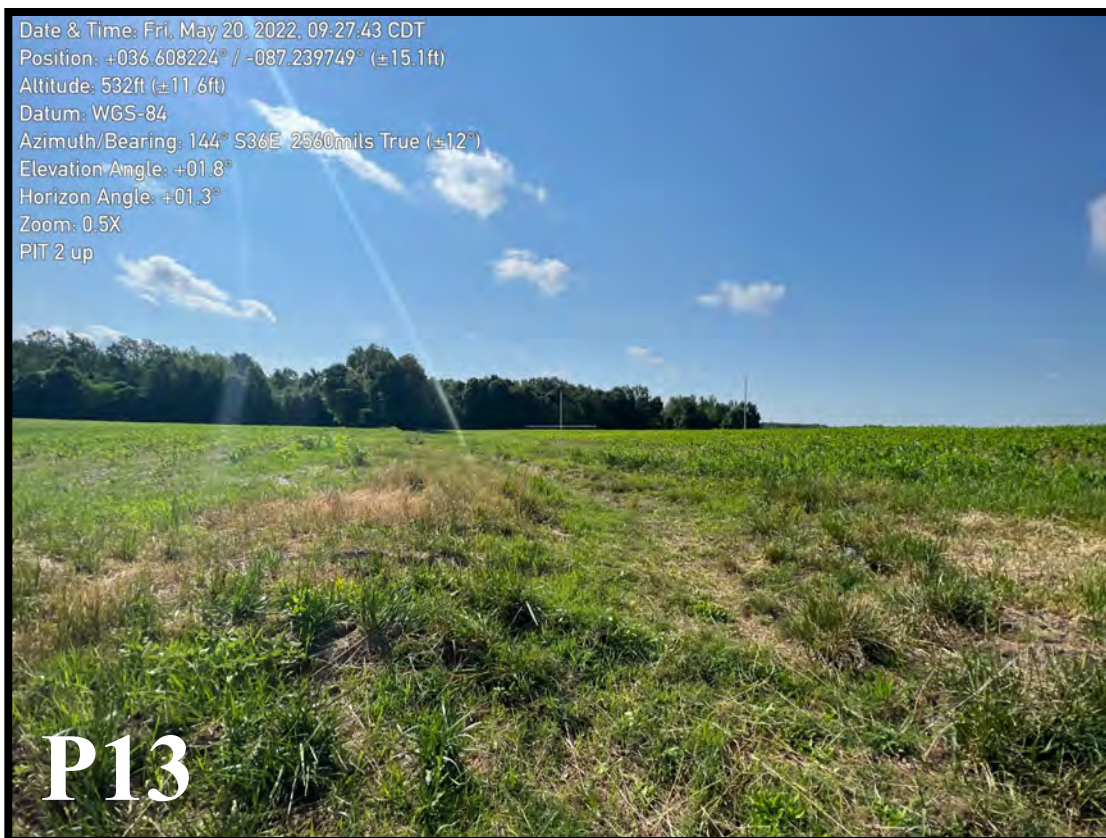


Up N soils



Area around Up M soil pit facing northeast

Site Reconnaissance Photographs—May 13, 2022



Area around Up M soil pit facing southeast



Up O soils

Site Reconnaissance Photographs—May 13, 2022

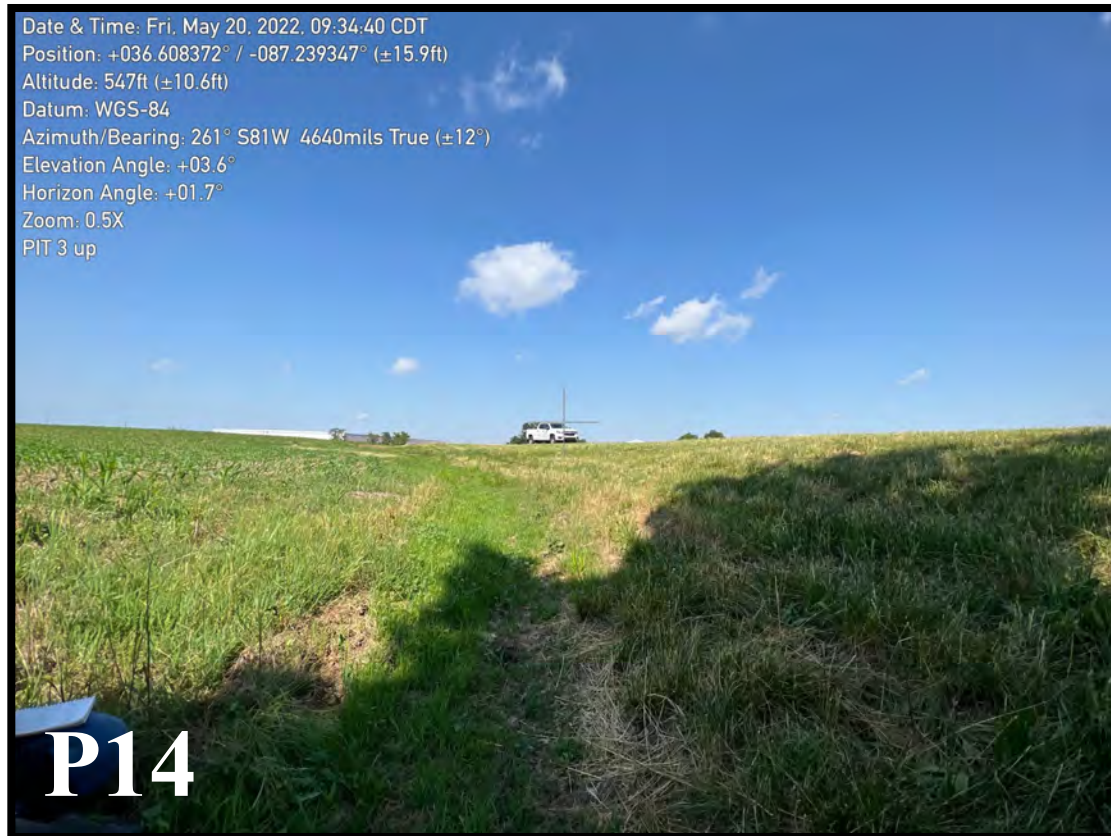


Up O soils



Area around Up O soil pit facing northeast

Site Reconnaissance Photographs—May 13, 2022



Area around Up O soil pit facing southwest



Soils from Boring 1 (B1) located immediately northeast of Pond 2

Site Reconnaissance Photographs—May 13, 2022



B1 located immediately northeast of Pond 2



B1 located immediately northeast of Pond 2 facing north

Site Reconnaissance Photographs—May 13, 2022



Soils from Boring 2 (B2) located immediately northwest of Pond 2



B2 located immediately northwest of Pond 2

Site Reconnaissance Photographs—May 13, 2022



B2 located immediately northwest of Pond 2 facing southeast



Soils from Boring 3 (B3) located immediately southeast of Pond 2

Site Reconnaissance Photographs—May 13, 2022



B3 located immediately southeast of Pond 2



B3 located immediately southeast of Pond 2 facing northwest

APPENDIX B

Calculation of Normal Weather Conditions

Table 1. Calculation of Normal Weather Conditions / Bellamy Property -Clarksville, TN - May 2022

