



6/27/2022

Ms. Shari Winburn,
TDEC-Division of Water Resources
Knoxville Environmental Field Office
3711 Middlebrook Pike
Knoxville, Tennessee 37921
Shari.Winburn@tn.gov

**Subject: SR Maryville East
Hydrologic Determination Request
Blount County, Tennessee**

Ms. Winburn,

A subsidiary of Silicon Ranch Corporation (SRC), SR Maryville East, LLC intends to develop a site within Blount County, near Maryville, Tennessee as a photovoltaic (PV) solar power generating facility. The SR Maryville East site ("Project Site") includes approximately 127 acres bordered by Sevierville Road on the southeastern border and sits east of Maryville, Tennessee in Blount County (Appendix A, Figures 1 and 2). On behalf of its subsidiary SR Maryville East, LLC, SRC has authorized HDR Engineering, Inc. (HDR) as its agent to submit the enclosed Hydrologic Determination (HD) request for written approval from the Tennessee Department of Environmental Conservation (TDEC) regarding the extent of Wet Weather Conveyance (WWC) features within the Project Site.

	Requestor/Applicant	Consultant/Requestor	Current Property Owners
Name	Luke Wilkinson	Gracelyn Jones	Waters Family
Affiliation	SR Maryville East, LLC	HDR	N/A
Mailing Address	222 2 nd Avenue South Suite 1900 Nashville, TN, 37201	120 Brentwood Commons Way Suite 525, Brentwood, TN 37027	3003 Sevierville Rd. Maryville, TN 37804
Phone Number	615-577-4611	629-228-7558	770-335-4846
Parcel ID:	n/a	n/a	048-015.00-

Project Location: Blount County, TN

Basin: Crooked Creek Little River (Hydrologic Unit Code [HUC] 060102010106) and Nails Creek Little River (Hydrologic Unit Code [HUC] 060102010107).

Nearest City: Maryville, TN

County: Blount County

Center Decimal Degree Coordinates of Project Area: 35.777590°, -83.915507°

USGS Quadrangle Name: Maryville, TN (1979) (1":24,000'-scale)



Project Site Description

Prior to undertaking fieldwork, HDR scientists conducted a desktop review of the Project Area utilizing a number of resources. The assessed data are presented on several figures in Appendix A, as follows:

- **Figure 1**, Project Vicinity Map;
- **Figure 2**, Aerial Imagery;
- **Figure 3**, U.S. Geological Survey (USGS) Topographic Map;
- **Figure 4**, USDA Natural Resources Conservation Service (NRCS) soils map (including depth to confining layer and depth to water table);
- **Figure 5**, on-site streams, wetlands, and floodplains as depicted in the USGS National Hydrography Dataset (NHD), National Wetland Inventory (NWI), and the Federal Emergency Management ACT (FEMA) National Flood Hazard Layer Viewer;
- **Figure 6**, the 12-digit HUC watersheds as shown in USGS NHD; and
- **Figure 7**, Delineated Features.

According to the USDA NRCS Soil Survey of Blount County, thirteen different soil types were identified within the Project Site (Appendix A, Figure 4). Approximately 18% percent of the onsite soils are classified as prime farmland and 28% are of local importance. Depth to the restrictive layer is between approximately 2.0 and greater than 6.6 feet. Depth to the water table is between 2.3 and greater than 6.6 feet. Approximately of 17% of the soils with the Project Site are classified as hydric according to the NRCS National Hydric Soils List for Blount County (NRCS 2021).

Table 1. Summary of USDA NRCS Soils within the Site.

Map Unit Symbol	Map Unit Name	Farmland Classification	Depth to Restrictive Layer (feet)	Depth to Water Table (feet)	Acres	Percent
uDcC	Dewey-College dale complex, 6 to 15 percent slopes, eroded	Not prime farmland	>6.6	>6.6	5.73	4.50%
uEdC	Etowah-Dewey complex, 6 to 12 percent slopes	Not prime farmland	>6.6	>6.6	10.53	3.41%
Dt	Dewey silty clay loam, 6 to 15 percent slopes, eroded	Farmland of local importance	>6.6	>6.6	35.54	27.98%
Dr	Dewey silty clay, severely eroded moderately steep phase	Not prime farmland	>6.6	>6.6	24.61	18.77%
Du	Dewey silty clay loam, 15 to 25 percent slopes, eroded	Not prime farmland	>6.6	>6.6	5.54	4.30%
Dz	Dunmore silty clay, 12 to 25 percent slopes, severely eroded	Not prime farmland	>6.6	>6.6	0.02	0.02%
Eb	Emory silt loam, gently sloping phase	All areas prime farmland	>6.6	5.5	7.27	5.72%
Gb	Gullied land, limestone material	Not prime farmland	>6.6	>6.6	2.61	2.00%
Hc	Hamblen silt loam, drainageway, 0 to 2 percent slopes, occasionally flooded	All areas prime farmland	>6.6	2.5	12.22	9.62%



Le	Lindside silt loam, 0 to 3 percent slopes, occasionally flooded, warm	All areas prime farmland	>6.6	2.3	4.34	3.40%
Lk	Litz silt loam, sloping phase	Not prime farmland	2.0	>6.6	4.55	3.54%
Li	Litz silt loam, moderately steep phase	Not prime farmland	2.0	>6.6	4.50	3.54%
Sg	Sequoia silty clay loam, eroded sloping phase	Not prime farmland	3.0	>6.6	9.48	7.46%

A review of NWI and NHD datasets and aerial imagery indicate that Peppermint Branch (Stream 2), a perennial stream, flows through the center of the Site. Based on the field investigation, the Site also contains two unnamed tributaries (Stream 1 and 3) that flow into Peppermint Branch. Five WWCs connect directly to these streams and an additional five WWCs were identified within the Site that do not connect directly to Streams 1 - 3. Two palustrine forested wetlands (PFO), one palustrine emergent wetland (PEM), and one palustrine scrub/shrub wetland (PSS) are also present onsite (Appendix A, Figure 7).

The majority of the Site is classified as FEMA Flood Zone X according to FEMA maps. Zone X is defined as a moderate- to low-risk area of minimal flood hazard due to areas being outside the special flood hazard area and higher than an elevation of the 0.2 percent annual chance flood (Appendix A, Figure 5). Approximately 1.28 acres (less than 1%) of the Site is classified as FEMA Flood Zone A. This is a Special Flood Hazard Area (SFHA) due to its low elevation and proximity to lakes, ponds, and other bodies of water. This is a high-risk area because there is a 1% chance of annual flooding. The 1-percent annual chance flood is also referred to as the 100-year flood.

The project site consists of hay/pasture with small areas of mixed forest primarily in the center and northern portions of the Site (Appendix A, Figure 2). Dominant woody species consist of common hackberry (*Celtis occidentalis*), oak species (*Quercus* spp.), eastern red cedar (*Juniperus virginiana*), American sweetgum (*Liquidambar styraciflua*), loblolly pine (*Pinus taeda*), red maple (*Acer rubum*), American hornbeam (*Carpinus Caroliniana*), Callery pear (*Pyrus calleryana*), and American sycamore (*Platanus occidentalis*). The understory is composed primarily of eastern red cedar, American hornbeam, American sycamore, black raspberry (*Rubus occidentalis*), spicebush (*Lindera benzoin*), Chinese privet (*Ligustrum sinense*), and multiflora rose (*Rosa multiflora*). Common herbaceous and vine species include poison ivy (*Toxicodendron radicans*), sedge species (*Carex* spp.), grass species (*Poaceae* spp.), white clover (*Trifolium repens*), common dandelion (*Taraxacum officinale*), soft rush (*Juncus effusus*), foxtail grass (*Setaria viridis*), wild onion (*Allium oleraceum*), tansy ragwort (*Jacobaea heterophylla*), fescue grass (*Festuca heterophylla*), broad leaf dock (*Rumex obtusifolius*), ragweed (*Ambrosia acanthicarpa*), mock strawberry (*Duchesnea indica*), and Japanese honeysuckle (*Lonicera japonica*).



Jurisdictional Delineation and Hydrological Determination

On March 8 and 9, 2022 HDR environmental scientists Lyrandia Thiem, Tennessee Qualified Hydrologic Professional in Training (TN-QHP-IT), and Caroline Ryciuk reviewed the Project Site for waters of the U.S. under Section 404 of the Clean Water Act (CWA). Jurisdictional waters of the U.S. were delineated according to the methodology and guidance described in the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual, USACE 2008 Rapanos Guidance, and the 2012 USACE Eastern Mountains and Piedmont Regional Supplement (Version 2.0). Streams were classified utilizing the methodology and guidance provided in Regulatory Guidance Letter (RGL) 05-05 and the Tennessee Department of Environment and Conservation (TDEC) Division of Water Pollution Control Guidance for Making Hydrologic Determinations (Version 1.5). Jurisdictional waters of the U.S., Tennessee State Waters, and WWCs were flagged in the field and mapped using a Trimble® GeoXT GPS unit capable of sub-meter accuracy. GPS points were post-processed utilizing Trimble® GPS Pathfinder Office software.

Results

The results of the on-site field investigation conducted by HDR indicate that there are four (4) stream channels, four (4) wetlands, and ten (10) WWCs located within the Project Site (Appendix A, Figure 7).

The on-site surface waters drain to Peppermint Branch in the Little River Nails Creek watershed (HUC 060102010107) and Crooked Creek Little River (HUC 060102010106) ¹. The on-site surface waters are classified for Domestic Water Supply, Industrial Water Supply, Fish and Aquatic Life, Recreation, Livestock Watering and Wildlife, Navigation, and Irrigation uses as designated by the TDEC Division of Water Resources Water Pollution Control. ²

Wetland Waters

There are four (4) wetlands located within the Project Site, totaling approximately 0.90 acres (Appendix A, Figure 7). A summary of on-site wetland waters is included in Table 1.

Table 1. Summary of on-site wetland waters within the Project Site.

Feature Name	Coordinates (decimal degrees)	Cowardin Classification ¹	Estimated Amount of Aquatic Resource in Review Area (acres)
Wetland Waters			
Wetland 1	35.776188, -83.916963	PFO	0.05 acre
Wetland 2	35.774915, -83.913895	PSS	0.45 acre
Wetland 3	35.774915, -83.913895	PEM	0.18 acre
Wetland 4	35.777172, -83.915736	PFO	0.22 acre
Total Wetland Waters:			0.90 acres

¹ Crooked Creek Little River is referred to as Little River Middle Creek on the USG NHD Dataset (Figure 6).
[Division of Water Resources \(tn.gov\)](https://www.tn.gov/divisions/water-resources/)



¹ Cowardin Classifications: PEM = Palustrine emergent; PFO = Palustrine forested; PSS = Palustrine scrub/shrub

Streams

There are four (4) streams located within the Project Site totaling approximately 5,068 linear feet (0.32 acre) (Appendix A, Figure 7). A summary of on-site non-wetland waters are summarized in Table 2.

Table 1. Summary of on-site non-wetland waters within the Project Site.