		Long-term Rainfall Records								
	Month	Std. Dev.	Minus one Std. Dev (DRY)	Normal (Mean Inches)	Plus One Std. Dev. (WET)	Actual Rainfall*	Condition	Condition Value	Month Weight Value	Product of Previous two columns
1st month prior	Apr-22	1.9	2.27	4.17	6.07	4.8	Normal	2	3	6
2nd Month prior	Mar-22	2.62	2.46	5.08	7.7	3.7	Normal	2	2	4
3rd month prior	Feb-22	2.27	1.95	4.22	6.49	5.99	Normal	2	1	2
									Sum	12

Note:	
If sum is:	
6-9	then prior period has been drier than normal
10-14	then prior period has been normal
15-18	then prior period has been wetter than normal

Condition Value	
Dry =	1
Normal =	2
Wet=	3

Conclusions: Actual rainfall obtained from weather underground station KTNLARK47 (Terraces of Hearthstone)

Monthly percipitation standard deviation and mean sourced from NOAA PSL - Clarksville (1991-2020)

Date of field work 5/13/2022

Weather conditions prior to this period have been normal.

APPENDIX C

Tennessee Department of Environment and Conservation Hydrologic Determination Field Data Sheets

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

5/13/22

Named Waterbody: <u>UDF1</u>		Date/Time: <u>9:30am</u>
Assessors/Affiliation: <u>Marian Rubin (owner) & Kevin Kneel (owner) Spectrum Environmental</u>		Project ID: <u>3619-001-80</u>
Site Name/Description: <u>Bellamy</u>		
Site Location: <u>Guthrie Hwy, Clarksville</u>		
HUC (12 digit): <u>051302060603 (Spring Creek)</u>	Lat: <u>36.608115</u>	
Previous Rainfall (7-days): <u>0.22"</u>	Long: <u>-87.243821</u>	
Precipitation this Season vs. Normal: <u>abnormally wet</u> <u>elevated</u> <u>average</u> <u>low</u> <u>abnormally dry</u> <u>unknown</u>		
Source of recent & seasonal precip data: <u>KTNCLARK 47 / NOAA</u>		
Watershed Size: <u>N ± 80 acres (stream stats)</u>	County: <u>Montgomery</u>	
Soil Type(s) / Geology: <u>Guthrie silt loam / St. Genevieve Limestone</u>		Source: <u>WSS/USGS</u>
Surrounding Land Use: <u>Agricultural; Commercial development to the West</u>		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes): Severe <u>Moderate</u> Slight Absent		

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	☒	<u>WWC</u>
3. Watercourse dry anytime during February through April 15th, under normal precipitation / groundwater conditions	☒	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-WPC Guidance For Making Hydrologic Determinations, Version 1.5

Overall Hydrologic Determination = <u>WWC (upland Drainage feature)</u>
Secondary Indicator Score (if applicable) = <u>N/A</u>

Justification / Notes: <u>Veg - White clover (<i>Trifolium repens</i>) - FACU</u>	<u>7 days previous rain</u>
<u>Horde weed (<i>Eriogon canadensis</i>) - FACU</u>	<u>5/13 - 0"</u>
<u>Nodding Thistle (<i>Carduus nutans</i>) - UPL</u>	<u>5/12 - 0"</u>
<u>Slender yellow wood sorrel (<i>Oxalis dillenii</i>) - FACU</u>	<u>5/11 - 0"</u>
<u>Wheat (<i>Triticum aestivum</i>) - UPL</u>	<u>5/10 - 0"</u>
<u>Annual ragweed (<i>Ambrosia artemisiifolia</i>) - FACU</u>	<u>5/9 - 0.05"</u>
<u>Annual bluegrass (<i>Poa annua</i>) - FACU</u>	<u>5/8 - 0"</u>
<u>chd lat/long: 36.608136, -87.243897</u>	<u>5/7 - 0.05"</u>
	<u>5/6 - 0.12"</u>
	<u>Total: 0.22"</u>

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

5/13/22

Named Waterbody: UDF 4		Date/Time: 10:00am
Assessors/Affiliation: Marian Rubin (QHP-IT) & Kari Kennel (QHP-IT) Spectrum Environmental		Project ID: 3619-001-30
Site Name/Description: Bellamy		
Site Location: Guthrie HWY, Clarksville		
HUC (12 digit): 0513 02060603 (Spring Creek)		Lat: 36.611242
Previous Rainfall (7-days): 0.22"		Long: -87.239937
Precipitation this Season vs. Normal: abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data: KTN Clark 47 NOAA		
Watershed Size: N ± 40 acres (Stream Stats)		County: Montgomery
Soil Type(s) / Geology: Lindell silt loam / st. Genevieve Limestone		Source: WSS/USGS
Surrounding Land Use: Agricultural		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes): Severe Moderate Slight Absent		

→ Ag Land Use

Primary Field Indicators Observed

Primary Indicators	NO	YES
1. Hydrologic feature exists solely due to a process discharge	X	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	X	WWC
4. Daily flow and precipitation records showing feature only flows in direct response to rainfall	X	WWC
5. Presence of multiple populations of obligate lotic organisms with ≥ 2 month aquatic phase	X	Stream
6. Presence of fish (except <i>Gambusia</i>)	X	Stream
7. Presence of naturally occurring ground water table connection	X	Stream
8. Flowing water in channel and 7 days since last precip >0.1" in local watershed	X	Stream
9. Evidence watercourse has been used as a supply of drinking water	X	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

Overall Hydrologic Determination = WWC (upland Drainage feature)

Secondary Indicator Score (if applicable) = N/A

Justification / Notes: this feature is an agricultural drainage feature formed in the upland. Confluence w/WWC3.

Hairy Crab grass (*Digitaria sanguinalis*) - FACU

Corn speedwell (*Veronica arvensis*) - UPL

Horseweed (*Erigeron canadensis*) - FACU

annual bluegrass (*Poa annua*) - FACU

end lat/long - 36.611597, -87.240539

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

5/13/22

Named Waterbody: <u>VDF3</u>		Date/Time: <u>10:15am</u>
Assessors/Affiliation: <u>Marian Rubin (QHP-12) + Rick Kenna (QHP-12) Spectrum</u>		Project ID: <u>3619-001-30</u>
Site Name/Description: <u>Bellamy</u> <u>Environmental</u>		
Site Location: <u>Guthrie HWY, Clarksville</u>		
HUC (12 digit): <u>051302060603 (Spring Creek)</u>		Lat/Long: <u>36.611052</u>
Previous Rainfall (7-days): <u>0.22"</u>		<u>-87.239427</u>
Precipitation this Season vs. Normal: abnormally wet elevated <u>average</u> low abnormally dry unknown		
Source of recent & seasonal precip data: <u>ATNC Clark47/NOAA</u>		
Watershed Size: <u>~ ± 40 acres (stream stats)</u>		County: <u>Montgomery</u>
Soil Type(s) / Geology: <u>Dickson Silt/Clay / St. Genevieve limestone</u>		Source: <u>WGS/WGS</u>
Surrounding Land Use: <u>Agricultural</u>		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes): <u>Severe</u> Moderate Slight Absent		

→ Ag land use

Primary Field Indicators Observed

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

Overall Hydrologic Determination = WWC (upland Drainage Feature)

Secondary Indicator Score (if applicable) = N/A

Justification / Notes: end lat/long: 36.610951, -87.239218

Veg-hairy Crabgrass (*Digitaria sanguinalis*) - FACU

feature transitions to WWC where bed + bank become more defined

APPENDIX D

Wetland Datasheets

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp:11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Bellamy Property City/County: Clarksville/Montgomery County Sampling Date: 5/13/2022

Applicant/Owner: Provident Realty Advisors State: TN Sampling Point: Up J

Investigator(s): Marian Rubin & Kari Kennel - Spectrum Environmental Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Floodplain/toeslope Local relief (concave, convex, none): Linear Slope (%): 0-2

Subregion (LRR or MLRA): LRR N, MLRA 122 Lat: 36.609816° Long: -87.239533° Datum:

Soil Map Unit Name: Ld—Lindell silt loam, 0 to 2 percent slopes, occasionally flooded NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u></u> No <u>X</u> Hydric Soil Present? Yes <u></u> No <u>X</u> Wetland Hydrology Present? Yes <u></u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u></u> No <u>X</u>
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Remarks:
 This feature is mapped on NWP as PFO1A polygon. Soil pits (Up J, Up F, and Up G) do not meet all three indicators of a wetland: hydrology, hydric soils, and hydrophytic vegetation as provided in the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region: (Version 2.0) – November 2010 (USACE 2010).

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u>Surface Water (A1)</u> <u>High Water Table (A2)</u> <u>Saturation (A3)</u> <u>Water Marks (B1)</u> <u>Sediment Deposits (B2)</u> <u>Drift Deposits (B3)</u> <u>Algal Mat or Crust (B4)</u> <u>Iron Deposits (B5)</u> <u>Inundation Visible on Aerial Imagery (B7)</u> <u>Water-Stained Leaves (B9)</u> <u>Aquatic Fauna (B13)</u> <u>True Aquatic Plants (B14)</u> <u>Hydrogen Sulfide Odor (C1)</u> <u>Oxidized Rhizospheres on Living Roots (C3)</u> <u>Presence of Reduced Iron (C4)</u> <u>Recent Iron Reduction in Tilled Soils (C6)</u> <u>Thin Muck Surface (C7)</u> <u>Other (Explain in Remarks)</u>	<u>Secondary Indicators (minimum of two required)</u> <u>Surface Soil Cracks (B6)</u> <u>Sparsely Vegetated Concave Surface (B8)</u> <u>X Drainage Patterns (B10)</u> <u>Moss Trim Lines (B16)</u> <u>Dry-Season Water Table (C2)</u> <u>Crayfish Burrows (C8)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Stunted or Stressed Plants (D1)</u> <u>Geomorphic Position (D2)</u> <u>Shallow Aquitard (D3)</u> <u>Microtopographic Relief (D4)</u> <u>FAC-Neutral Test (D5)</u>
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Field Observations: Surface Water Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Water Table Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Saturation Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u></u> No <u>X</u>
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
 This data point was taken in the channel of WWC3

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

 Sampling Point: Up J

<u>Tree Stratum</u> (Plot size: <u>30</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Ulmus alata</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>
2.	<u>Celtis laevigata</u>	<u>50</u>	<u>Yes</u>	<u>FACW</u>
3.	<u>Carya ovata</u>	<u>10</u>	<u>No</u>	<u>FACU</u>
4.				
5.				
6.				
7.				
		<u>90</u>	<u>=Total Cover</u>	
50% of total cover: <u>45</u>		20% of total cover: <u>18</u>		

<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Celtis laevigata</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>
2.	<u>Asimina triloba</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>
3.	<u>Ligustrum sinense</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>
4.				
5.				
6.				
7.				
8.				
9.				
		<u>65</u>	<u>=Total Cover</u>	
50% of total cover: <u>33</u>		20% of total cover: <u>13</u>		

<u>Herb Stratum</u> (Plot size: <u>30</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Poa annua</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>
2.	<u>Thlaspi arvense</u>	<u>5</u>	<u>No</u>	<u>UPL</u>
3.	<u>Teucrium canadense</u>	<u>2</u>	<u>No</u>	<u>FACW</u>
4.	<u>Stellaria media</u>	<u>5</u>	<u>No</u>	<u>UPL</u>
5.	<u>Ageratina altissima</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>
6.	<u>Ligustrum sinense</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>
7.	<u>Impatiens capensis</u>	<u>5</u>	<u>No</u>	<u>FACW</u>
8.	<u>Symphoricarpos orbiculatus</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>
9.				
10.				
11.				
		<u>87</u>	<u>=Total Cover</u>	
50% of total cover: <u>44</u>		20% of total cover: <u>18</u>		

<u>Woody Vine Stratum</u> (Plot size: <u>5</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Smilax rotundifolia</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>
2.				
3.				
4.				
5.				
		<u>15</u>	<u>=Total Cover</u>	
50% of total cover: <u>8</u>		20% of total cover: <u>3</u>		

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

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 40.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>77</u>	x 2 = <u>154</u>
FAC species <u>30</u>	x 3 = <u>90</u>
FACU species <u>140</u>	x 4 = <u>560</u>
UPL species <u>10</u>	x 5 = <u>50</u>
Column Totals: <u>257</u> (A)	<u>854</u> (B)
Prevalence Index = B/A = <u>3.32</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is $\leq 3.0^1$

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present?