Feature Name	Starting Coordinates (decimal degrees)	Ending Coordinates (decimal degrees)	Cowardin Classification ¹	Estimated Amount of Aquatic Resource in Review Area
Non-Wetland Waters				
Stream 1	35.78154, -83.914282	35.780300 -83.912157	R4SB5	Length: 849 lf Width: 6in – 2 ft Area: 0.04 ac.
Stream 2	35.7808889, -83.909905	35.776245, -83.917127	R2UB3	Length: 2,923 lf Width: 6-8 ft Area: 0.27 ac.
Stream 3	35.774486, -83.913593	35.77482, -83.915356	R4SB5	Length: 1,296 lf Width: 6in – 1ft Area: 0.01 ac.
Stream 4	35.779668, -83.913018	35.779709, -83.912868	R2UB3	Length: 47 lf Width: 1-2 ft Area: 0.01 ac.
Total Non-Wetland Waters:				Length: 5,115 linear feet Total acres: 0.33

¹ Cowardin Classifications: R4SB5 = Riverine, Intermittent, Mud Streambed; R2UB3 = Mud, Unconsolidated Bottom, Lower Perennial, Riverine

Wet Weather Conveyances

There are a total of ten (10) WWCs located within the Project Site totaling approximately 1,970 linear feet (0.12 acres) (Appendix A, Figure 7). A summary of on-site WWCs is included in Table 3.

Table 3. Summary of on-site Wet Weather Conveyances

Feature Name	Start Coordinates (decimal degrees)	End Coordinates (decimal degrees)	Estimated Amount of WWC in Review Area
WWC 1	35.778083, -83.915925	35.777621, -83.916042	Length: 172 ft Width: 2-6 ft Area: 0.02 ac
WWC 2	35.779660, -83.917929	35.779959, -83.918158	Length: 128 ft Width: 1 ft Area: 0.003 ac
WWC 3	35.780009, -83.917287	35.780282, -83.917703	Length: 145 ft Width: 3-4 ft Area: 0.01 ac
WWC 4	35.780172, -83.917557	35.780184, -83.917841	Length: 84 ft Width: 2 ft Area: 0.004 ac



Feature Name	Start Coordinates (decimal degrees)	End Coordinates (decimal degrees)	Estimated Amount of WWC in Review Area
WWC 5	35.780871, -83.914434	35.780965, -83.914291	Length: 55 ft Width: 2-3 ft Area: 0.004 ac
WWC 6	35.778807, -83.913759	35.778335, -83.913178	Length: 248 ft Width: 2 ft Area: 0.01 ac
WWC 7	35.778065, -83.914655	35.777636, -83.913847	Length: 295 ft Width: 2 ft Area: 0.01 ac.
WWC 8	35.777068, -83.916261	35.777010, -83.916136	Length: 43 ft Width: 2 ft Area: 0.002 ac
WWC 9	35.775991, -83.915116	35.776074, -83.915079	Length: 34 ft Width: 4 ft Area: 0.003 ac
WWC 10	35.77277, -83.914397	35.774523, -83.913610	Length: 766 ft Width: 2 ft Area: 0.04 ac
Total Wet Weather Conveyances:			Length: 1,970 ft Total acres: 0.11

On behalf of SR Maryville East, HDR is hereby requesting HD verification for four (4) wetlands, four (4) streams, and ten (10) WWCs within the Project Site. Should you have any questions or require additional information following your review of the enclosed materials, please contact Lyrandia Thiem at (615) 507-9167 or lyrandia-thiem@hdrinc.com or Gracelyn Jones at (629) 228-7558 or Gracelyn.Jones@hdrinc.com.

Sincerely,

Lyrandia Thiem (QHP-IT)
Environmental Scientist

Gracelyn Jones
Environmental Scientist



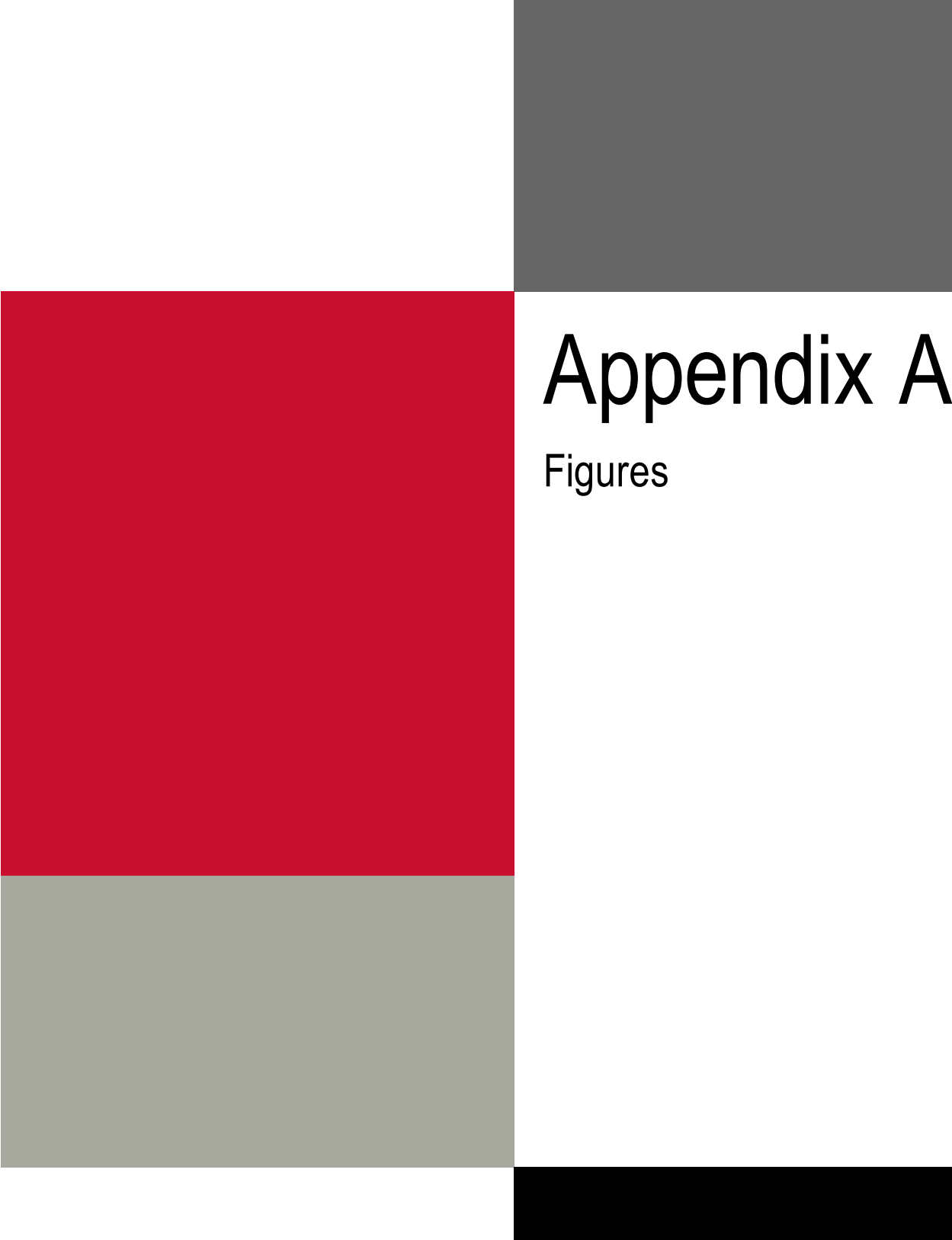
ppendices: Appendix A: Figures

Figure 1. Project icinity
Figure 2. Aerial Imagery
Figure 3. USGS Topographic Map
Figure 4. NRCS Soils Survey of lount County
Figure 5. USGS National Hydrography Dataset, USFWS
National Wetlands Inventory, and FEMA Floodplains
Figure 6. HUC 12 Watershed
Figure 7. Delineated Features

Appendix B: Data Forms and Normal Weather Conditions
USACE Wetland Determination Data Forms (DP1 - DP9)
Hydrologic Determination Data Sheets
Normal Weather Conditions