Yes No X

SOIL

Sampling Point: Up J

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 4/4	98	7.5YR 4/6	2	c	m	Loamy/Clayey	Distinct redox concentrations
5-12	10YR 3/4	95	7.5YR 4/6	5	c	m	Loamy/Clayey	Distinct redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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 Mucky Mineral (S1) ☐ 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 Mucky Mineral (F1) (MLRA 136) ☐ 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 122, 136) ☐ Piedmont Floodplain Soils (F19) (MLRA 148) ☐ Red Parent Material (F21) (MLRA 127, 147, 148)	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) ☐ Red Parent Material (F21) (outside MLRA 127, 147, 148) ☐ Very Shallow Dark Surface (F22) ☐ Other (Explain in Remarks)
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³Indicators 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 ☒
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Remarks:

ENG FORM 6116-4, JUL 2018 Eastern Mountains and Piedmont – Version 2.0

Sampling Point: Up K

Tree Stratum (Plot size: 30)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<i>Liquidambar styraciflua</i>	5	No	FAC
2.	<i>Quercus alba</i>	10	Yes	FACU
3.	<i>Celtis laevigata</i>	15	Yes	FACW
4.				
5.				
6.				
7.				
		30 =Total Cover		
50% of total cover:		15	20% of total cover:	6
Sapling/Shrub Stratum (Plot size: 15)				
1.	<i>Juglans nigra</i>	5	Yes	FACU
2.	<i>Symphoricarpos orbiculatus</i>	15	Yes	FACU
3.				
4.				
5.				
6.				
7.				
8.				
9.				
		20 =Total Cover		
50% of total cover:		10	20% of total cover:	4
Herb Stratum (Plot size: 30)				
1.	<i>Xanthium strumarium</i>	5	No	FAC
2.	<i>Carex scabrata</i>	10	Yes	OBL
3.	<i>Commelina virginica</i>	10	Yes	FACW
4.	<i>Cardamine hirsuta</i>	15	Yes	FACU
5.	<i>Cephalanthus occidentalis</i>	5	No	OBL
6.	<i>Teucrium canadense</i>	2	No	FACW
7.	<i>Chenopodium album</i>	5	No	FACU
8.	<i>Rumex crispus</i>	5	No	FAC
9.	<i>Trachelospermum difforme</i>	5	No	FACW
10.				
11.				
		62 =Total Cover		
50% of total cover:		31	20% of total cover:	13
Woody Vine Stratum (Plot size: 5)				
1.				
2.				
3.				
4.				
5.				
50% of total cover:			20% of total cover:	

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 42.9% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 15	x 1 = 15
FACW species 32	x 2 = 64
FAC species 15	x 3 = 45
FACU species 50	x 4 = 200
UPL species 0	x 5 = 0
Column Totals: 112 (A)	324 (B)
Prevalence Index = B/A = 2.89	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? Yes No X

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

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-9	10YR 5/3	95	7.5YR 4/6	5	c	m	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)	☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
☐ Histic Epipedon (A2)	☐ Thin Dark Surface (S9) (MLRA 147, 148)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (MLRA 136)
☐ 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 Mucky Mineral (S1)	☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
☐ Sandy Gleyed Matrix (S4)	☐ Umbric Surface (F13) (MLRA 122, 136)
☐ Sandy Redox (S5)	☐ Piedmont Floodplain Soils (F19) (MLRA 148)
☐ Stripped Matrix (S6)	☐ Red Parent Material (F21) (MLRA 127, 147, 148)
☐ Dark Surface (S7)	

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)
☐ Red Parent Material (F21) (outside MLRA 127, 147, 148)
☐ Very Shallow Dark Surface (F22)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**
Type: Bedrock
Depth (inches): 9
Hydric Soil Present? Yes No X

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp:11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Bellamy Property City/County: Clarksville/Montgomery County Sampling Date: 5/13/2022

Applicant/Owner: Provident Realty Advisors State: TN Sampling Point: Up L

Investigator(s): Marian Rubin & Kari Kennel - Spectrum Environmental Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Depression/Toeslope Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR N, MLRA 122 Lat: 36.607250° Long: -87.238242° Datum:

Soil Map Unit Name: Gu—Guthrie silt loam, 0 to 2 percent slopes, occasionally ponded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u></u> No <u>X</u> Hydric Soil Present? Yes <u></u> No <u>X</u> Wetland Hydrology Present? Yes <u></u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u></u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<u>Surface Water (A1)</u> <u>High Water Table (A2)</u> <u>Saturation (A3)</u> <u>Water Marks (B1)</u> <u>Sediment Deposits (B2)</u> <u>Drift Deposits (B3)</u> <u>Algal Mat or Crust (B4)</u> <u>Iron Deposits (B5)</u> <u>Inundation Visible on Aerial Imagery (B7)</u> <u>Water-Stained Leaves (B9)</u> <u>Aquatic Fauna (B13)</u> <u>True Aquatic Plants (B14)</u> <u>Hydrogen Sulfide Odor (C1)</u> <u>Oxidized Rhizospheres on Living Roots (C3)</u> <u>Presence of Reduced Iron (C4)</u> <u>Recent Iron Reduction in Tilled Soils (C6)</u> <u>Thin Muck Surface (C7)</u> <u>Other (Explain in Remarks)</u>	<u>Surface Soil Cracks (B6)</u> <u>Sparsely Vegetated Concave Surface (B8)</u> <u>Drainage Patterns (B10)</u> <u>Moss Trim Lines (B16)</u> <u>Dry-Season Water Table (C2)</u> <u>Crayfish Burrows (C8)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Stunted or Stressed Plants (D1)</u> <u>Geomorphic Position (D2)</u> <u>Shallow Aquitard (D3)</u> <u>Microtopographic Relief (D4)</u> <u>FAC-Neutral Test (D5)</u>
Field Observations: Surface Water Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Water Table Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Saturation Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u></u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: Upland	

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

 Sampling Point: Up L

<u>Tree Stratum</u> (Plot size: <u>30</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Carya ovata</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
2.	<u>acer rubrum</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>
3.	<u>Nyssa sylvatica</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
4.				
5.				
6.				
7.				
		<u>30</u>	=Total Cover	
50% of total cover:		<u>15</u>	20% of total cover:	
			<u>6</u>	

<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Symphoricarpos orbiculatus</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>
2.	<u>Acer negundo</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
3.	<u>Ligustrum sinense</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
4.				
5.				
6.				
7.				
8.				
9.				
		<u>35</u>	=Total Cover	
50% of total cover:		<u>18</u>	20% of total cover:	
			<u>7</u>	

<u>Herb Stratum</u> (Plot size: <u>30</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Microstegium vimineum</u>	<u>10</u>	<u>No</u>	<u>FAC</u>
2.	<u>Stellaria media</u>	<u>40</u>	<u>Yes</u>	<u>UPL</u>
3.	<u>Persicaria longiseta</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>
4.	<u>Campsis radicans</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
5.	<u>poa annua</u>	<u>15</u>	<u>No</u>	<u>FACU</u>
6.				
7.				
8.				
9.				
10.				
11.				
		<u>90</u>	=Total Cover	
50% of total cover:		<u>45</u>	20% of total cover:	
			<u>18</u>	

<u>Woody Vine Stratum</u> (Plot size: <u>5</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
50% of total cover:			20% of total cover:	

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

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 42.9% (A/B)

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>65</u>	x 3 = <u>195</u>
FACU species <u>50</u>	x 4 = <u>200</u>
UPL species <u>40</u>	x 5 = <u>200</u>
Column Totals: <u>155</u> (A)	<u>595</u> (B)
Prevalence Index = B/A = <u>3.84</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present?

Yes No X

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 2/2	100					Loamy/Clayey	
2-12	10YR 4/3	100					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)	☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
☐ Histic Epipedon (A2)	☐ Thin Dark Surface (S9) (MLRA 147, 148)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (MLRA 136)
☐ 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 Mucky Mineral (S1)	☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
☐ Sandy Gleyed Matrix (S4)	☐ Umbric Surface (F13) (MLRA 122, 136)
☐ Sandy Redox (S5)	☐ Piedmont Floodplain Soils (F19) (MLRA 148)
☐ Stripped Matrix (S6)	☐ Red Parent Material (F21) (MLRA 127, 147, 148)
☐ Dark Surface (S7)	

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)
☐ Red Parent Material (F21) (outside MLRA 127, 147, 148)
☐ Very Shallow Dark Surface (F22)
☐ Other (Explain in Remarks)

³Indicators 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:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp:11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Bellamy Property City/County: Clarksville/Montgomery County Sampling Date: 5/20/2022

Applicant/Owner: Provident Realty Advisors State: TN Sampling Point: Up M

Investigator(s): Kari Kennel & Brittini Black - Spectrum Environmental Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Depression/Toeslope Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR N, MLRA 122 Lat: 36.607815° Long: -87.239174° Datum:

Soil Map Unit Name: Gu—Guthrie silt loam, 0 to 2 percent slopes, occasionally ponded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u></u> No <u>X</u> Hydric Soil Present? Yes <u></u> No <u>X</u> Wetland Hydrology Present? Yes <u></u> No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u></u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u>Surface Water (A1)</u> <u>High Water Table (A2)</u> <u>Saturation (A3)</u> <u>Water Marks (B1)</u> <u>Sediment Deposits (B2)</u> <u>Drift Deposits (B3)</u> <u>Algal Mat or Crust (B4)</u> <u>Iron Deposits (B5)</u> <u>Inundation Visible on Aerial Imagery (B7)</u> <u>Water-Stained Leaves (B9)</u> <u>Aquatic Fauna (B13)</u> <u>True Aquatic Plants (B14)</u> <u>Hydrogen Sulfide Odor (C1)</u> <u>Oxidized Rhizospheres on Living Roots (C3)</u> <u>Presence of Reduced Iron (C4)</u> <u>Recent Iron Reduction in Tilled Soils (C6)</u> <u>Thin Muck Surface (C7)</u> <u>Other (Explain in Remarks)</u>	<u>Secondary Indicators (minimum of two required)</u> <u>Surface Soil Cracks (B6)</u> <u>Sparsely Vegetated Concave Surface (B8)</u> <u>X Drainage Patterns (B10)</u> <u>Moss Trim Lines (B16)</u> <u>Dry-Season Water Table (C2)</u> <u>Crayfish Burrows (C8)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Stunted or Stressed Plants (D1)</u> <u>Geomorphic Position (D2)</u> <u>Shallow Aquitard (D3)</u> <u>Microtopographic Relief (D4)</u> <u>FAC-Neutral Test (D5)</u>
Field Observations: Surface Water Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Water Table Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Saturation Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u></u> No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: This data point was taken in the channel of WWC3	

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

 Sampling Point: Up M

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

_____ = Total Cover

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____

_____ = Total Cover

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Xanthium strumarium</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Festuca arundinacea</u>	<u>35</u>	<u>Yes</u>	<u>FACU</u>
3. <u>Diodia virginiana</u>	<u>5</u>	<u>No</u>	<u>FACW</u>
4. <u>Rumex crispus</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____

95 = Total Cover

 50% of total cover: 48 20% of total cover: 19

Woody Vine Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____

_____ = Total Cover

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

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

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

 Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

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>55</u>	x 3 = <u>165</u>
FACU species <u>35</u>	x 4 = <u>140</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>95</u> (A)	<u>315</u> (B)
Prevalence Index = B/A = <u>3.32</u>	

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- _____ Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present?

 Yes _____ No X

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

SOIL

Sampling Point: Up M

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-10	10YR 5/3	90	7.5YR 4/6	10	C	M	Loamy/Clayey	
10-12	10YR 5/3	85	7.5YR 4/6	15	C	M	Loamy/Clayey	Prominent redox concentrations
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.					² Location: PL=Pore Lining, M=Matrix.			
Hydric Soil Indicators:						Indicators for Problematic Hydric Soils³:		
☐ Histosol (A1)			☐ Polyvalue Below Surface (S8) (MLRA 147, 148)			☐ 2 cm Muck (A10) (MLRA 147)		
☐ Histic Epipedon (A2)			☐ Thin Dark Surface (S9) (MLRA 147, 148)			☐ Coast Prairie Redox (A16)		
☐ Black Histic (A3)			☐ Loamy Mucky Mineral (F1) (MLRA 136)			☐ (MLRA 147, 148)		
☐ Hydrogen Sulfide (A4)			☐ Loamy Gleyed Matrix (F2)			☐ Piedmont Floodplain Soils (F19)		
☐ Stratified Layers (A5)			☐ Depleted Matrix (F3)			☐ (MLRA 136, 147)		
☐ 2 cm Muck (A10) (LRR N)			☐ Redox Dark Surface (F6)			☐ Red Parent Material (F21)		
☐ Depleted Below Dark Surface (A11)			☐ Depleted Dark Surface (F7)			☐ (outside MLRA 127, 147, 148)		
☐ Thick Dark Surface (A12)			☐ Redox Depressions (F8)			☐ Very Shallow Dark Surface (F22)		
☐ Sandy Mucky Mineral (S1)			☐ Iron-Manganese Masses (F12) (LRR N,			☐ Other (Explain in Remarks)		
☐ Sandy Gleyed Matrix (S4)			☐ MLRA 136)					
☐ Sandy Redox (S5)			☐ Umbric Surface (F13) (MLRA 122, 136)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
☐ Stripped Matrix (S6)			☐ Piedmont Floodplain Soils (F19) (MLRA 148)					
☐ Dark Surface (S7)			☐ Red Parent Material (F21) (MLRA 127, 147, 148)					
Restrictive Layer (if observed):								
Type: _____						Hydric Soil Present? Yes ____ No __X__		
Depth (inches): _____								
Remarks: 								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp:11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Bellamy Property City/County: Clarksville/Montgomery County Sampling Date: 5/20/2022

Applicant/Owner: Provident Realty Advisors State: TN Sampling Point: Up N

Investigator(s): Kari Kennel & Brittini Black - Spectrum Environmental Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Depression/Toeslope Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR N, MLRA 122 Lat: 36.608227° Long: -87.239750° Datum:

Soil Map Unit Name: Gu—Guthrie silt loam, 0 to 2 percent slopes, occasionally ponded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No (If no, explain in Remarks.)

Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u></u> No <u>X</u> Hydric Soil Present? Yes <u></u> No <u>X</u> Wetland Hydrology Present? Yes <u></u> No <u>X</u>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:60%;">Is the Sampled Area within a Wetland?</td> <td style="width:40%;">Yes <u></u> No <u>X</u></td> </tr> </table>	Is the Sampled Area within a Wetland?	Yes <u></u> No <u>X</u>
Is the Sampled Area within a Wetland?	Yes <u></u> No <u>X</u>		
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <u>Surface Water (A1)</u> <u>High Water Table (A2)</u> <u>Saturation (A3)</u> <u>Water Marks (B1)</u> <u>Sediment Deposits (B2)</u> <u>Drift Deposits (B3)</u> <u>Algal Mat or Crust (B4)</u> <u>Iron Deposits (B5)</u> <u>Inundation Visible on Aerial Imagery (B7)</u> <u>Water-Stained Leaves (B9)</u> <u>Aquatic Fauna (B13)</u> <u>True Aquatic Plants (B14)</u> <u>Hydrogen Sulfide Odor (C1)</u> <u>Oxidized Rhizospheres on Living Roots (C3)</u> <u>Presence of Reduced Iron (C4)</u> <u>Recent Iron Reduction in Tilled Soils (C6)</u> <u>Thin Muck Surface (C7)</u> <u>Other (Explain in Remarks)</u>	Secondary Indicators (minimum of two required) <u>Surface Soil Cracks (B6)</u> <u>Sparsely Vegetated Concave Surface (B8)</u> <u>X Drainage Patterns (B10)</u> <u>Moss Trim Lines (B16)</u> <u>Dry-Season Water Table (C2)</u> <u>Crayfish Burrows (C8)</u> <u>Saturation Visible on Aerial Imagery (C9)</u> <u>Stunted or Stressed Plants (D1)</u> <u>Geomorphic Position (D2)</u> <u>Shallow Aquitard (D3)</u> <u>Microtopographic Relief (D4)</u> <u>FAC-Neutral Test (D5)</u>		
Field Observations: Surface Water Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Water Table Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> Saturation Present? Yes <u></u> No <u>X</u> Depth (inches): <u></u> (includes capillary fringe)	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:60%;">Wetland Hydrology Present?</td> <td style="width:40%;">Yes <u></u> No <u>X</u></td> </tr> </table>	Wetland Hydrology Present?	Yes <u></u> No <u>X</u>
Wetland Hydrology Present?	Yes <u></u> No <u>X</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: This data point was taken in the channel of WWC3			

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

 Sampling Point: Up N

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Xanthium strumarium</i>	<u>2</u>	No	FAC
2. <i>Festuca arundinacea</i>	<u>5</u>	No	FACU
3. <i>Diodia virginiana</i>	<u>5</u>	No	FACW
4. <i>Bouteloua dactyloides</i>	<u>80</u>	Yes	FACU
5. <i>Plantago rugelii</i>	<u>5</u>	No	FACU
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
	<u>97</u> = Total Cover		
50% of total cover: <u>49</u>	20% of total cover: <u>20</u>		

Woody Vine Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

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

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:	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>2</u>	x 3 = <u>6</u>
FACU species <u>90</u>	x 4 = <u>360</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>97</u> (A)	<u>376</u> (B)
Prevalence Index = B/A = <u>3.88</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

 2 - Dominance Test is >50%

 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present?

Yes No X

SOIL

Sampling Point: Up N

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-12	10YR 4/3	95	7.5YR 4/6	5	C	M	Loamy/Clayey	
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.						² Location: PL=Pore Lining, M=Matrix.		
Hydric Soil Indicators:						Indicators for Problematic Hydric Soils³:		
☐ Histosol (A1)			☐ Polyvalue Below Surface (S8) (MLRA 147, 148)			☐ 2 cm Muck (A10) (MLRA 147)		
☐ Histic Epipedon (A2)			☐ Thin Dark Surface (S9) (MLRA 147, 148)			☐ Coast Prairie Redox (A16)		
☐ Black Histic (A3)			☐ Loamy Mucky Mineral (F1) (MLRA 136)			☐ (MLRA 147, 148)		
☐ Hydrogen Sulfide (A4)			☐ Loamy Gleyed Matrix (F2)			☐ Piedmont Floodplain Soils (F19)		
☐ Stratified Layers (A5)			☐ Depleted Matrix (F3)			☐ (MLRA 136, 147)		
☐ 2 cm Muck (A10) (LRR N)			☐ Redox Dark Surface (F6)			☐ Red Parent Material (F21)		
☐ Depleted Below Dark Surface (A11)			☐ Depleted Dark Surface (F7)			☐ (outside MLRA 127, 147, 148)		
☐ Thick Dark Surface (A12)			☐ Redox Depressions (F8)			☐ Very Shallow Dark Surface (F22)		
☐ Sandy Mucky Mineral (S1)			☐ Iron-Manganese Masses (F12) (LRR N,			☐ Other (Explain in Remarks)		
☐ Sandy Gleyed Matrix (S4)			☐ MLRA 136)			³ Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.		
☐ Sandy Redox (S5)			☐ Umbric Surface (F13) (MLRA 122, 136)					
☐ Stripped Matrix (S6)			☐ Piedmont Floodplain Soils (F19) (MLRA 148)					
☐ Dark Surface (S7)			☐ Red Parent Material (F21) (MLRA 127, 147, 148)					
Restrictive Layer (if observed):								
Type: _____						Hydric Soil Present? Yes ☐ No ☒		
Depth (inches): _____								
Remarks:								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp:11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Bellamy Property City/County: Clarksville/Montgomery County Sampling Date: 5/20/2022

Applicant/Owner: Provident Realty Advisors State: TN Sampling Point: Up O

Investigator(s): Kari Kennel & Brittini Black - Spectrum Environmental Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Depression/Toeslope Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR N, MLRA 122 Lat: 36.608356° Long: -87.239347° Datum: _____

Soil Map Unit Name: Gu—Guthrie silt loam, 0 to 2 percent slopes, occasionally ponded NWI classification: none

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☐ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ True Aquatic Plants (B14) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	<u>Secondary Indicators (minimum of two required)</u> ☐ 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 <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes _____ No <u>X</u> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: This data point was taken in the channel of WWC3	

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

 Sampling Point: Up O

<u>Tree Stratum</u> (Plot size: <u>30</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Ulmus americana</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>
2.	<u>Quercus velutina</u>	<u>10</u>	<u>Yes</u>	<u>UPL</u>
3.				
4.				
5.				
6.				
7.				
		<u>20</u>	<u>=Total Cover</u>	
50% of total cover: <u>10</u>		20% of total cover: <u>4</u>		

<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)				
1.				
2.				
3.				
4.				
5.				
6.				
7.				
8.				
9.				
			<u>=Total Cover</u>	
50% of total cover: _____		20% of total cover: _____		