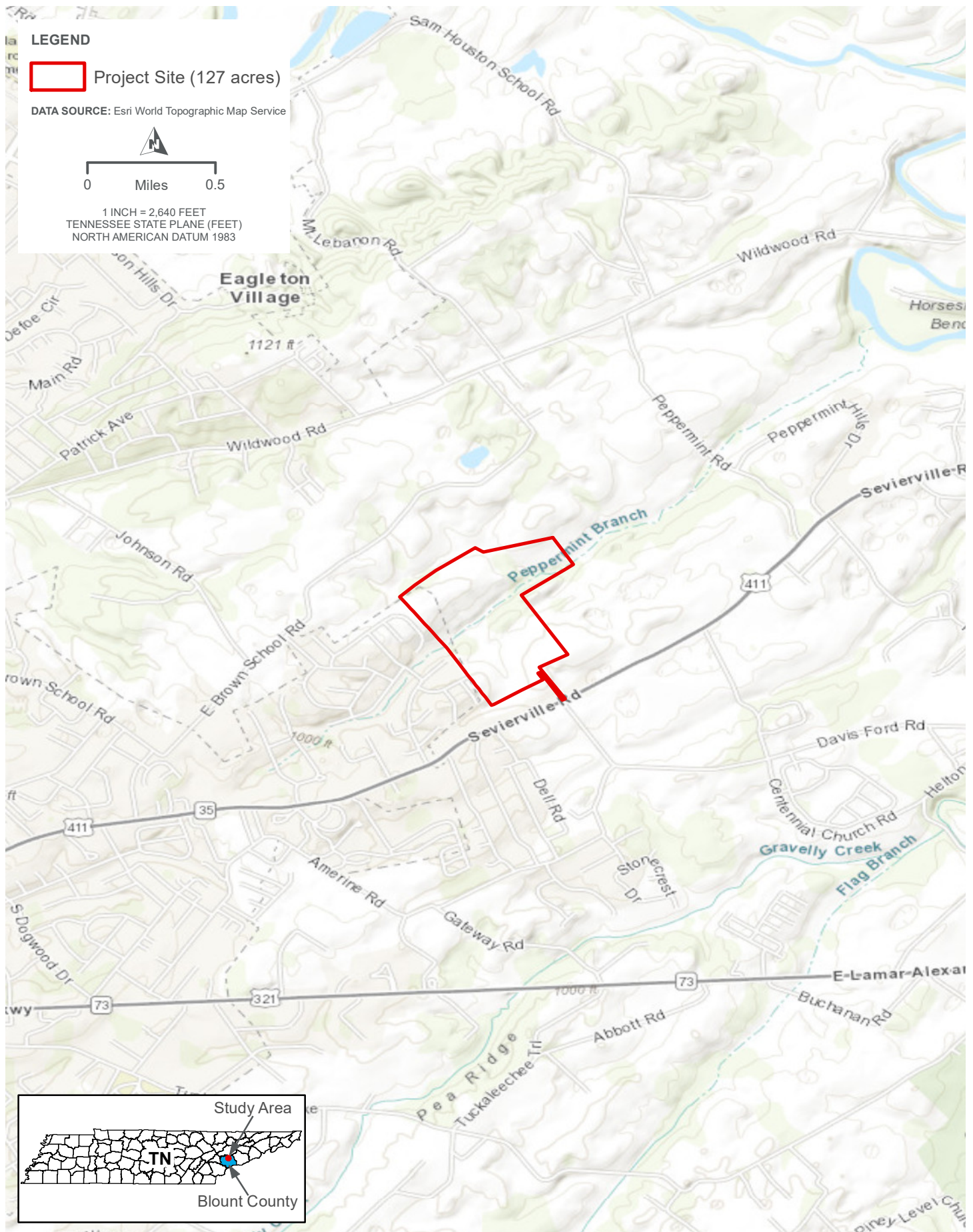
Appendix C: Site Photographs

cc: Luke Wilkinson, Silicon Ranch Corporation



Appendix A

Figures



SR MARYVILLE EAST PROJECT VICINITY

FIGURE 1

HYDROLOGIC DETERMINATION REQUEST

LEGEND

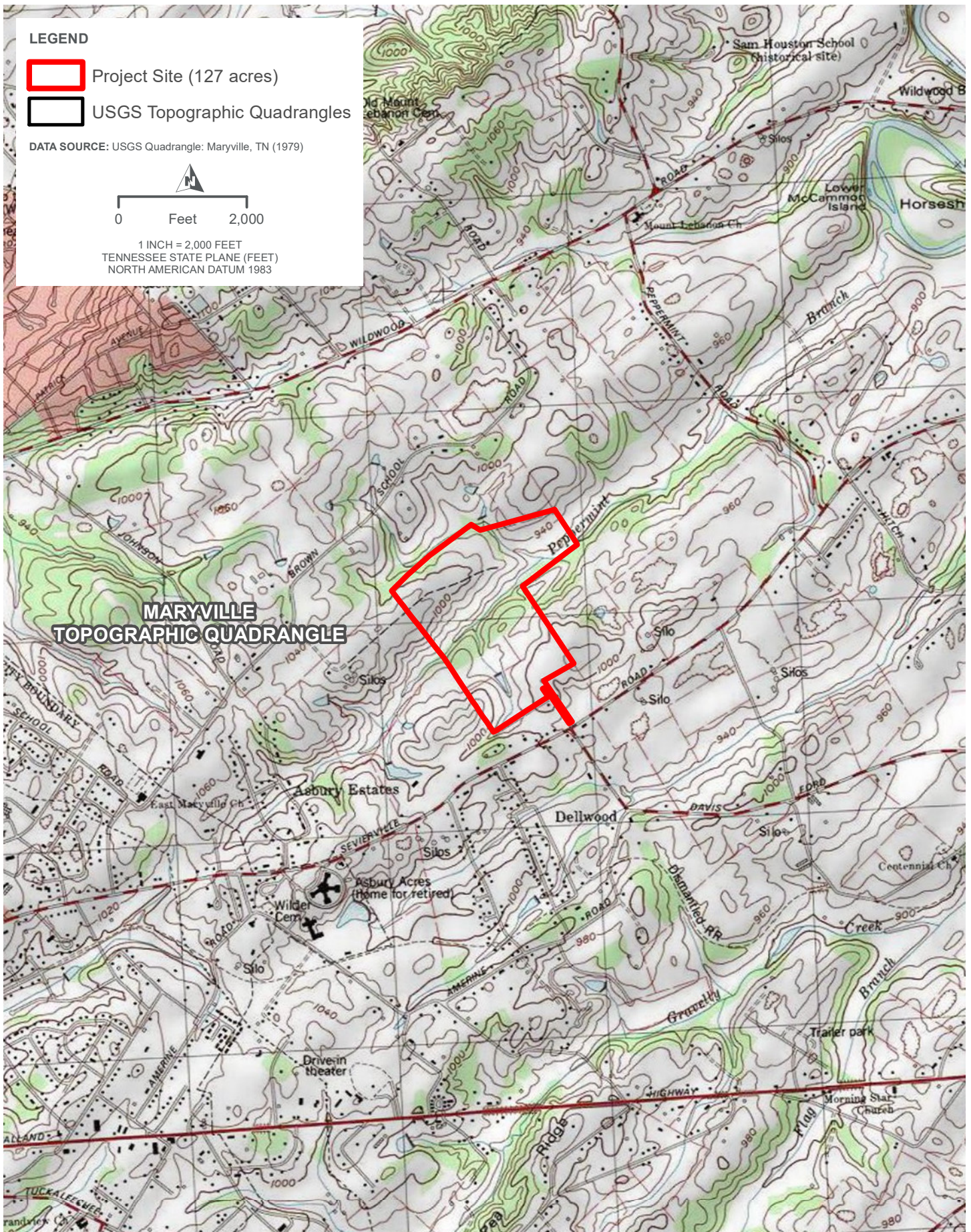
 Project Site (127 acres)

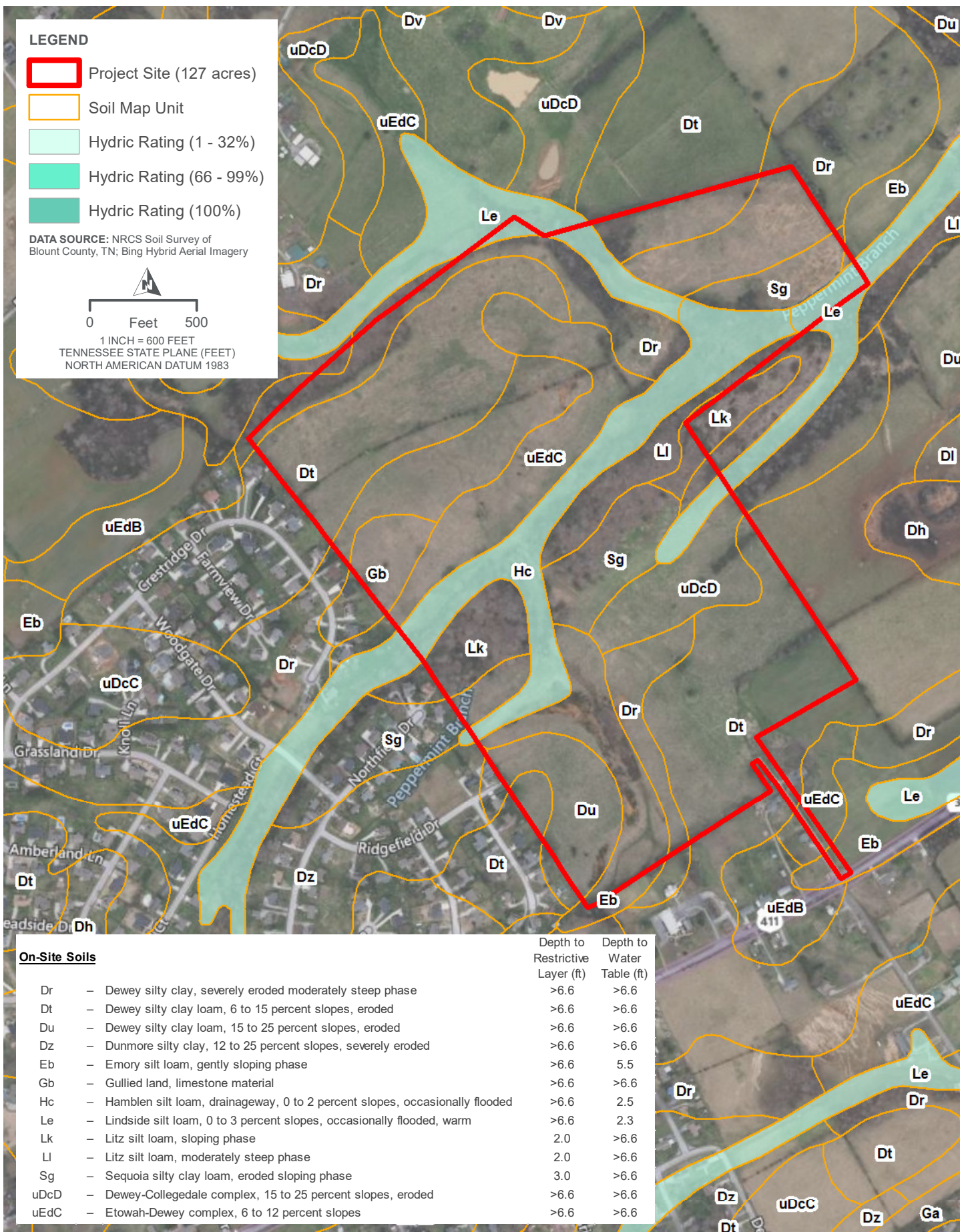
DATA SOURCE: Bing Hybrid Aerial Imagery

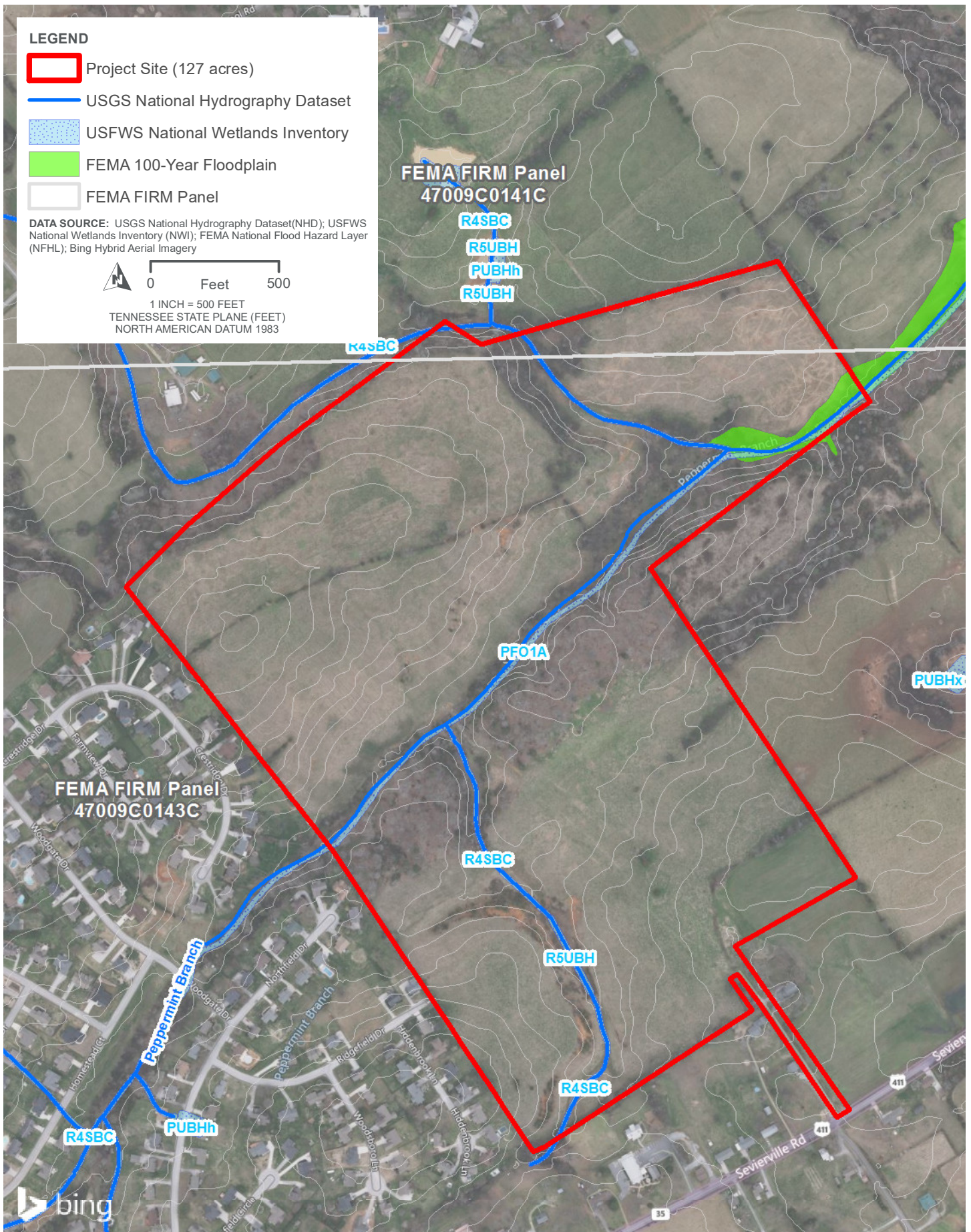


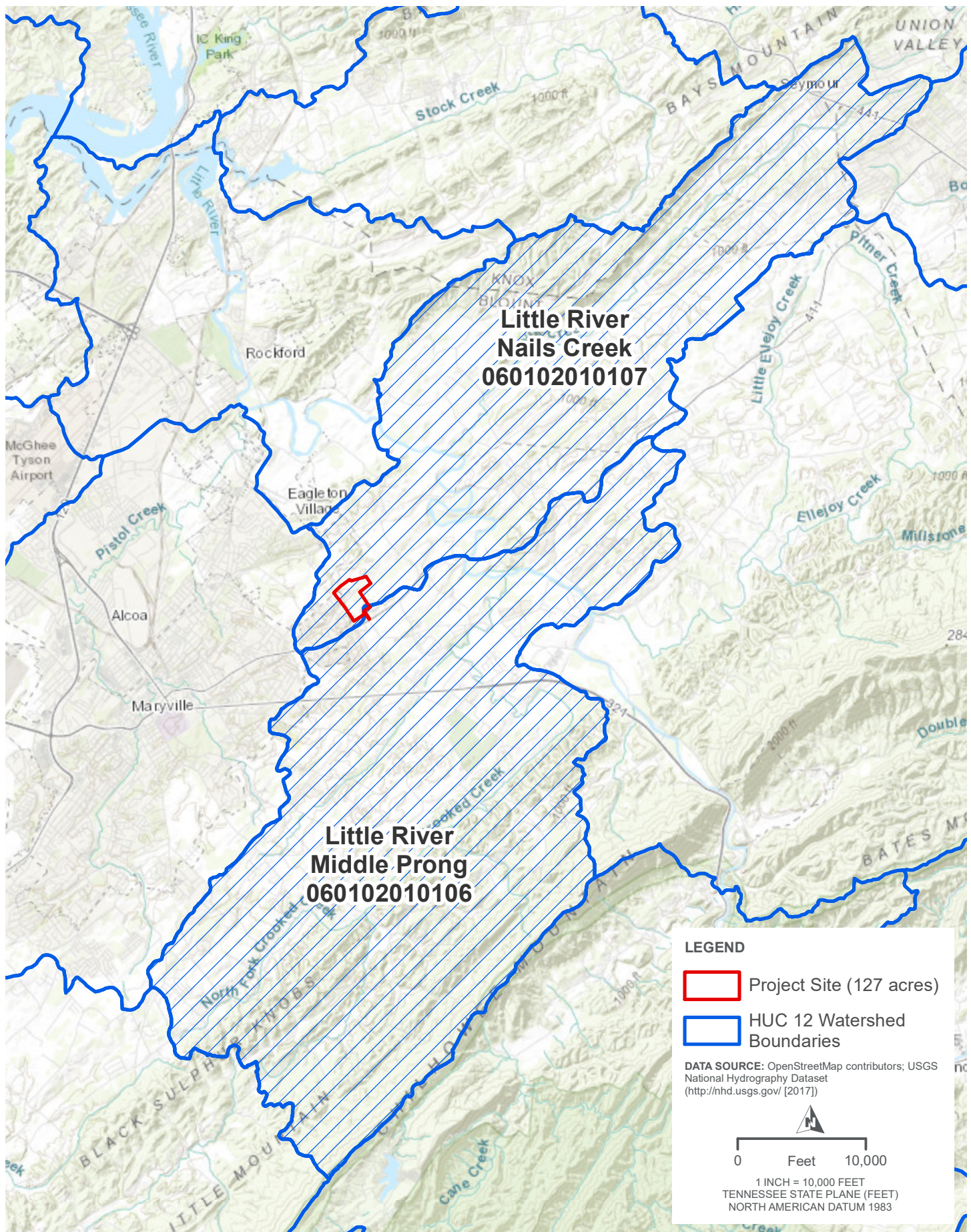
1 INCH = 500 FEET
TENNESSEE STATE PLANE (FEET)
NORTH AMERICAN DATUM 1983

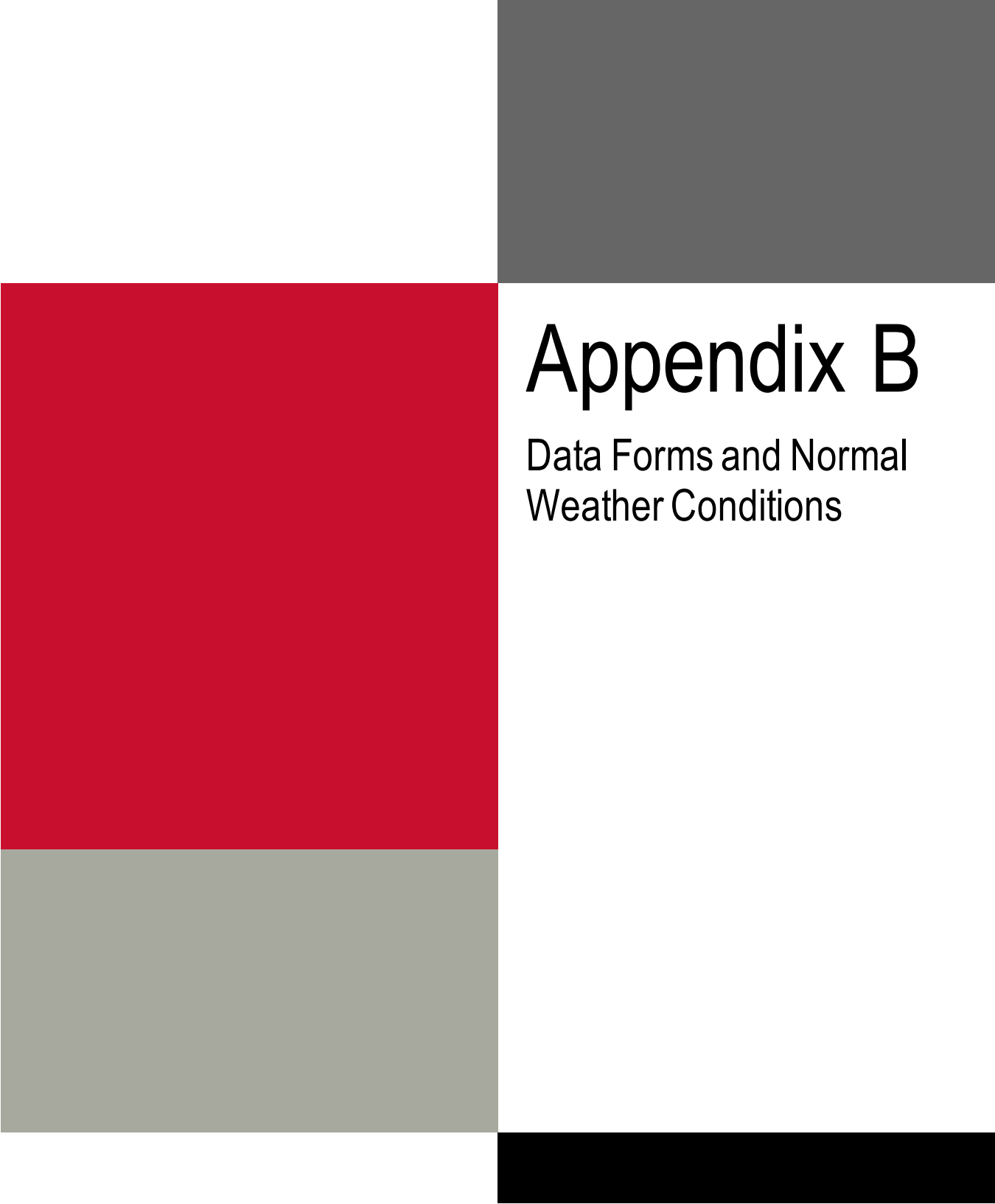










A decorative graphic consisting of four overlapping rectangles: a large red rectangle on the left, a dark gray rectangle at the top right, a light gray rectangle at the bottom left, and a black rectangle at the bottom right.

Appendix B

Data Forms and Normal
Weather Conditions

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)</i>
---	---

Project/Site: SR Maryville East City/County: Blount County Sampling Date: 3/8/2022
 Applicant/Owner: SRC State: TN Sampling Point: DP1-UP1
 Investigator(s): L. Thiem and C. Rycuik Section, Township, Range: _____
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope (%): 2-5
 Subregion (LRR or MLRA): LRR N Lat: 35.780364 Long: -83.910703 Datum: NAD86
 Soil Map Unit Name: Hamblen silt loam, drainageway, 0 to 2 percent slopes, occasionally flooded 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>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> Is the Sampled Area within a Wetland? </td> <td style="width: 40%; padding: 5px;"> Yes _____ No <u>X</u> </td> </tr> </table>	Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>
Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>		
Remarks: Upland point located within a floodplain are off of Peppermint Branch			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ True Aquatic Plants (B14) _____ High Water Table (A2) _____ Hydrogen Sulfide Odor (C1) _____ Saturation (A3) _____ Oxidized Rhizospheres on 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)	<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)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> Wetland Hydrology Present? </td> <td style="width: 40%; padding: 5px;"> Yes _____ No <u>X</u> </td> </tr> </table>	Wetland Hydrology Present?	Yes _____ No <u>X</u>
Wetland Hydrology Present?	Yes _____ No <u>X</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Wetland Hydrology is not present.			

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

 Sampling Point: DP1-UP1

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Celtis occidentalis</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	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>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. <u>Quercus sp.</u>	<u>5</u>	<u>Yes</u>																		
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
<u>25</u> =Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>90</u></td> <td>x 4 = <u>360</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>90</u> (A)</td> <td><u>360</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>4.00</u></td> </tr> </table>	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>90</u>	x 4 = <u>360</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>90</u> (A)	<u>360</u> (B)	Prevalence Index = B/A = <u>4.00</u>	
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>90</u>	x 4 = <u>360</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>90</u> (A)	<u>360</u> (B)																			
Prevalence Index = B/A = <u>4.00</u>																				
50% of total cover: <u>13</u> 20% of total cover: <u>5</u>																				
Sapling/Shrub Stratum (Plot size: <u>30</u>)																				
1. <u>Ligustrum sinense</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u>Problematic Hydrophytic Vegetation¹ (Explain)</u> ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. <u>Rubus occidentalis</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Rosa multiflora</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
<u>25</u> =Total Cover																				
50% of total cover: <u>13</u> 20% of total cover: <u>5</u>																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Poaceae sp. *</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>	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.																
2. <u>Trifolium repens</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Taraxacum officinale</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
<u>45</u> =Total Cover																				
50% of total cover: <u>23</u> 20% of total cover: <u>9</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																
2. _____																				
3. _____																				
4. _____																				
5. _____																				
<u> </u> =Total Cover																				
50% of total cover: <u> </u> 20% of total cover: <u> </u>																				

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

* Wetland status ranges from OBL-UPL. Wetland status given FACU for this survey.

SOIL

Sampling Point: DP1-UP1

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 4/2	100					Loamy/Clayey	
2-20	7.5YR 4/4	100					Loamy/Clayey	

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

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
☐ 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)	
☐ Stripped Matrix (S6)	☐ Piedmont Floodplain Soils (F19) (MLRA 148)	
☐ Dark Surface (S7)	☐ Red Parent Material (F21) (MLRA 127, 147, 148)	

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 <u>X</u>
---	---

Remarks:
 Wetland Soils were not present.

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)</i>
---	---

Project/Site: SR Maryville East City/County: Blount County Sampling Date: 3/8/2022
 Applicant/Owner: SRC State: TN Sampling Point: DP2-UP2
 Investigator(s): L. Thiem and C. Rycuik Section, Township, Range: _____
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope (%): 2-5
 Subregion (LRR or MLRA): LRR N Lat: 35.776183 Long: -83.916881 Datum: NAD86
 Soil Map Unit Name: Hamblen silt loam, drainageway, 0 to 2 percent slopes, occasionally flooded NWI classification: NAD86
 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>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> Is the Sampled Area within a Wetland? </td> <td style="width: 40%; padding: 5px;"> Yes _____ No <u>X</u> </td> </tr> </table>	Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>
Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>		
Remarks: Upland point located uphill from wetland 1.			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ True Aquatic Plants (B14) _____ High Water Table (A2) _____ Hydrogen Sulfide Odor (C1) _____ Saturation (A3) _____ Oxidized Rhizospheres on 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)	<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)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> Wetland Hydrology Present? </td> <td style="width: 40%; padding: 5px;"> Yes _____ No <u>X</u> </td> </tr> </table>	Wetland Hydrology Present?	Yes _____ No <u>X</u>
Wetland Hydrology Present?	Yes _____ No <u>X</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Wetland Hydrology is not present.			

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

 Sampling Point: DP2-UP2

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Quercus alba</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>20.0%</u> (A/B)																
2. <u>Quercus rubra</u>	<u>15</u>	<u>Yes</u>	<u>FACU</u>																	
3. <u>Pinus taeda</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
4. <u>Juniperus virginiana</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>50</u> =Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>50</u></td> <td>x 4 = <u>200</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>60</u> (A)</td> <td><u>230</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>3.83</u></td> </tr> </table>	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>10</u>	x 3 = <u>30</u>	FACU species <u>50</u>	x 4 = <u>200</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>60</u> (A)	<u>230</u> (B)	Prevalence Index = B/A = <u>3.83</u>	
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>10</u>	x 3 = <u>30</u>																			
FACU species <u>50</u>	x 4 = <u>200</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>60</u> (A)	<u>230</u> (B)																			
Prevalence Index = B/A = <u>3.83</u>																				
50% of total cover: <u>25</u> 20% of total cover: <u>10</u>																				
Sapling/Shrub Stratum (Plot size: <u>30</u>)																				
1. <u>Juniperus virginiana</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>																	
2. <u>Rubus occidentalis</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
<u>10</u> =Total Cover																				
50% of total cover: <u>5</u> 20% of total cover: <u>2</u>																				
Herb Stratum (Plot size: <u>5</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
_____ =Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
_____ =Total Cover																				
50% of total cover: _____ 20% of total cover: _____																				

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.)
Wetland vegetation is not present.

SOIL

Sampling Point: DP2-UP2

[illegible]

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)</i>
---	---

Project/Site: SR Maryville East City/County: Blount County Sampling Date: 3/8/2022
 Applicant/Owner: SRC State: TN Sampling Point: DP3-W1
 Investigator(s): L.Thiem and C. Rycuik Section, Township, Range: _____
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2-5
 Subregion (LRR or MLRA): LRR N Lat: 35.776165 Long: -83.917012 Datum: NAD86
 Soil Map Unit Name: Hamblen silt loam, drainageway, 0 to 2 percent slopes, occasionally flooded NWI classification: PFO
 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 _____	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> Is the Sampled Area within a Wetland? </td> <td style="width: 40%; padding: 5px;"> Yes <u>X</u> No _____ </td> </tr> </table>	Is the Sampled Area within a Wetland?	Yes <u>X</u> No _____
Is the Sampled Area within a Wetland?	Yes <u>X</u> No _____		
Remarks: Depression wetland located off of peppermint branch.			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☒ Surface Water (A1) ☐ True Aquatic Plants (B14) ☐ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☐ Saturation (A3) ☐ Oxidized Rhizospheres on 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)	<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 <u>X</u> No _____ Depth (inches): <u>2</u> Water Table Present? Yes _____ No <u>X</u> Depth (inches): <u>0</u> Saturation Present? Yes _____ No <u>X</u> Depth (inches): <u>0</u> (includes capillary fringe)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> Wetland Hydrology Present? </td> <td style="width: 40%; padding: 5px;"> Yes <u>X</u> No _____ </td> </tr> </table>	Wetland Hydrology Present?	Yes <u>X</u> No _____
Wetland Hydrology Present?	Yes <u>X</u> No _____		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Wetland hydrology present.			

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

 Sampling Point: DP3-W1

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Liquidambar styraciflua</u>	<u>20</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Acer rubrum</u>	<u>5</u>	<u>No</u>	<u>FAC</u>
3. <u>Carpinus caroliniana</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>		

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

Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Poaceae sp.*</u>	<u>30</u>	<u>Yes</u>	<u>FACW</u>
2. <u>Carex sp.*</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
<u>40</u> =Total Cover			
50% of total cover: <u>20</u>	20% of total cover: <u>8</u>		

Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Toxicodendron radicans</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: 4 (A)

Total Number of Dominant Species Across All Strata: 5 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>40</u>	x 2 = <u>80</u>
FAC species <u>40</u>	x 3 = <u>120</u>
FACU species <u>15</u>	x 4 = <u>60</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>95</u> (A)	<u>260</u> (B)
Prevalence Index = B/A = <u>2.74</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 X No

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

Wetland Vegetation is present. * Wetland status ranges from UPL-OBL. Wetland status given FACW for this survey.

SOIL

Sampling Point: DP3-W1

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 4/2	100					Loamy/Clayey	
6-20	2.5Y 5/2	80	10YR 5/6	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:		Indicators for Problematic Hydric Soils ³ :
☐ 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)	
☐ Stripped Matrix (S6)	☐ Piedmont Floodplain Soils (F19) (MLRA 148)	
☐ Dark Surface (S7)	☐ Red Parent Material (F21) (MLRA 127, 147, 148)	

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 _____
---	---

Remarks:
Hydric soils present.

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)</i>
---	---

Project/Site: SR Maryville East City/County: Blount County Sampling Date: 3/9/2022
 Applicant/Owner: SRC State: TN Sampling Point: DP3-UP1
 Investigator(s): L. Thiem and C. Rycuik Section, Township, Range: _____
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope (%): 2-5
 Subregion (LRR or MLRA): LRR N Lat: 35.779479 Long: -83.912914 Datum: NAD86
 Soil Map Unit Name: Litz silt loam, moderately steep phase 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>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> Is the Sampled Area within a Wetland? </td> <td style="width: 40%; padding: 5px;"> Yes _____ No <u>X</u> </td> </tr> </table>	Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>
Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>		
Remarks: Upland point located within floodplain of Peppermint Branch			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ True Aquatic Plants (B14) _____ High Water Table (A2) _____ Hydrogen Sulfide Odor (C1) _____ Saturation (A3) _____ Oxidized Rhizospheres on 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)	<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)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> Wetland Hydrology Present? </td> <td style="width: 40%; padding: 5px;"> Yes _____ No <u>X</u> </td> </tr> </table>	Wetland Hydrology Present?	Yes _____ No <u>X</u>
Wetland Hydrology Present?	Yes _____ No <u>X</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Wetland Hydrology is not present.			

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

 Sampling Point: DP3-UP1

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Celtis occidentalis</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>16.7%</u> (A/B)																
2. <u>Pyrus calleryana</u>	<u>5</u>	<u>No</u>	<u>UPL</u>																	
3. <u>Carpinus caroliniana</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>45</u> =Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="text-align: left;">Total % Cover of:</th> <th style="text-align: left;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>10</u></td> <td>x 3 = <u>30</u></td> </tr> <tr> <td>FACU species <u>100</u></td> <td>x 4 = <u>400</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>115</u> (A)</td> <td><u>455</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: right;">Prevalence Index = B/A = <u>3.96</u></td> </tr> </table>	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>10</u>	x 3 = <u>30</u>	FACU species <u>100</u>	x 4 = <u>400</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>115</u> (A)	<u>455</u> (B)	Prevalence Index = B/A = <u>3.96</u>	
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>10</u>	x 3 = <u>30</u>																			
FACU species <u>100</u>	x 4 = <u>400</u>																			
UPL species <u>5</u>	x 5 = <u>25</u>																			
Column Totals: <u>115</u> (A)	<u>455</u> (B)																			
Prevalence Index = B/A = <u>3.96</u>																				
50% of total cover: <u>23</u> 20% of total cover: <u>9</u>																				
Sapling/Shrub Stratum (Plot size: <u>30</u>)																				
1. <u>Rosa multiflora</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
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>																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Poaceae sp. *</u>	<u>30</u>	<u>Yes</u>	<u>FACU</u>	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.																
2. <u>Trifolium repens</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
<u>40</u> =Total Cover																				
50% of total cover: <u>20</u> 20% of total cover: <u>8</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. <u>Lonicera japonica</u>	<u>10</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Present? Yes <u> </u> No <u> X </u>																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
<u>10</u> =Total Cover																				
50% of total cover: <u>5</u> 20% of total cover: <u>2</u>																				

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

* Wetland status ranges from OBL-UPL. Wetland status given FACU for this survey.

SOIL

Sampling Point: DP3-UP1

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 4/4	100					Loamy/Clayey	
2-20	7.5YR 4/4	70	2.5Y 5/4	30	C	M	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) ☐ 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)
--	--	--

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 <u>X</u>
---	---

Remarks:
 Wetland Soils were not present.

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)</i>
---	---

Project/Site: SR Maryville East City/County: Blount County Sampling Date: 3/8/2022
 Applicant/Owner: SRC State: TN Sampling Point: DP4-W2
 Investigator(s): L.Thiem and C. Rycuik Section, Township, Range: _____
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2-5
 Subregion (LRR or MLRA): LRR N Lat: 35.775060 Long: -83.913902 Datum: NAD86
 Soil Map Unit Name: Emory silt loam, gently sloping phase NWI classification: PSS
 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: Depression wetland located within a fenced in area within a cattle pasture
---	--

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ☒ Surface Water (A1) ☐ True Aquatic Plants (B14) ☒ High Water Table (A2) ☐ Hydrogen Sulfide Odor (C1) ☒ Saturation (A3) ☐ Oxidized Rhizospheres on 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)	<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 <u>X</u> No _____ Depth (inches): <u>6</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> 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: Wetland hydrology present.	

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

 Sampling Point: DP4-W2

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>35</u></td> <td>x 2 = <u>70</u></td> </tr> <tr> <td>FAC species <u>90</u></td> <td>x 3 = <u>270</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals <u>125</u> (A)</td> <td><u>340</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.72</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>35</u>	x 2 = <u>70</u>	FAC species <u>90</u>	x 3 = <u>270</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals <u>125</u> (A)	<u>340</u> (B)	Prevalence Index = B/A = <u>2.72</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>35</u>	x 2 = <u>70</u>																			
FAC species <u>90</u>	x 3 = <u>270</u>																			
FACU species <u>0</u>	x 4 = <u>0</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals <u>125</u> (A)	<u>340</u> (B)																			
Prevalence Index = B/A = <u>2.72</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30</u>)																				
1. <u>Carpinus caroliniana</u>	<u>60</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>X</u> <u>2</u> - Dominance Test is >50% <u>X</u> <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)																
2. <u>Platanus occidentalis</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																	
3. <u>Lindera benzoin</u>	<u>10</u>	<u>No</u>	<u>FAC</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: <u>40</u> 20% of total cover: <u>16</u>																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Juncus effusus</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) more in diameter at breast height (DBH), regardless 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.																
2. <u>Carex sp.</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>																	
3. <u>Setaria viridis</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: <u>18</u> 20% of total cover: <u>7</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. <u>Toxicodendron radicans</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: <u>5</u> 20% of total cover: <u>2</u>																				

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

Wetland Vegetation is present

SOIL

Sampling Point: DP4-W2**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 5/2	100					Loamy/Clayey	
10-20	10YR 5/2	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)	☐ 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:

Hydric soils present.

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)</i>
---	---

Project/Site: SR Maryville East City/County: Blount County Sampling Date: 3/8/2022
 Applicant/Owner: SRC State: TN Sampling Point: DP5-UP3
 Investigator(s): L. Thiem and C. Rycuik Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): Concave Slope (%): 2-5
 Subregion (LRR or MLRA): LRR N Lat: 35.774821 Long: -83.913609 Datum: NAD86
 Soil Map Unit Name: Emory silt loam, gently sloping phase 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>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> Is the Sampled Area within a Wetland? </td> <td style="width: 40%; padding: 5px;"> Yes _____ No <u>X</u> </td> </tr> </table>	Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>
Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>		
Remarks: Upslope of Wetland 2			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ True Aquatic Plants (B14) _____ High Water Table (A2) _____ Hydrogen Sulfide Odor (C1) _____ Saturation (A3) _____ Oxidized Rhizospheres on 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)	<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)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> Wetland Hydrology Present? </td> <td style="width: 40%; padding: 5px;"> Yes _____ No <u>X</u> </td> </tr> </table>	Wetland Hydrology Present?	Yes _____ No <u>X</u>
Wetland Hydrology Present?	Yes _____ No <u>X</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Wetland hydrology is not present.			

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

 Sampling Point: DP5-UP3

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>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Rubus occidentalis</i>	25	Yes	FACU
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
		25 =Total Cover	
50% of total cover: <u>13</u>		20% of total cover: <u>5</u>	

Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <i>Poaceae sp.</i>	60	Yes	FACU
2. <i>Allium oleraceum</i>	10	No	FACU
3. <i>Jacobaea vulgaris</i>	20	Yes	UPL
4. <i>Festuca heterophylla</i>	5	No	UPL
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
		95 =Total Cover	
50% of total cover: <u>48</u>		20% of total cover: <u>19</u>	

Woody Vine Stratum (Plot size: <u>30</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: 0 (A)

Total Number of Dominant Species Across All Strata: 3 (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>0</u>	x 2 = <u>0</u>
FAC species <u>0</u>	x 3 = <u>0</u>
FACU species <u>95</u>	x 4 = <u>380</u>
UPL species <u>25</u>	x 5 = <u>125</u>
Column Totals: <u>120</u> (A)	<u>505</u> (B)
Prevalence Index = B/A = <u>4.21</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.)

*Wetland status ranges from OBL-UPL. Wetland status assigned FACU for this survey.

SOIL

Sampling Point: DP5-UP3

[illegible]

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)</i>
---	---

Project/Site: SR Maryville East City/County: Blount County Sampling Date: 3/9/2022
 Applicant/Owner: SRC State: TN Sampling Point: DP6-W3
 Investigator(s): L.Thiem and C. Rycuik Section, Township, Range: _____
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2-5
 Subregion (LRR or MLRA): LRR N Lat: 35.776929 Long: -83.915195 Datum: NAD86
 Soil Map Unit Name: Litz silt loam, moderately steep phase NWI classification: PEM
 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 _____	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> Is the Sampled Area within a Wetland? </td> <td style="width: 40%; padding: 5px;"> Yes <u>X</u> No _____ </td> </tr> </table>	Is the Sampled Area within a Wetland?	Yes <u>X</u> No _____
Is the Sampled Area within a Wetland?	Yes <u>X</u> No _____		
Remarks: Wetland abutting a UNT to Peppermint Branch			

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 <u>X</u> No _____ Depth (inches): <u>3</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>0</u> (includes capillary fringe)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> Wetland Hydrology Present? </td> <td style="width: 40%; padding: 5px;"> Yes <u>X</u> No _____ </td> </tr> </table>	Wetland Hydrology Present?	Yes <u>X</u> No _____
Wetland Hydrology Present?	Yes <u>X</u> No _____		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Wetland hydrology present.			

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

 Sampling Point: DP6-W3

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</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>100.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>25</u></td> <td>x 2 = <u>50</u></td> </tr> <tr> <td>FAC species <u>70</u></td> <td>x 3 = <u>210</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>105</u> (A)</td> <td><u>305</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.90</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>25</u>	x 2 = <u>50</u>	FAC species <u>70</u>	x 3 = <u>210</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>105</u> (A)	<u>305</u> (B)	Prevalence Index = B/A = <u>2.90</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>25</u>	x 2 = <u>50</u>																			
FAC species <u>70</u>	x 3 = <u>210</u>																			
FACU species <u>5</u>	x 4 = <u>20</u>																			
UPL species <u>5</u>	x 5 = <u>25</u>																			
Column Totals: <u>105</u> (A)	<u>305</u> (B)																			
Prevalence Index = B/A = <u>2.90</u>																				
50% of total cover: _____		20% of total cover: _____																		
Sapling/Shrub Stratum (Plot size: <u>30</u>)																				
1. _____	_____	_____	_____																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
=Total Cover				Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain)																
50% of total cover: _____		20% of total cover: _____																		
Herb Stratum (Plot size: <u>5</u>)				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.																
1. <u>Juncus effusus</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>																	
2. <u>Carex sp. *</u>	<u>10</u>	<u>No</u>	<u>FACW</u>																	
3. <u>Setaria viridis</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>																	
4. <u>Rumex obtusifolius</u>	<u>5</u>	<u>No</u>	<u>FACU</u>																	
5. <u>Ambrosia acanthicarpa</u>	<u>5</u>	<u>No</u>	<u>UPL</u>																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: <u>38</u>		20% of total cover: <u>15</u>																		
Woody Vine Stratum (Plot size: <u>30</u>)				Hydrophytic Vegetation Present? Yes <u>X</u> No <u> </u>																
1. <u>Toxicodendron radicans</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
=Total Cover																				
50% of total cover: <u>15</u>		20% of total cover: <u>6</u>																		

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

*Wetland indicator status ranges from OBL-UPL. FAWC status assigned for this survey.

SOIL

Sampling Point: DP6-W3

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		
0-20	2.5Y 4/2	90	7.5YR 5/8	10	C	M	Loamy/Clayey	Prominent redox concentrations
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: 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: _____								
Depth (inches): _____						Hydric Soil Present? Yes <u> X </u> No <u> </u>		
Remarks: Hydric soils present.								

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)</i>
---	---

Project/Site: SR Maryville East City/County: Blount County Sampling Date: 3/9/2022
 Applicant/Owner: SRC State: TN Sampling Point: DP7-UP4
 Investigator(s): L. Thiem and C. Rycuik Section, Township, Range: _____
 Landform (hillside, terrace, etc.): hillside Local relief (concave, convex, none): concave Slope (%): 2-5
 Subregion (LRR or MLRA): LRR N Lat: 35.777013 Long: -83.915140 Datum: NAD86
 Soil Map Unit Name: Litz silt loam, moderately steep phase 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>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> Is the Sampled Area within a Wetland? </td> <td style="width: 40%; padding: 5px;"> Yes _____ No <u>X</u> </td> </tr> </table>	Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>
Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>		
Remarks: Upland point located uphill from Wetland 3 and Wetland 4			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> _____ Surface Water (A1) _____ True Aquatic Plants (B14) _____ High Water Table (A2) _____ Hydrogen Sulfide Odor (C1) _____ Saturation (A3) _____ Oxidized Rhizospheres on 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)	<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)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> Wetland Hydrology Present? </td> <td style="width: 40%; padding: 5px;"> Yes _____ No <u>X</u> </td> </tr> </table>	Wetland Hydrology Present?	Yes _____ No <u>X</u>
Wetland Hydrology Present?	Yes _____ No <u>X</u>		
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:			
Remarks: Wetland Hydrology is not present.			

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

 Sampling Point: DP7-UP4

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. _____	_____	_____	_____	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>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0.0%</u> (A/B)																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
=Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <td style="width: 50%;">Total % Cover of:</td> <td style="width: 50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>0</u></td> <td>x 3 = <u>0</u></td> </tr> <tr> <td>FACU species <u>90</u></td> <td>x 4 = <u>360</u></td> </tr> <tr> <td>UPL species <u>5</u></td> <td>x 5 = <u>25</u></td> </tr> <tr> <td>Column Totals: <u>95</u> (A)</td> <td><u>385</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>4.05</u></td> </tr> </table>	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>90</u>	x 4 = <u>360</u>	UPL species <u>5</u>	x 5 = <u>25</u>	Column Totals: <u>95</u> (A)	<u>385</u> (B)	Prevalence Index = B/A = <u>4.05</u>	
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>90</u>	x 4 = <u>360</u>																			
UPL species <u>5</u>	x 5 = <u>25</u>																			
Column Totals: <u>95</u> (A)	<u>385</u> (B)																			
Prevalence Index = B/A = <u>4.05</u>																				
50% of total cover: _____ 20% of total cover: _____																				
Sapling/Shrub Stratum (Plot size: <u>30</u>)																				
1. <i>Rosa multiflora</i>	15	Yes	FACU																	
2. <i>Juniperus virginiana</i>	5	Yes	FACU																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
20 =Total Cover																				
50% of total cover: <u>10</u> 20% of total cover: <u>4</u>																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <i>Poaceae sp. *</i>	30	Yes	FACU																	
2. <i>Trifolium repens</i>	15	Yes	FACU																	
3. <i>Duchesnea indica</i>	5	No	FACU																	
4. <i>Allium allegheniense</i>	5	No	UPL																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
55 =Total Cover																				
50% of total cover: <u>28</u> 20% of total cover: <u>11</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. <i>Lonicera japonica</i>	20	Yes	FACU																	
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
20 =Total Cover																				
50% of total cover: <u>10</u> 20% of total cover: <u>4</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 <u>X</u>
--	-----------	-------------

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

* Wetland status ranges from OBL-UPL. Wetland status given FACU for this survey.

SOIL

Sampling Point: DP7-UP4

[illegible]

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>OMB Control #: 0710-xxxx, Exp: Pending Requirement Control Symbol EXEMPT: (Authority: AR 335-15, paragraph 5-2a)</i>
---	---

Project/Site: SR Maryville East City/County: Blount County Sampling Date: 3/9/2022
 Applicant/Owner: SRC State: TN Sampling Point: DP9-W4
 Investigator(s): L.Thiem and C. Rycuik Section, Township, Range: _____
 Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): 2-5
 Subregion (LRR or MLRA): LRR N Lat: 35.777079 Long: -83.915881 Datum: NAD86
 Soil Map Unit Name: Litz silt loam, moderately steep phase NWI classification: PFO
 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: Depression wetland located abutting Peppermint Branch.	

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 <u>X</u> No _____ Depth (inches): <u>2</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>12</u> 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: Wetland hydrology present.	

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

 Sampling Point: DP9-W4

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Platanus occidentalis</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>85.7%</u> (A/B)																
2. <u>Acer rubrum</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
3. <u>Carpinus caroliniana</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>																	
4. <u>Pinus taeda</u>	<u>5</u>	<u>No</u>	<u>FAC</u>																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
<u>45</u> =Total Cover				Prevalence Index worksheet: <table style="width: 100%;"> <tr> <th style="width: 50%;">Total % Cover of:</th> <th style="width: 50%;">Multiply by:</th> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>20</u></td> <td>x 2 = <u>40</u></td> </tr> <tr> <td>FAC species <u>50</u></td> <td>x 3 = <u>150</u></td> </tr> <tr> <td>FACU species <u>5</u></td> <td>x 4 = <u>20</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>75</u> (A)</td> <td><u>210</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align: center;">Prevalence Index = B/A = <u>2.80</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>20</u>	x 2 = <u>40</u>	FAC species <u>50</u>	x 3 = <u>150</u>	FACU species <u>5</u>	x 4 = <u>20</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>75</u> (A)	<u>210</u> (B)	Prevalence Index = B/A = <u>2.80</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>20</u>	x 2 = <u>40</u>																			
FAC species <u>50</u>	x 3 = <u>150</u>																			
FACU species <u>5</u>	x 4 = <u>20</u>																			
UPL species <u>0</u>	x 5 = <u>0</u>																			
Column Totals: <u>75</u> (A)	<u>210</u> (B)																			
Prevalence Index = B/A = <u>2.80</u>																				
50% of total cover: <u>23</u> 20% of total cover: <u>9</u>																				
Sapling/Shrub Stratum (Plot size: <u>30</u>)																				
1. <u>Rosa multiflora</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Indicators: <u> </u> 1 - Rapid Test for Hydrophytic Vegetation ☒ 2 - Dominance Test is >50% ☒ 3 - Prevalence Index is ≤3.0 ¹ <u> </u> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
<u>5</u> =Total Cover																				
50% of total cover: <u>3</u> 20% of total cover: <u>1</u>																				
Herb Stratum (Plot size: <u>5</u>)																				
1. <u>Setaria viridis</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	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.																
2. <u>Poaceae sp.</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
6. _____	_____	_____	_____																	
7. _____	_____	_____	_____																	
8. _____	_____	_____	_____																	
9. _____	_____	_____	_____																	
10. _____	_____	_____	_____																	
11. _____	_____	_____	_____																	
<u>15</u> =Total Cover																				
50% of total cover: <u>8</u> 20% of total cover: <u>3</u>																				
Woody Vine Stratum (Plot size: <u>30</u>)																				
1. <u>Toxicodendron radicans</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Present? Yes <u>X</u> No _____																
2. _____	_____	_____	_____																	
3. _____	_____	_____	_____																	
4. _____	_____	_____	_____																	
5. _____	_____	_____	_____																	
<u>10</u> =Total Cover																				
50% of total cover: <u>5</u> 20% of total cover: <u>2</u>																				

 Remarks: (Include photo numbers here or on a separate sheet.)
 Wetland Vegetation is present

SOIL

Sampling Point: DP9-W4

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		
0-20	2.5Y 3/2	90	7.5YR 4/6	10	C	M	Loamy/Clayey	Prominent redox concentrations
¹ Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. ²Location: 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)			☒ X 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)			☒ X 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 <u>X</u> No _____		
Depth (inches): _____								
Remarks: Hydric soils present.								

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT to Peppermint Branch		Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik		Project ID : SR Maryville East
Site Name/Description: S1		
Site Location: Located in the northeastern border and flows into Peppermint Branch		
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)		Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches		35.780653/-83.913326
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : ESRL and AHPS		
Watershed Size : 44, 971 acres	County: Blount	
Soil Type(s) / Geology : Linside silt loam, 0 to 3 percent slopes, occasionally flooded, warm		USDA: Web Soil Survey Source:
Surrounding Land Use : Residential and Agricultural use		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe Moderate 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	✓	WWC
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 = Stream

Secondary Indicator Score (if applicable) = 23

Justification / Notes :

This is a perennial stream that flows into Peppermint Branch. Bank Width ranges from 3 to 6 feet and Bank Height ranges from 6 inches to 3 feet. Water depth at the time of the survey ranged from 2 inches to 2 feet. A hybrid blue gill was found swimming in this stream along with a mud salamander.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =11.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal = 4)		Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel		0	1	2	3
15. Water in channel and >48 hours since sig. rain	NA	0	1	2	3
16. Leaf litter in channel (January – September)		1.5	1	0.5	0
17. Sediment on plants or on debris		0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)		0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel		No = 0		Yes = 1.5	

C. Biology (Subtotal = 7.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed ₁	3	2	1	0
21. Rooted plants in the thalweg ₁	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28. Wetland plants in channel bed ₂	0	0.5	1	1.5

1 Focus is on the presence of **terrestrial** plants.

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

Total Points = 23

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

Notes : Sorting of gravel from sandy substrates occurred throughout the stream. One mud salamander, one hybrid blue gill, and several left handed snails were observed within this stream. Cattle have crossed this stream.

[illegible]

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: Peppermint Branch		Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik		Project ID : SR Maryville East
Site Name/Description: S2		
Site Location: Located in the middle of the project boundary		
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)		Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches		35.778481/-83.914138
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : ESRL and AHPS		
Watershed Size : 44, 971 acres	County: Blount	
Soil Type(s) / Geology : Linside silt loam, 0 to 3 percent slopes, occasionally flooded, warm		USDA: Web Soil Survey Source:
Surrounding Land Use : Residential and Agricultural use		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe Moderate 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	✓	WWC
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 = Stream

Secondary Indicator Score (if applicable) = 36

Justification / Notes :

This stream is Peppermint Branch which starts off property and flows off property.
Bank width ranged from 6 to 8 feet and Bank Height ranged from 2 to 4 feet. Water depth in the channel ranged from 6 inches to 2 feet.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal =19.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

B. Hydrology (Subtotal = 6)		Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel		0	1	2	3
15. Water in channel and >48 hours since sig. rain	NA	0	1	2	3
16. Leaf litter in channel (January – September)		1.5	1	0.5	0
17. Sediment on plants or on debris		0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)		0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel		No = 0		Yes = 1.5	

C. Biology (Subtotal = 10.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed ₁	3	2	1	0
21. Rooted plants in the thalweg ₁	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28. Wetland plants in channel bed ₂	0	0.5	1	1.5

1 Focus is on the presence of **terrestrial** plants.

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

Total Points = 36

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

Notes : Sorting of gravel from sandy substrates occurred throughout the stream. Several scuds were found within the stream, cricket frogs were heard coming from the stream

[illegible]

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT to Peppermint Branch		Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik		Project ID : SR Maryville East
Site Name/Description: S3		
Site Location: Located in the middle of the project boundary and flows into peppermint branch		
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)		Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches		35.775991/-83.914959
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : ESRL and AHPS		
Watershed Size : 44, 971 acres	County: Blount	
Soil Type(s) / Geology : Linside silt loam, 0 to 3 percent slopes, occasionally flooded, warm		USDA: Web Soil Survey Source:
Surrounding Land Use : Residential and Agricultural use		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe Moderate 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	✓	WWC
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 = Stream

Secondary Indicator Score (if applicable) = 3

Justification / Notes :

This stream flows south to north across the project boundary. An ephemeral flows into this stream.

Bank width ranged from 2 to 4 feet and Bank Height ranged from 6 inches to 1 foot. Water depth at the time of the survey was 6 inches to 1 foot.

Secondary Field Indicator Evaluation

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

B. Hydrology (Subtotal = 6)		Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel		0	1	2	3
15. Water in channel and >48 hours since sig. rain	NA	0	1	2	3
16. Leaf litter in channel (January – September)		1.5	1	0.5	0
17. Sediment on plants or on debris		0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)		0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel		No = 0		Yes = 1.5	

C. Biology (Subtotal = 6.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed ₁	3	2	1	0
21. Rooted plants in the thalweg ₁	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28. Wetland plants in channel bed ₂	0	0.5	1	1.5

1 Focus is on the presence of **terrestrial** plants.

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

Total Points = 20.5

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

Notes : Very limited sorting of gravel from silt and sandy substrates. One green frog was observed near the channel.

[illegible]

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: UNT to Peppermint Branch		Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik		Project ID : SR Maryville East
Site Name/Description: S4		
Site Location: Located in the middle of the project boundary and a spring to Peppermint Branch		
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)		Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches		35.779668/-83.9113018
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : ESRL and AHPS		
Watershed Size : 44, 971 acres	County: Blount	
Soil Type(s) / Geology : Linside silt loam, 0 to 3 percent slopes, occasionally flooded, warm		USDA: Web Soil Survey Source:
Surrounding Land Use : Residential and Agricultural use		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe Moderate 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	✓	WWC
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 = Stream

Secondary Indicator Score (if applicable) = 24

Justification / Notes :

This stream is a small spring to Peppermint Branch

Bank width ranged from 1 to 2 feet and Bank Height ranged from 6 inches to 1 foot. Water depth in the channel ranged from 6 inches to 8 inches

Secondary Field Indicator Evaluation

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

B. Hydrology (Subtotal = 3.5)		Absent	Weak	Moderate	Strong
14. Subsurface flow/discharge into channel		0	1	2	3
15. Water in channel and >48 hours since sig. rain	NA	0	1	2	3
16. Leaf litter in channel (January – September)		1.5	1	0.5	0
17. Sediment on plants or on debris		0	0.5	1	1.5
18. Organic debris lines or piles (wrack lines)		0	0.5	1	1.5
19. Hydric soils in channel bed or sides of channel		No = 0		Yes = 1.5	

C. Biology (Subtotal = 10.5)	Absent	Weak	Moderate	Strong
20. Fibrous roots in channel bed ₁	3	2	1	0
21. Rooted plants in the thalweg ₁	3	2	1	0
22. Crayfish in stream (exclude in floodplain)	0	1	2	3
23. Bivalves/mussels	0	1	2	3
24. Amphibians	0	0.5	1	1.5
25. Macrobenthos (record type & abundance)	0	1	2	3
26. Filamentous algae; periphyton	0	1	2	3
27. Iron oxidizing bacteria/fungus	0	0.5	1	1.5
28. Wetland plants in channel bed ₂	0	0.5	1	1.5

1 Focus is on the presence of **terrestrial** plants.

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

Total Points = 24

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

Notes :

[illegible]

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC 1 (Erosional Gully)		Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik		Project ID : SR Maryville East
Site Name/Description: WWC-1		
Site Location: Located in the middle of the project boundary		
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)		Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches		35.777866/-83.915991
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : ESRL and AHPS		
Watershed Size : 44, 971 acres	County: Blount	
Soil Type(s) / Geology : Linside silt loam, 0 to 3 percent slopes, occasionally flooded, warm		USDA: Web Soil Survey Source:
Surrounding Land Use : Residential and Agricultural use		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe Moderate 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	✓	WWC
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 = WWC

Secondary Indicator Score (if applicable) =

Justification / Notes :

This is an erosional gully located within an agricultural cattle field.

Secondary Field Indicator Evaluation

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

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

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

1 Focus is on the presence of **terrestrial** plants.

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

Total Points =

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

Notes :

[illegible]

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC 2		Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik		Project ID : SR Maryville East
Site Name/Description: WWC-2		
Site Location: Located in the northern portion of the project boundary		
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)		Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches		35.779790/-83.917998
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : ESRL and AHPS		
Watershed Size : 44, 971 acres	County: Blount	
Soil Type(s) / Geology : Linside silt loam, 0 to 3 percent slopes, occasionally flooded, warm		USDA: Web Soil Survey Source:
Surrounding Land Use : Residential and Agricultural use		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe Moderate 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	✓	WWC
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 = WWC

Secondary Indicator Score (if applicable) =

Justification / Notes :

This WWC flows down from agricultural field down through a forested area.

Secondary Field Indicator Evaluation

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

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

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

1 Focus is on the presence of **terrestrial** plants.

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

Total Points =

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

Notes :

[illegible]

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC 3		Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik		Project ID : SR Maryville East
Site Name/Description: WWC-3		
Site Location: Located in the northern portion of the project boundary. WWC 3 branches from WWC 4		
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)		Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches		35.780164/-83.917546
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : ESRL and AHPS		
Watershed Size : 44, 971 acres	County: Blount	
Soil Type(s) / Geology : Linside silt loam, 0 to 3 percent slopes, occasionally flooded, warm		USDA: Web Soil Survey Source:
Surrounding Land Use : Residential and Agricultural use		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe Moderate 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		WWC
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 = WWC

Secondary Indicator Score (if applicable) =

Justification / Notes :

This WWC flows down from agricultural field down through a forested area.

Secondary Field Indicator Evaluation

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

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

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

1 Focus is on the presence of **terrestrial** plants.

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

Total Points =

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

Notes :

[illegible]

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC 4		Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik		Project ID : SR Maryville East
Site Name/Description: WWC-4		
Site Location: Located in the northern portion of the project boundary. WWC 3 branches from WWC 4		
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)		Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches		35.780172/-83.917557
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : ESRL and AHPS		
Watershed Size : 44, 971 acres	County: Blount	
Soil Type(s) / Geology : Linside silt loam, 0 to 3 percent slopes, occasionally flooded, warm		USDA: Web Soil Survey Source:
Surrounding Land Use : Residential and Agricultural use		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe Moderate 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		WWC
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 = WWC

Secondary Indicator Score (if applicable) =

Justification / Notes :

This WWC flows down from agricultural field down through a forested area.

Secondary Field Indicator Evaluation

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

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

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

1 Focus is on the presence of **terrestrial** plants.

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

Total Points =

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

Notes :

[illegible]

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC 5		Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik		Project ID : SR Maryville East
Site Name/Description: WWC-5		
Site Location: Located in the northern portion of the project boundary.		
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)		Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches		35.780874/-83.914401
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : ESRL and AHPS		
Watershed Size : 44, 971 acres	County: Blount	
Soil Type(s) / Geology : Linside silt loam, 0 to 3 percent slopes, occasionally flooded, warm		USDA: Web Soil Survey Source:
Surrounding Land Use : Residential and Agricultural use		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe Moderate 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	✓	WWC
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 = WWC

Secondary Indicator Score (if applicable) =

Justification / Notes :

This WWC flows down from agricultural field down through a forested area.

Secondary Field Indicator Evaluation

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

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

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

1 Focus is on the presence of **terrestrial** plants.

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

Total Points =

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

Notes :

[illegible]

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC 6		Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik		Project ID : SR Maryville East
Site Name/Description: WWC-6		
Site Location: Located centrally within the project site. Flows down into peppermint branch		
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)		Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches		35.778553/-83.913394
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : ESRL and AHPS		
Watershed Size : 44, 971 acres	County: Blount	
Soil Type(s) / Geology : Linside silt loam, 0 to 3 percent slopes, occasionally flooded, warm		USDA: Web Soil Survey Source:
Surrounding Land Use : Residential and Agricultural use		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe Moderate 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	✓	WWC
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 = WWC

Secondary Indicator Score (if applicable) = 7.5

Justification / Notes :

This WWC flows down from agricultural field down through a forested area. Bank width ranges from 1 to 2 feet and Bank Height ranges from 6 inches to 2 feet. It had rained the day before so water was flowing in this channel

Secondary Field Indicator Evaluation

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

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

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

1 Focus is on the presence of **terrestrial** plants.

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

Total Points = 7.5

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

Notes : One large headcut starts this WWC. Grasses were growing in portions of this WWC.

[illegible]

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC 7		Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik		Project ID : SR Maryville East
Site Name/Description: WWC-7		
Site Location: Located centrally within the project site. Flows down into peppermint branch		
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)		Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches		35.777910/-83.914244
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : ESRL and AHPS		
Watershed Size : 44, 971 acres	County: Blount	
Soil Type(s) / Geology : Linside silt loam, 0 to 3 percent slopes, occasionally flooded, warm		USDA: Web Soil Survey Source:
Surrounding Land Use : Residential and Agricultural use		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe Moderate 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	✓	WWC
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 = WWC

Secondary Indicator Score (if applicable) = 7.5

Justification / Notes :

This WWC flows down from agricultural field down through a forested area. Bank width ranges from 1 to 3 feet and Bank Height ranges from 6 inches to 2 feet. Since it rained the night before water was flowing in the channel.

Secondary Field Indicator Evaluation

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

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

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

1 Focus is on the presence of **terrestrial** plants.

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

Total Points = 7.5

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

Notes : Grasses were growing in portions of this WWC.

[illegible]

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC 8		Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyrandia Thiem and Caroline Rycuik		Project ID : SR Maryville East
Site Name/Description: WWC-8		
Site Location: Located centrally within the project site. Flows down into peppermint branch		
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)		Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches		35.777043/-83.916247
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : ESRL and AHPS		
Watershed Size : 44, 971 acres	County: Blount	
Soil Type(s) / Geology : Linside silt loam, 0 to 3 percent slopes, occasionally flooded, warm		USDA: Web Soil Survey Source:
Surrounding Land Use : Residential and Agricultural use		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe Moderate 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	✓	WWC
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 = WWC

Secondary Indicator Score (if applicable) = 7.5

Justification / Notes :

This WWC flows from an agricultural cattle field down into peppermint branch. Bank width was about 1 foot long and bank height ranges from 6 inches to 1 foot. No water was within the channel during the time of the survey.

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 4.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

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

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

1 Focus is on the presence of **terrestrial** plants.

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

Total Points = 6

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

Notes : Grasses were growing in portions of this WWC. Flows into Peppermint Branch. Cows have been walking through this WWC.

[illegible]

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC 9		Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyrandia Thiem and Caroline Rycuik		Project ID : SR Maryville East
Site Name/Description: WWC-9		
Site Location: Located centrally within the project site. Flows down into peppermint branch		
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)		Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches		35.776004/-83.915076
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : ESRL and AHPS		
Watershed Size : 44, 971 acres	County: Blount	
Soil Type(s) / Geology : Linside silt loam, 0 to 3 percent slopes, occasionally flooded, warm		USDA: Web Soil Survey Source:
Surrounding Land Use : Residential and Agricultural use		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe Moderate 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	✓	WWC
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 = WWC

Secondary Indicator Score (if applicable) = 7.5

Justification / Notes :

This WWC flows from an agricultural cattle field down into stream 3. Bank width was about 1 to 3 feet long and bank height ranges from 6 inches to 1 foot. Since it rained the night before very little water was flowing in the channel

Secondary Field Indicator Evaluation

A. Geomorphology (Subtotal = 4.5)	Absent	Weak	Moderate	Strong
1. Continuous bed and bank	0	1	2	3
2. Sinuous channel	0	1	2	3
3. In-channel structure: riffle-pool sequences	0	1	2	3
4. Sorting of soil textures or other substrate	0	1	2	3
5. Active/relic floodplain	0	0.5	1	1.5
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	0.5	1	1.5
9. Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. At least second order channel on existing USGS or NRCS map	No = 0		Yes = 3	

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

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

1 Focus is on the presence of **terrestrial** plants.

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

Total Points = 6

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

Notes : This WWC has a small headcut starting it within the cow pasture and some small logs acting as grade controls

[illegible]

Hydrologic Determination Field Data Sheet

Tennessee Division of Water Pollution Control, Version 1.5

Named Waterbody: WWC 10		Date/Time: 3/8/2022
Assessors/Affiliation: HDR INC/ Lyranda Thiem and Caroline Rycuik		Project ID : SR Maryville East
Site Name/Description: WWC-10		
Site Location: Located on the southern end of the Site and flows into S3		
HUC (12 digit): Big Sandy River Headwaters (Hydrologic Unit Code [HUC] (060400050501)		Lat/Long:
Previous Rainfall (7-days) : In the previous 7 days it rained 0.75 inches		35.773757/-83.913441
Precipitation this Season vs. Normal : abnormally wet elevated average low abnormally dry unknown		
Source of recent & seasonal precip data : ESRL and AHPS		
Watershed Size : 44, 971 acres	County: Blount	
Soil Type(s) / Geology : Linside silt loam, 0 to 3 percent slopes, occasionally flooded, warm		USDA: Web Soil Survey Source:
Surrounding Land Use : Residential and Agricultural use		
Degree of historical alteration to natural channel morphology & hydrology (circle one & describe fully in Notes) : Severe Moderate 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	✓	WWC
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 = WWC

Secondary Indicator Score (if applicable) = 9.5

Justification / Notes :

This WWC flows from an agricultural cattle field down into stream 3. Bank width was about 2 to 3 feet long and bank height ranges from 6 inches to 1 foot. On the first day of the site visit this feature was not flowing, but on the second day it rained causing this feature to flow.

Secondary Field Indicator Evaluation

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

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

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

1 Focus is on the presence of **terrestrial** plants.

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

Total Points = 9.5

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

Notes : The second half of this channel loses the bed and bank and instead acts as sheet flow over grasses within the pasture.

[illegible]

March 2022 Mobilization			
	<u>1st Month Prior</u>	<u>2nd Month prior</u>	<u>3rd Month Prior</u>
Criteria- values are in inches	February- 22	January- 22	December- 21
Standard Deviation	1.91	2.00	2.25
Minus 1 Std. Deviation	1.84	2.34	2.15
Normal Precipitation	4.03	4.34	4.40
Plus 1 Std. Deviation	5.94	6.34	6.65
Actual Estimated Rainfall	15.0	8.0	5.0
Condition (elevated, low, average)	Elevated	Elevated	Average
Conditional Score	3	3	2
Weight	3	2	1
Product	9	6	2
		Sum=	17
Overall Wetness*			Elevated



Appendix C

Photographs

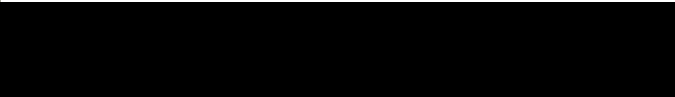




Photo 1- Stream 2 (Peppermint Branch), facing east and downstream.



Photo 2- Stream 2 (Peppermint Branch), facing west and upstream.



Photo 3- Stream 1 (UNT to Peppermint Branch), facing south and downstream.



Photo 4- Stream 1 (UNT to Peppermint Branch), facing north and upstream.



Photo 5- Stream 3 (UNT to Peppermint Branch), facing northeast and downstream.



Photo 6- Stream 3 (UNT to Peppermint Branch), facing southwest and downstream.



Photo 7- WWC 1, facing southwest and downstream.



Photo 8- WWC1, facing northeast and upstream.



Photo 9- WWC2, facing north and downstream.



Photo 10- WWC2, facing south and upstream.



Photo 11- WWC3, facing north and downstream.



Photo 12- WWC3, facing south and upstream.



Photo 13- WWC4, facing north and downstream.



Photo 14- WWC4, facing south and upstream.



Photo 15-WWC5, facing east and downstream.



Photo 16- WWC5, facing west and upstream.



Photo 17- WWC6, facing southeast and upstream.



Photo 18-WWC7, facing south and upstream.



Photo 19- WWC8, facing northwest and upstream.



Photo 20- WWC8, facing southeast and downstream.



Photo 21- WWC9, facing southwest and upstream.



Photo 22- WWC10, facing east and downstream.



Photo 23- WWC10, facing southwest and upstream.



Photo 24- Upland 1 (DP1-UP1) facing north.



Photo 25- Upland 2 (DP2-UP2) facing southeast.



Photo 26- Upland 3 (DP5-UP3) facing east.



Photo 27- Upland 4 (DP7-UP4), facing northeast.



Photo 28- Upland 5 (DP8-UP5), facing southeast.



Photo 29- Wetland 1 (PFO) (DP3-W1) facing southwest.



Photo 30- Wetland 2 (PSS) (DP4-W2) facing west.



Photo 31- Wetland 3 (PEM)(DP6-W3) facing southwest.



Photo 32- Wetland 4 (PFO) (DP9-W4) facing southwest.



Photo 33- Stream 4 (UNT to Peppermint Branch) facing downstream and northeast.



Photo 34- Stream 4 (UNT to Peppermint Branch) facing upstream and west.