<u>Herb Stratum</u> (Plot size: <u>5</u>)				
1.	<u>Xanthium strumarium</u>	<u>3</u>	<u>No</u>	<u>FAC</u>
2.	<u>Dichanthelium scoparium</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>
3.	<u>Allium ursinum</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
4.	<u>Plantago lanceolata</u>	<u>3</u>	<u>No</u>	<u>UPL</u>
5.	<u>Rumex crispus</u>	<u>3</u>	<u>No</u>	<u>FAC</u>
6.	<u>Commelina virginica</u>	<u>3</u>	<u>No</u>	<u>FACW</u>
7.	<u>Ambrosia artemisiifolia</u>	<u>3</u>	<u>No</u>	<u>FACU</u>
8.	<u>Bouteloua dactyloides</u>	<u>25</u>	<u>Yes</u>	<u>FACU</u>
9.				
10.				
11.				
		<u>60</u>	<u>=Total Cover</u>	
50% of total cover: <u>30</u>		20% of total cover: <u>12</u>		

<u>Woody Vine Stratum</u> (Plot size: <u>15</u>)				
1.				
2.				
3.				
4.				
5.				
			<u>=Total Cover</u>	
50% of total cover: _____		20% of total cover: _____		

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

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>28</u>	x 2 =	<u>56</u>
FAC species	<u>6</u>	x 3 =	<u>18</u>
FACU species	<u>33</u>	x 4 =	<u>132</u>
UPL species	<u>13</u>	x 5 =	<u>65</u>
Column Totals:	<u>80</u> (A)		<u>271</u> (B)
Prevalence Index = B/A =		<u>3.39</u>	

Hydrophytic Vegetation Indicators:

- 1 - Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is $\leq 3.0^1$
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
- Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present?

Yes No X

SOIL

Sampling Point: Up O

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 4/3	98	7.5YR 4/6	2	C	M	Loamy/Clayey	
3-12	10YR 4/3	95	7.5YR 4/6	5	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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 Mucky Mineral (S1) ☐ 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 Mucky Mineral (F1) (MLRA 136) ☐ 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 122, 136) ☐ Piedmont Floodplain Soils (F19) (MLRA 148) ☐ Red Parent Material (F21) (MLRA 127, 147, 148)	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) ☐ Red Parent Material (F21) (outside MLRA 127, 147, 148) ☐ Very Shallow Dark Surface (F22) ☐ Other (Explain in Remarks)
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³Indicators 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 ☒
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Remarks:

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

 Sampling Point: Wet D4

<u>Tree Stratum</u> (Plot size: <u>30</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Liquidambar styraciflua</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>
2.	<u>Carya ovata</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
3.	<u>Ulmus americana</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>
4.				
5.				
6.				
7.				
		<u>35</u>	=Total Cover	
50% of total cover: <u>18</u>		20% of total cover: <u>7</u>		

<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Liquidambar styraciflua</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>
2.	<u>Celtis laevigata</u>	<u>5</u>	<u>Yes</u>	<u>FACW</u>
3.	<u>Ligustrum sinense</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>
4.	<u>Symphoricarpos orbiculatus</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>
5.				
6.				
7.				
8.				
9.				
		<u>30</u>	=Total Cover	
50% of total cover: <u>15</u>		20% of total cover: <u>6</u>		

<u>Herb Stratum</u> (Plot size: <u>30</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Commelina virginica</u>	<u>5</u>	<u>No</u>	<u>FACW</u>
2.	<u>Rumex crispus</u>	<u>10</u>	<u>No</u>	<u>FAC</u>
3.	<u>Carex pedunculata</u>	<u>25</u>	<u>Yes</u>	<u>OBL</u>
4.	<u>Ambrosia trifida</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
5.	<u>poa annua</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>
6.	<u>Houstonia procumbens</u>	<u>5</u>	<u>No</u>	<u>UPL</u>
7.	<u>Ligustrum sinense</u>	<u>10</u>	<u>No</u>	<u>FACU</u>
8.				
9.				
10.				
11.				
		<u>80</u>	=Total Cover	
50% of total cover: <u>40</u>		20% of total cover: <u>16</u>		

<u>Woody Vine Stratum</u> (Plot size: <u>5</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.				
2.				
3.				
4.				
5.				
			=Total Cover	
50% of total cover: _____		20% of total cover: _____		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 55.6% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>25</u>	x 1 = <u>25</u>
FACW species <u>20</u>	x 2 = <u>40</u>
FAC species <u>35</u>	x 3 = <u>105</u>
FACU species <u>60</u>	x 4 = <u>240</u>
UPL species <u>5</u>	x 5 = <u>25</u>
Column Totals: <u>145</u> (A)	<u>435</u> (B)
Prevalence Index = B/A = <u>3.00</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

Hydrophytic Vegetation Present?

Yes X No

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

SOIL

Sampling Point: Wet D4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 4/1	98	7.5YR 4/6	2	c	m	Loamy/Clayey	
2-12	10YR 4/2	90	7.5YR 4/6	10	c	m	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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 Mucky Mineral (S1) ☐ 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 Mucky Mineral (F1) (MLRA 136) ☐ 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 122, 136) ☐ Piedmont Floodplain Soils (F19) (MLRA 148) ☐ Red Parent Material (F21) (MLRA 127, 147, 148)	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) ☐ Red Parent Material (F21) (outside MLRA 127, 147, 148) ☐ Very Shallow Dark Surface (F22) ☐ Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <u>X</u> No _____
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Remarks:

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

 Sampling Point: Wet D5

<u>Tree Stratum</u> (Plot size: <u>30</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Asimina triloba</u>	<u>25</u>	<u>Yes</u>	<u>FAC</u>
2.	<u>Quercus palustris</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>
3.	<u>Celtis laevigata</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>
4.	<u>Ulmus americana</u>	<u>10</u>	<u>No</u>	<u>FACW</u>
5.				
6.				
7.				
		<u>70</u>	=Total Cover	
50% of total cover:		<u>35</u>	20% of total cover:	
			<u>14</u>	

<u>Sapling/Shrub Stratum</u> (Plot size: <u>15</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Fraxinus pennsylvanica</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>
2.	<u>Ligustrum sinense</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
3.				
4.				
5.				
6.				
7.				
8.				
9.				
		<u>20</u>	=Total Cover	
50% of total cover:		<u>10</u>	20% of total cover:	
			<u>4</u>	

<u>Herb Stratum</u> (Plot size: <u>30</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Sagittaria latifolia</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>
2.	<u>Chasmanthium latifolium</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>
3.	<u>Leersia oryzoides</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>
4.	<u>Glyceria striata</u>	<u>15</u>	<u>Yes</u>	<u>OBL</u>
5.	<u>Cardamine hirsuta</u>	<u>5</u>	<u>No</u>	<u>FACU</u>
6.	<u>Scutellaria lateriflora</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>
7.	<u>Cephalanthus occidentalis</u>	<u>10</u>	<u>Yes</u>	<u>OBL</u>
8.				
9.				
10.				
11.				
		<u>70</u>	=Total Cover	
50% of total cover:		<u>35</u>	20% of total cover:	
			<u>14</u>	

<u>Woody Vine Stratum</u> (Plot size: <u>5</u>)		Absolute % Cover	Dominant Species?	Indicator Status
1.	<u>Smilax rotundifolia</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>
2.				
3.				
4.				
5.				
		<u>10</u>	=Total Cover	
50% of total cover:		<u>5</u>	20% of total cover:	
			<u>2</u>	

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 10 (A)

Total Number of Dominant Species Across All Strata: 12 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 83.3% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>45</u>	x 1 = <u>45</u>
FACW species <u>65</u>	x 2 = <u>130</u>
FAC species <u>35</u>	x 3 = <u>105</u>
FACU species <u>25</u>	x 4 = <u>100</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>170</u> (A)	<u>380</u> (B)
Prevalence Index = B/A = <u>2.24</u>	

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present?

Yes X No

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

SOIL

Sampling Point: Wet D5

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 4/1	95	7.5YR 4/6	5	c	m	Loamy/Clayey	
2-12	10YR 5/1	85	7.5YR 4/6	15	c	m	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked 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 Mucky Mineral (S1) ☐ 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 Mucky Mineral (F1) (MLRA 136) ☐ 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 122, 136) ☐ Piedmont Floodplain Soils (F19) (MLRA 148) ☐ Red Parent Material (F21) (MLRA 127, 147, 148)	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) ☐ Red Parent Material (F21) (outside MLRA 127, 147, 148) ☐ Very Shallow Dark Surface (F22) ☐ Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric Soil Present? Yes <u>X</u> No _____
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Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R	OMB Control #: 0710-0024, Exp:11/30/2024 Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)
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Project/Site: Bellamy Property City/County: Clarksville/Montgomery County Sampling Date: 5/13/2022

Applicant/Owner: Provident Realty Advisors State: TN Sampling Point: Wet D6

Investigator(s): Marian Rubin & Kari Kennel - Spectrum Environmental Section, Township, Range: N/A

Landform (hillside, terrace, etc.): Depression/Toeslope Local relief (concave, convex, none): Concave Slope (%): 0-2

Subregion (LRR or MLRA): LRR N, MLRA 122 Lat: 36.607337° Long: -87.237875° Datum: _____

Soil Map Unit Name: Gu—Guthrie silt loam, 0 to 2 percent slopes, occasionally ponded NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☐ Surface Water (A1) ☐ High Water Table (A2) ☒ Saturation (A3) ☐ Water Marks (B1) ☐ Sediment Deposits (B2) ☐ Drift Deposits (B3) ☐ Algal Mat or Crust (B4) ☐ Iron Deposits (B5) ☐ Inundation Visible on Aerial Imagery (B7) ☐ Water-Stained Leaves (B9) ☐ Aquatic Fauna (B13) ☐ True Aquatic Plants (B14) ☐ Hydrogen Sulfide Odor (C1) ☐ Oxidized Rhizospheres on Living Roots (C3) ☐ Presence of Reduced Iron (C4) ☐ Recent Iron Reduction in Tilled Soils (C6) ☐ Thin Muck Surface (C7) ☐ Other (Explain in Remarks)	<u>Secondary Indicators (minimum of two required)</u> ☐ 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 <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No <u>X</u> Depth (inches): _____ Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks: This data point was taken in the channel of WWC3	

Sampling Point: Wet D6

Tree Stratum (Plot size: 30)		Absolute % Cover	Dominant Species?	Indicator Status
1.	Liquidambar styraciflua	25	Yes	FAC
2.	Fraxinus nigra	15	Yes	FACW
3.	Acer rubrum	10	Yes	FAC
4.				
5.				
6.				
7.				
		50 =Total Cover		
50% of total cover:		25	20% of total cover:	10
Sapling/Shrub Stratum (Plot size: 15)				
1.	acer rubrum	10	Yes	FAC
2.	Liquidambar styraciflua	15	Yes	FAC
3.				
4.				
5.				
6.				
7.				
8.				
9.				
		25 =Total Cover		
50% of total cover:		13	20% of total cover:	5
Herb Stratum (Plot size: 30)				
1.	Solidago canadensis	10	No	FACU
2.	Sagittaria latifolia	5	No	OBL
3.	Plantago rugelii	10	No	FACU
4.	Bromus arvensis	20	Yes	FACU
5.	Microstegium vimineum	25	Yes	FAC
6.				
7.				
8.				
9.				
10.				
11.				
		70 =Total Cover		
50% of total cover:		35	20% of total cover:	14
Woody Vine Stratum (Plot size: 5)				
1.				
2.				
3.				
4.				
5.				
		=Total Cover		
50% of total cover:			20% of total cover:	
Remarks: (Include photo numbers here or on a separate sheet.)				

Dominance Test worksheet:			
Number of Dominant Species That Are OBL, FACW, or FAC: 6 (A)			
Total Number of Dominant Species Across All Strata: 7 (B)			
Percent of Dominant Species That Are OBL, FACW, or FAC: 85.7% (A/B)			
Prevalence Index worksheet:			
Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	15	x 2 =	30
FAC species	85	x 3 =	255
FACU species	40	x 4 =	160
UPL species	0	x 5 =	0
Column Totals:	145 (A)		450 (B)
Prevalence Index = B/A = 3.10			
Hydrophytic Vegetation Indicators:			
1 - Rapid Test for Hydrophytic Vegetation			
X 2 - Dominance Test is >50%			
3 - Prevalence Index is ≤3.0 ¹			
4 - 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.			
Definitions of Four Vegetation Strata:			
Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.			
Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.			
Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.			
Woody Vine – All woody vines greater than 3.28 ft in height.			
Hydrophytic Vegetation Present? Yes X No			

SOIL

Sampling Point: Wet D6**Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)**

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	10YR 5/2	95	7.5YR 4/6	5	c	m	Loamy/Clayey	
6-12	10YR 5/1	90	7.5YR 4/6	20	c	m	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.²Location: PL=Pore Lining, M=Matrix.**Hydric Soil Indicators:**

☐ Histosol (A1)	☐ Polyvalue Below Surface (S8) (MLRA 147, 148)
☐ Histic Epipedon (A2)	☐ Thin Dark Surface (S9) (MLRA 147, 148)
☐ Black Histic (A3)	☐ Loamy Mucky Mineral (F1) (MLRA 136)
☐ 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 Mucky Mineral (S1)	☐ Iron-Manganese Masses (F12) (LRR N, MLRA 136)
☐ Sandy Gleyed Matrix (S4)	☐ Umbric Surface (F13) (MLRA 122, 136)
☐ Sandy Redox (S5)	☐ Piedmont Floodplain Soils (F19) (MLRA 148)
☐ Stripped Matrix (S6)	☐ Red Parent Material (F21) (MLRA 127, 147, 148)
☐ Dark Surface (S7)	

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)
☐ Red Parent Material (F21) (outside MLRA 127, 147, 148)
☐ Very Shallow Dark Surface (F22)
☐ Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.**Restrictive Layer (if observed):**Type: _____
Depth (inches): _____Hydric Soil Present? Yes X No _____

Remarks: