ENVIRONMENTAL CONSULTANTS

478-743-7175
hhnt.com
3920 Arkwright Road, Suite 101
Macon, GA 31210

February 14, 2025

US Army Corps of Engineers
Charleston Regulatory Office
69A Hagood Avenue
Charleston, South Carolina 29403

Re: Luck Companies / Proposed Luck Cherokee
Cherokee County, SC
Delineation Concurrence
HHNT Project Number: 4780-025

To Whom It May Concern:

On behalf of Greenfield Timber, LLC, Hodges, Harbin, Newberry & Tribble, Inc., (HHNT) is herein submitting the enclosed Delineation Concurrence (DC) Request for the above-referenced site. The study area for the project, henceforth referred to as the Proposed Luck Cherokee, is a ~567.13-acre tract of land located north of I-85 and west of Old Post Road in Cherokee County, South Carolina (Appendix A, Figures 1 and 2).

Attached please find all appropriate mapping and documentation of the project area and a GPS delineation map overlaid on an aerial photograph. It is the opinion of HHNT that all the U.S. Army Corps of Engineers (USACE) Waters of the United States limits have been identified and flagged within the project study area consistent with current jurisdictional guidelines.

At your earliest convenience, we respectfully request that the attached DC request be processed for the subject property. Please contact us to schedule a field visit and for access to the property, if necessary. In advance, we thank you for your timely review of this project and if you should have any questions or require additional information, please do not hesitate to call.

Sincerely,

HODGES, HARBIN, NEWBERRY & TRIBBLE, INC.

Brandon F. Smith, PWS
Senior Ecologist

BFS

U.S. Army Corps of Engineers – Charleston District - Regulatory Division

REQUEST FOR CORPS JURISDICTIONAL DETERMINATION (JD) / DELINEATION

(For Jurisdictional Status and Identifying Wetlands and Other Aquatic Resources)

The Regulatory Division is now offering paperless/electronic documents as a primary means of accepting project submittals and responding to requests. While electronic submittals are preferred, we will continue to accept paper documents that meet our file requirements in order to accommodate those with limited computer access. Depending on the project location, requests should be submitted to the appropriate office below. Please visit https://www.sac.usace.army.mil/Missions/Regulatory/Electronic-Submittals/ for additional information on electronic submittals.

Charleston Office:	**Columbia Office:**	**Conway Office:**	**Greenville Office:**
69A Hagood Avenue	2567 Essayons Way	1949 Industrial Park Road, Room 140	150 Executive Center Drive, Suite 205
Charleston, SC 29403	Fort Jackson, SC 29207	Conway, SC 29526	Greenville, SC 29615
843-329-8044	803-253-3444	843-365-4239	864-609-4326
SAC.RD.Charleston@usace.army.mil	**SAC.RD.Columbia@usace.army.mil**	**SAC.RD.Conway@usace.army.mil**	**SAC.RD.Greenville@usace.army.mil**

I. PROPERTY AND AGENT INFORMATION

A. Site Details/Location:

Site Name: Proposed Luck Cherokee Date: 2/14/2025

City/Township/Parish: Macedonia County: Cherokee

Latitude/Longitude: 35.0857, -81.746 Acreage: 567.13

Tax Map Sequence (TMS) #(s): 045-00-00-053.000, 027-00-00-035.000

Property Address(es): Old Post Road, Macedonia, Cherokee County, SC 29341

An accurate depiction of the review area must be provided (survey, tax map, **OR** GPS coordinates). Tax maps may only be used if the site includes the entire tax map parcel. ***See the attached Checklist for information that should be submitted for a complete and proper submittal.***

B. Requestor of Jurisdictional Determination/Delineation *(if there are multiple property owners, please attach additional pages)*

Name: Bruce Smith Company Name (*if applicable*): Luck Companies

Address: PO Box 29682, Richmond VA 23242

Phone: (804) 641-9458 Email: brucesmith@luckcompanies.com

Check one: ■ I currently own this property ☐ I plan to purchase this property ☐ Other: _____

C. Agent/Environmental Consultant Acting on Behalf of the Requestor *(if applicable)*:

Consultant/Agent Name: Brandon Smith

Company Name: HHNT

Address: 613 Stephenson Ave., Suite 110, Savannah GA 31405 Phone: (478) 743-7175

Email: bsmith@hhnt.com

II. REASON FOR REQUEST (check all that apply):

☐ I intend to construct/develop a project or perform activities on this site which would be designed to avoid all aquatic resources.

☐ I intend to construct/develop a project or perform activities on this site which would be designed to avoid all jurisdictional aquatic resources under Corps authority.

■ I intend to construct/develop a project or perform activities on this site which may require authorization from the Corps, and the Jurisdictional Determination would be used to avoid and minimize impacts to jurisdictional aquatic resources and as an initial step in a future permitting process.

☐ I intend to construct/develop a project or perform activities on this site which may require authorization from the Corps; this request is accompanied by my permit application and the jurisdictional determination is to be used in the permitting process.

☐ I intend to construct/develop a project or perform activities in a navigable water of the U.S. which is subject to the ebb and flow of the tide.

☐ A Corps jurisdictional determination is required in order to obtain my local/state authorization.

☐ I intend to contest jurisdiction over a particular aquatic resource and the request the Corps to confirm that jurisdiction does/does not exist over the aquatic resource on the parcel.

☐ I believe that the site may be comprised entirely of dry land.

☐ Other: _____

*Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332.

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

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

Disclosure: Submission of requested information is voluntary; however, if information is not provided, the request for an jurisdictional determination cannot be evaluated nor can a jurisdictional determination be issued.

III. TYPE OF REQUEST:

[1]Delineation Concurrence (DC) – A DC provides concurrence that the delineated boundaries of wetlands on a property are a reasonable representation of the aquatic resources on-site. A DC does not address the jurisdictional status of the aquatic resources. (NOTE: A DC is generally the quickest type of standalone request for the Corps to review and process.)

[2]Approved – An AJD is defined in Corps regulations at 33 CFR 331.2. As explained in further detail in RGL 16-01, an AJD is used to indicate that this office has identified the presence or absence of wetlands and/or other aquatic resources on a site, including their accurate location(s) and boundaries, as well as their jurisdictional status. AJDs are valid for 5 years.

[3]Preliminary – A PJD is defined in Corps regulations at 33 CFR 331.2. As explained in further detail in RGL 16-01, a PJD is used to indicate that this office has identified the approximate location(s) and boundaries of wetlands and/or other aquatic resources on a site that are presumed to be subject to regulatory jurisdiction of the Corps of Engineers. Unlike an AJD, a PJD does not represent a definitive, official determination that there are, or that there are not, jurisdictional aquatic resources on a site, and does not have an expiration date.

[4] "No Permit Required" (NPR) Letter- A NPR letter may be provided by the Corps to notify the requestor that an activity will not require a permit (authorization) from the Corps; this letter can only be used if the proposed activity is not a regulated activity, regardless of where the activity may occur. A NPR letter cannot be used to indicate the presence or absence of wetlands and/or other aquatic resources, nor can it be used to determine their jurisdictional status.

NOTE 1: Pre-approved Delineations and/or JDs are NOT a pre-requisite for submitting a DA permit application. Requests for JDs and/or DCs that are not associated with a DA permit application (Standalone Delineation / JD requests) will be reviewed and processed as time allows and based on available resources.

NOTE 2: Although not a requirement, it is recommended that Standalone requests be prepared and submitted by an environmental consultant to expedite the review process.

Select the Appropriate Request:

☐ **Pre-Construction Notification or Department of the Army permit application**

- ☐ with Delineation only (no written concurrence of delineation)
- ☐ with Delineation Concurrence[1]
- ☐ with Preliminary Jurisdictional Determination (PJD) [3]
- ☐ with Approved Jurisdictional Determination (AJD) [2]

☒ **Standalone Delineation / Jurisdictional Determination**

Standalone Delineation / Jurisdictional Determination requests will be reviewed and processed as time allows and based on available resources.

- ☒ Delineation Concurrence[1]
- ☐ Preliminary Jurisdictional Determination (PJD) [3]
- ☐ Approved Jurisdictional Determination (AJD) [2]

☐ I request that the **Corps delineate** the wetlands and/or other aquatic resources that may be present on my property.

These requests have historically been conducted as a courtesy for private property owners for minor actions. Due to current workload and priorities, the Charleston District Regulatory Division will only provide this service on a limited basis for private individuals on small tracts of land (typically 1 acre or less).

- ☐ with the attached Pre-Construction Notification or Department of the Army permit application

(This may delay processing times. The review of the permit application will not start until the delineation has been completed by the Corps.)

- ☐ with a Delineation Only, an AJD or PJD

☐ **"No Permit Required" (NPR) Letter** as I believe my proposed activity is not regulated[4]

☐ **Unclear** and require additional information to inform my decision.

IV. **LEGAL RIGHT OF ENTRY**

By signing below, I am indicating that I have the authority, or am acting as the duly authorized agent of a person or entity with such authority, to and do hereby grant U.S. Army Corps of Engineers personnel right of entry to legally access the property(ies) subject to this request for the purposes of conducting on-site investigations (e.g., digging and refilling shallow holes) and issuing a jurisdictional determination. I acknowledge that my signature is an affirmation that I possess the requisite property rights to request a jurisdictional determination on the properties subject to this request.

PO Box 29682, Richmond, VA, 23242	045-00-00-053.000, 027-00-00-035.000
Mailing Address	Property Address / TMS #(s)
brucesmith@luckcompanies.com	(804) 641-9458
Email Address	Daytime Phone Number
	Bruce Smith
*Signature:	Printed Name and Date

*Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332.
Principal Purpose: The information that you provide will be used in evaluating your request to determine whether there are any aquatic resources within the project area subject to federal jurisdiction under the regulatory authorities referenced above.
Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public, and may be made available as part of a public notice as required by federal law. Your name and property location where federal jurisdiction is to be determined will be included in the approved jurisdictional determination (AJD), which will be made available to the public on the District's website and on the Headquarters USACE website.
Disclosure: Submission of requested information is voluntary; however, if information is not provided, the request for an jurisdictional determination cannot be evaluated nor can a jurisdictional determination be issued.

JURISDICTIONAL DETERMINATION AND DELINEATION CHECKLIST:

This checklist is to assist prospective requesters in submitting complete and proper information. This is NOT a comprehensive list nor are all items mandatory for all projects. However, the list contains general information typically necessary for this office to confirm jurisdictional and/or wetland delineations *as part of the permitting process*. Required items are indicated by an asterisk (*). To reduce delays in verifying Jurisdictional Determinations and Delineations, it is recommended that the information provided is a complete and true representation of wetlands and other aquatic resources that may be present onsite. It is also recommended that submissions be prepared and submitted by an environmental consultant. Although this is not a requirement, it will significantly expedite the review process.

Following these standards will help to expedite our review. Flexibility of these standards may be determined by the Regulatory Division on a case-by-case basis only. Please note the Corps has the ability to reject delineation work that is incomplete or inaccurate.

■ ***Completed Request For Corps Jurisdictional Determination (JD) / Delineation AND Legal Right of Entry**

■ **Site Information:**

- ■ ***Location Maps:** large-scale and small-scale maps, including streets, intersections, cities and an accurate depiction of the site boundary shown.
  Note: Only contiguous/adjoining parcels can be submitted under one JD request. If there is an area not within the JD request that separates the areas of review (i.e., a road, utility line, etc.), a separate JD request should be submitted each area.
- ■ ***Overlay of site boundary** on aerial photo, USGS topographic map, soil survey, NWI Map, etc.
- ■ ***Site's coordinates** should be based on a standard coordinate system, i.e., Geographic (at least to the nearest tenth of a second), State Plane or UTM. Indicate the coordinate system (and zone for UTM), units (English or metric) and the corresponding geodetic datum, either NAD27 or NAD83.
- ■ ***Property lines with measurements** illustrating all existing land features, including streams, ditches, trails, etc.
- ■ **Landscape photos** of representative upland areas and aquatic resources, with the photo locations and directions of photos marked on a depiction.
- ☐ Current land use and plant communities located on and adjacent to the area under review (i.e., agricultural, industrial, residential, cropland, lawn, forested, etc.). If known, a brief history of the previous land use will be helpful.
- ☐ Proposed & existing structures clearly defined as such.
- ☐ Dimensions of proposed structures such as a driveway, house, garage, and other structures which are proposed in wetlands.
- ☐ Sewage/septic system: location, dimensions and type.
- ☐ Drainage ditches and/or berms: location and dimensions.

■ ***Wetland Determination Data Forms:** Record wetland delineation information for both the upland and wetland side of various points along the boundary. Current version from appropriate Regional Supplement found at:
https://www.sac.usace.army.mil/Missions/Regulatory.aspx

■ **Elements for Depictions of All Sites:**

- ■ ***Title Block with project name, applicant, county, state, date.
- ■ ***North arrow
- ■ ***Solid bold line depicting project area boundary with label. The project area boundary should be accurate and may be represented by survey, tax map, or GPS coordinates with coordinates provided. **Please note that a survey is NOT required.** Tax maps may only be used if the project area includes the entire parcel(s). Include the Tax Map Parcel Numbers, Property Identification Numbers, etc., the source of the map, and date of preparation (print date).
- ■ ***Clearly marked boundaries of all wetlands and/or other aquatic resources and other pertinent features that are present (Wetlands, Tributaries, Lakes, Borrow Pits, Ponds, Rivers, Drainage Features, Ditches) and have been flagged in the field. Surveyed or GPS coordinates of the boundaries should be provided. (At a minimum, potentially non-jurisdictional linear features should be included on a supplement sketch/depiction.)
- ■ ***Labels of wetlands and/or other aquatic resources. Refer to the below tables for the standardized labels that should be used for AJDs, PJDs and/or Delineation Concurrence.
- ■ ***Size (acres) and length (linear feet) of each individual wetlands or aquatic resource included on the depiction.
- ■ ***Wetland Determination Data Form point locations with labels. (At a minimum, this should be included on a supplement sketch/depiction.)

*Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332.
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***Standardized Labels for Depictions of Wetlands and Aquatic Resources**

Table 1: Labels for PJDs and Delineation Concurrence

Label	Description
Wetland X (tidal, non-tidal)	All wetlands, including tidal wetlands.
Non-wetlands waters X (tidal, non-tidal)	All non-wetland aquatic resources (ponds, linear features, tributaries, tidal open water.
Upland	Uplands should be labeled
Non-aquatic resource X (Optional) *	Features determined by the Corps to be non-aquatic resources.

Table 2: Labels for AJDs

Jurisdictional Feature Label	Description
TNW X	Traditionally Navigable Water, tidal wetland, or and/or OCRM Critical Area Wetland
Jurisdictional Tributary X	Tributary, relatively permanent water, or stream bed
Jurisdictional Wetland X	Meeting 3-parameters per 1987 Delineation Manual
Other Jurisdictional WOUS X	Other Waters of the United States such as ponds, lakes, ditches, impoundments, etc.
Non-jurisdictional Wetland X	Wetland determined by the Corps to be non-jurisdictional
Non-jurisdictional Feature X (Optional)*	Non-jurisdictional ponds, borrow-pits, linear features, ditches, etc.
Upland	Uplands should be labeled when wetlands or other waters, regardless of jurisdictional status, are present. When no wetlands or other waters are present, the "Upland" label is not necessary.

*Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Program of the U.S. Army Corps of Engineers; Final Rule for 33 CFR Parts 320-332.
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PROJECT UPLOAD REQUEST DETAILS *

DA #	N/A

So that the ORM team may accurately understand the requirements for this project upload, please provide the details of how the included data is to be loaded.
Specify clearly which data needs to be uploaded to ORM, and which is to be finalized. Provide Required Additional Information as described in the explanation below.

	Load	Finalize		Required Additional Information
Aquatic Resources	YES	YES	*Loaded at District?*	Has not been loaded by District Administrators
Impacts	NO	NO	*Permit Action ID?*	N/A
Mitigation-Permittee Responsible	NO	NO	*Permit Action ID?*	N/A
Mitigation Bank / ILF	NO	NO	*Permit Action ID?*	N/A
NWP	NO	NO	*JD ID? Reasons for Delay?*	N/A
Pre2015_Post_Sackett_JD	NO	NO		N/A
RGP / PGP	NO	NO	*JD ID? Reasons for Delay?*	N/A

Required Additional Information explanation:

Loaded at District? For ARs, please indicate whether the data has been already loaded by the District Administrators.
Permit Action ID? When Impact and/or Mitigation are provided, but not loading a Permit, you must provide the ACTION ID of one unfinalized Permit to which the data is to be tied.
JD ID? For NWP or RGP/PGP: if the permit is to be tied to a JD, but the JD information is not included for upload, please provide the ID of the JD to which the uploaded permits should be associated. (The id can be viewed by hovering over the specific JD in the JD lists.) Also consider including the Begin and End dates for the JD.
Reasons For Delay? For NWP or RGP/PGP, if the Permit End Date is more than 60 days past the Date Received, then please specifiy the Delay Reason information. (Multiple Delay Reasons may be provided.)

SHAPEFILE UPLOAD REQUEST DETAILS **

Specify the Filenames that contain geometry data for the ARs and/or Project Location to be loaded into ORM.

	Filename(s)	Notes
Aquatic Resources	AquaticResources.zip	Coordinate system: NAD 1983 StatePlane SC
Project Boundary	ProjectArea.zip	Coordinate system: NAD 1983 StatePlane SC

* The zip archive of upload template documents must first be downloaded and saved to your local disk.

The template file(s) must then be extracted from the zip archive and also saved to your local disk before using them.

If the template file is not first saved to your local disk, the data validation macros will not function.

** Please be aware that the .shp, .shx, .dbf, and .prj files at a minimum must be received in order to be a complete submission.

For Aquatic Resources, ORM must receive both an AR worksheet and a shapefile in the submission.
- In the Shapefile, each geometry must include an attribute for WatersName and each WatersName MUST be unique within and across all files.
- Furthermore, there must be a one to one relationship between the WaterName in the AR Worksheet and the WatersName in the Shapefile.
- When uploading Aquatic Resources via shapefile, the Latitude / Longitude in the AqResources worksheet is not required.

For Project Boundary, the submitted file must contain only one Geometry.

PROJECT UPLOAD REQUEST DETAILS *

DA #	N/A

So that the ORM team may accurately understand the requirements for this project upload, please provide the details of how the included data is to be loaded.
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Impacts	NO	NO	*Permit Action ID?*	N/A
Mitigation-Permittee Responsible	NO	NO	*Permit Action ID?*	N/A
Mitigation Bank / ILF	NO	NO	*Permit Action ID?*	N/A
NWP	NO	NO	*JD ID? Reasons for Delay?*	N/A
Pre2015_Post_Sackett_JD	NO	NO		N/A
RGP / PGP	NO	NO	*JD ID? Reasons for Delay?*	N/A

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For Project Boundary, the submitted file must contain only one Geometry.

U.S. Army Corps of Engineers
Charleston District, Regulatory Division
Global Positioning Systems (GPS) Datasheet
Delineation of Wetlands, Streams and Other
Waters Within the State of South Carolina

USACE File Number

Date of Delineation November 11-13, 2024

Name of Delineator Present

Myles McKnight, Brandon Smith, Tabitha Williams, Sam Long, Casey Quade; HHNT

Make and Model of GPS Device Used (must be capable of sub-meter accuracy)

Geode GNS 2

Geographic Coordinate System Used

NAD 83, South Carolina

Name of Continually Operated Reference Station Used for Post-processing

Date Post-processing Performed

November 14, 2024

Percent Dilution of Position (PDOP) (6 or less is required)

0.74

Name and Coordinates of Known Property Corner and/or Monument

GPS Reading of Known Property Corner and/or Monument

Frequency of Waypoints Taken During Survey

1 every second to 100 readings, then averaged.

Note: GPS data must be provided, if requested. If GPS data and/or GPS delineation is determined unacceptable by the Savannah District, a survey sealed by a surveyor licensed in South Carilina will be required.

APPENDICES

Appendix A: Figures
Appendix B: Wetland Data Forms
Appendix C: Upland Data Forms
Appendix D: Stream Forms
Appendix E: Site Photographs
Appendix F: Precipitation and Drought Data

APPENDIX A FIGURES

1. Vicinity Map
2. USGS Topographic Map
3. NRCS Soil Map
4. NWI Wetlands Map
5. FEMA Floodplain Map
6. Delineation Map
7. Photo Location Map

DISCLAIMER:
This drawing and the information contained herein is for general presentation purposes only and is a compilation of shapefile(s) provided by various source(s). The source and accuracy of the file(s) has not been verified by HHNT and therefore the drawing is not intended for use as an engineering drawing or for design purposes.

Figure 1
2/13/2025
0 0.5 1
1 inch equals 1 mile

Vicinity Map

Proposed Luck Cherokee
Luck Companies
Cherokee County, SC

Notes:
1. Basemap source: ESRI World Navigation Map.

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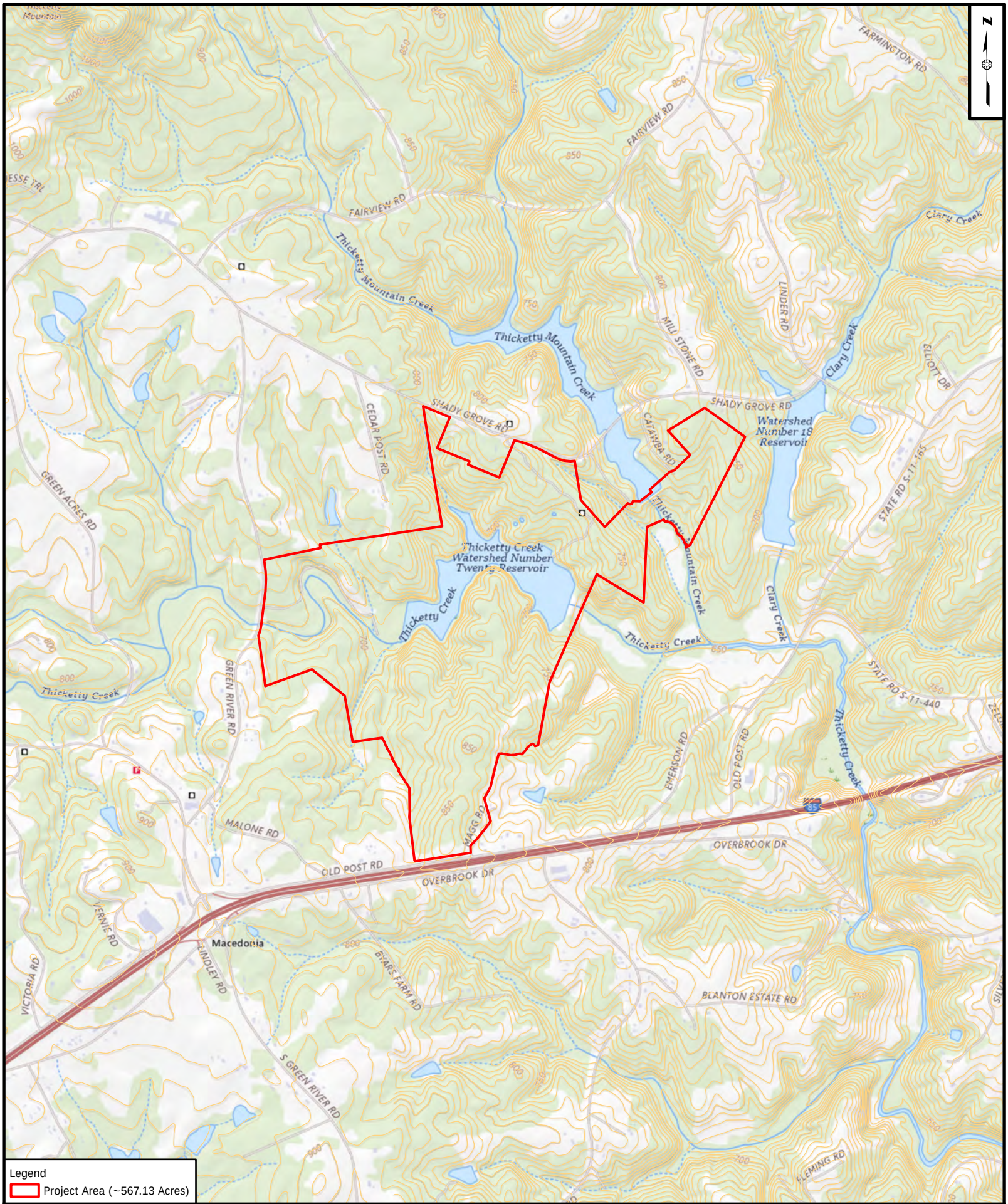

Legend

Project Area (~567.13 Acres)

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Figure 2
2/13/2025
0 1,000 2,000
1 inch equals 2,000 feet

USGS Topographic Map

Proposed Luck Cherokee
Luck Companies
Cherokee County, SC

Notes:
1. Topographic basemap obtained from USGS Topographic Map Cowpens, SC Quadrangle, 2024 and Gaffney, SC Quadrangle 2024.

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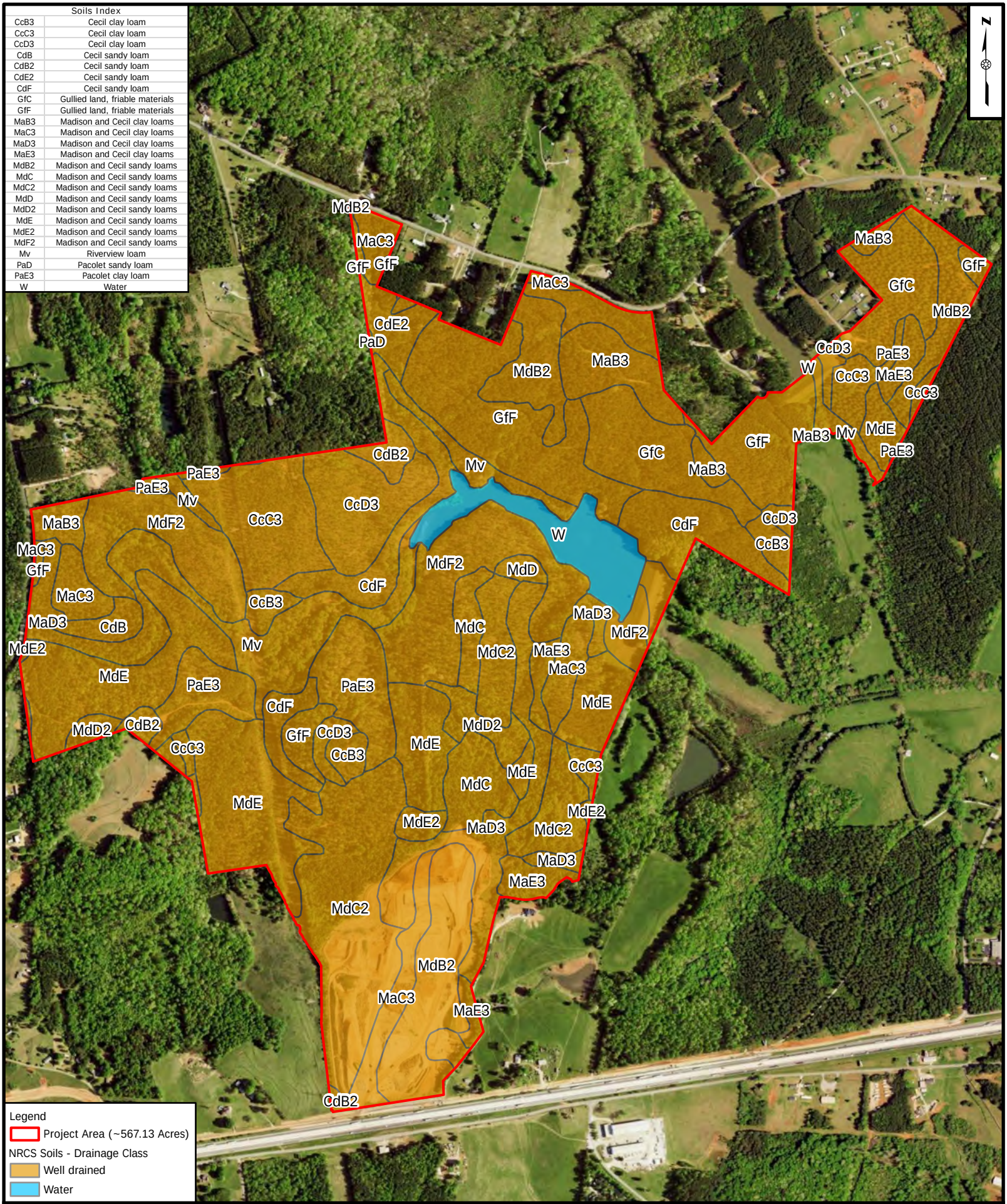

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Figure 3
2/13/2025
0 500 1,000
1 inch equals 1,000 feet

NRCS Soil Map

Proposed Luck Cherokee
Luck Companies
Cherokee County, SC

Notes:
1. Imagery obtained from the USGS NAIP Imagery Index, dated 2021.
2. Soils data obtained from NRCS USDA Web Soil Survey.

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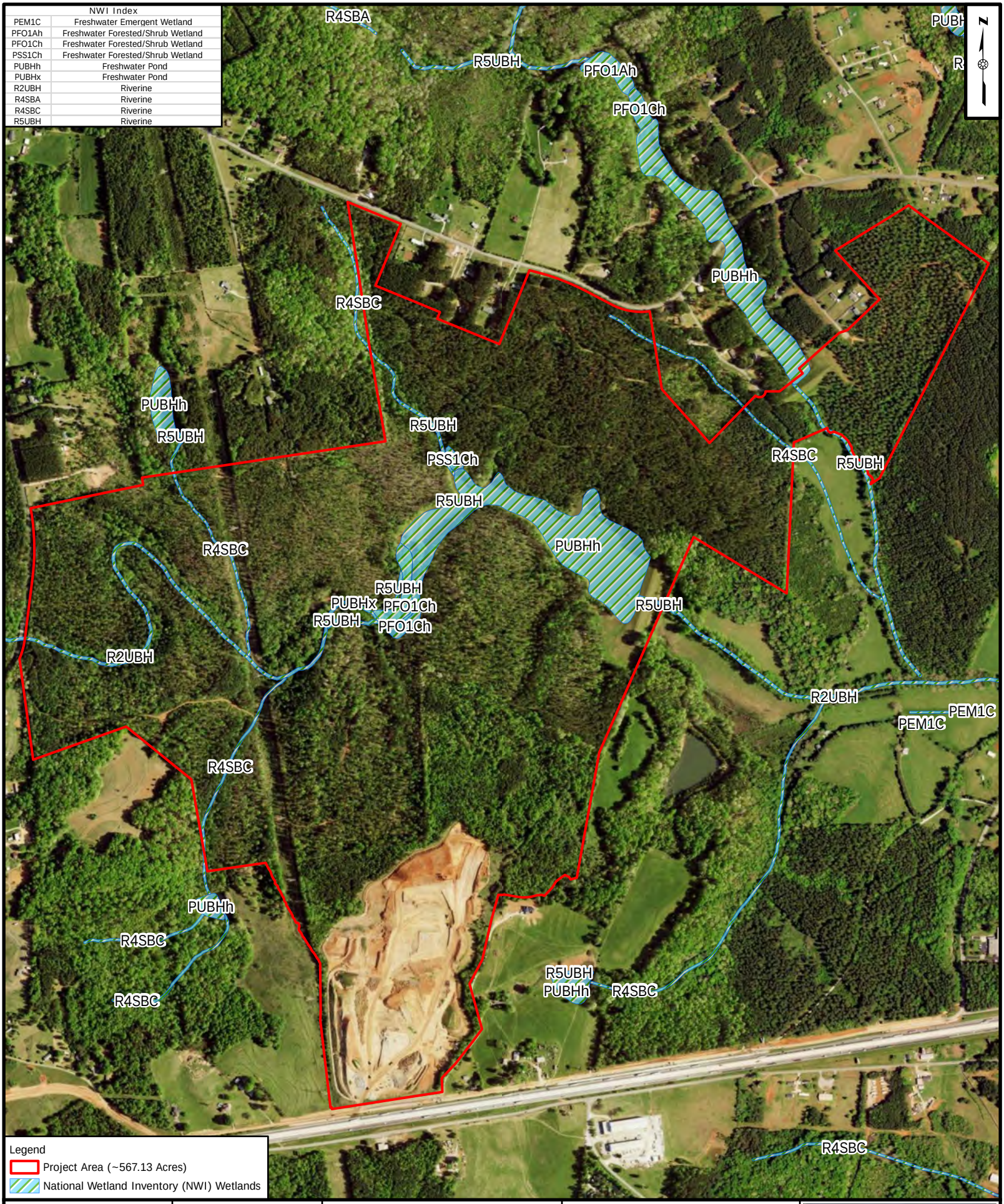

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Figure 4
2/13/2025
0 500 1,000
1 inch equals 1,000 feet

NWI Wetlands Map

Proposed Luck Cherokee
Luck Companies
Cherokee County, SC

Notes:
1. Imagery obtained from the USGS NAIP Imagery Index, dated 2021.
2. Wetland data obtained from USFWS National Wetland Inventory.

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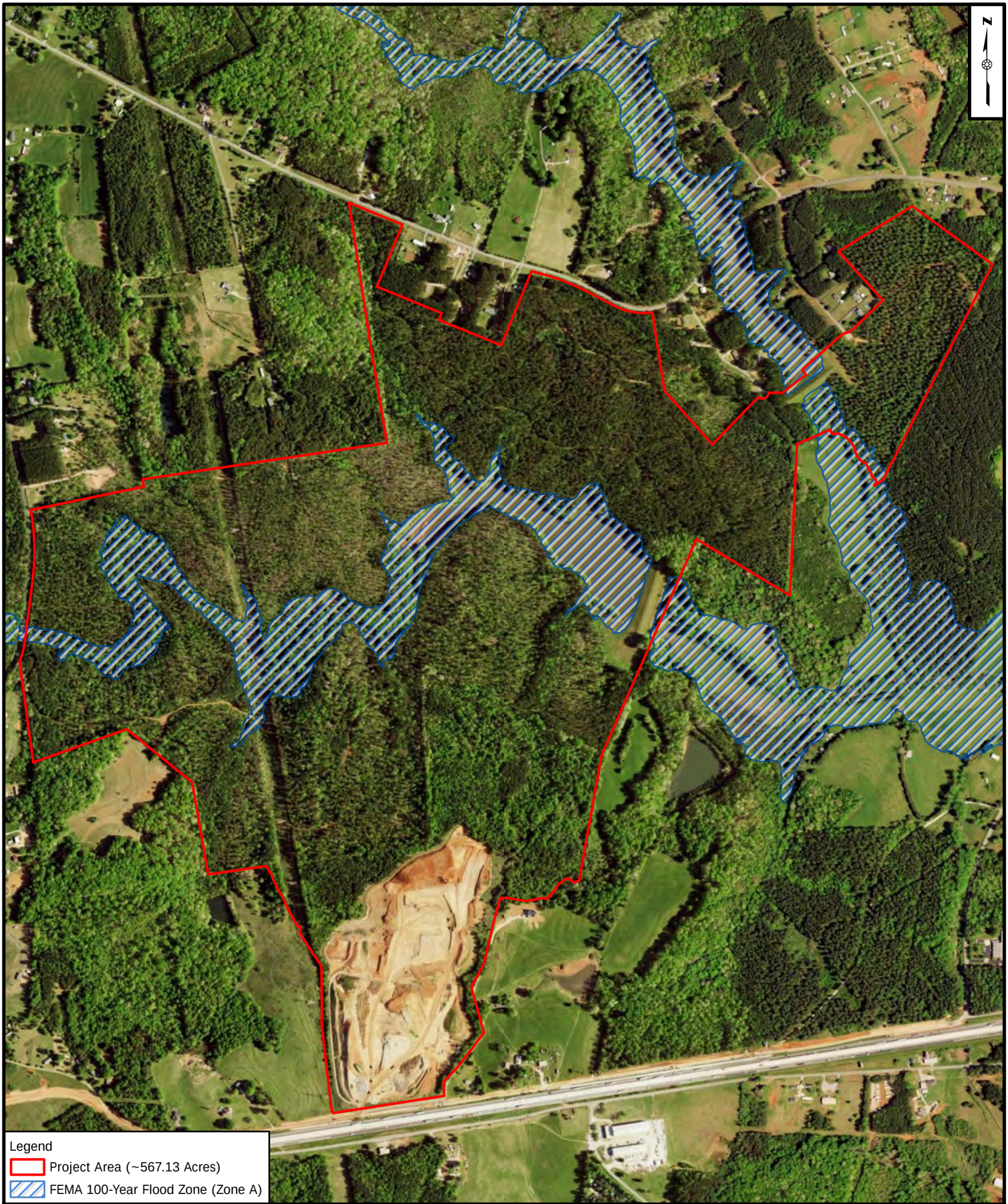

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Figure 5
2/13/2025
0 500 1,000
1 inch equals 1,000 feet

FEMA Floodplain Map

Proposed Luck Cherokee
Luck Companies
Cherokee County, SC

Notes:
1. Imagery obtained from the USGS NAIP Imagery Index, dated 2021.
2. Floodplain data obtained from the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) panels 45021C0155D and 45083C0185D, effective 9/16/2011.

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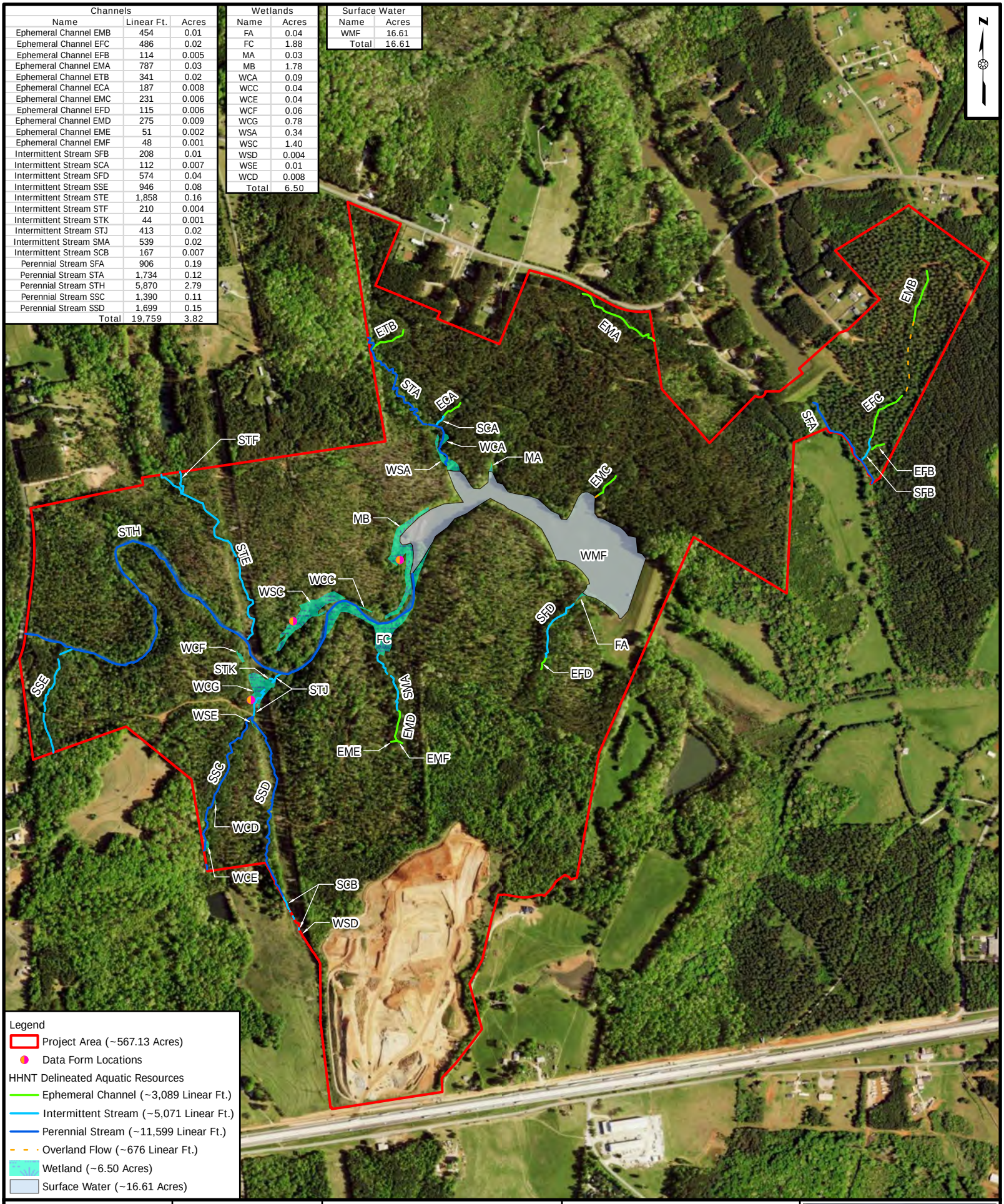
Channels		
Name	Linear Ft.	Acres
Ephemeral Channel EMB	454	0.01
Ephemeral Channel EFC	486	0.02
Ephemeral Channel EFB	114	0.005
Ephemeral Channel EMA	787	0.03
Ephemeral Channel ETB	341	0.02
Ephemeral Channel ECA	187	0.008
Ephemeral Channel EMC	231	0.006
Ephemeral Channel EFD	115	0.006
Ephemeral Channel EMD	275	0.009
Ephemeral Channel EME	51	0.002
Ephemeral Channel EMF	48	0.001
Intermittent Stream SFB	208	0.01
Intermittent Stream SCA	112	0.007
Intermittent Stream SFD	574	0.04
Intermittent Stream SSE	946	0.08
Intermittent Stream STE	1,858	0.16
Intermittent Stream STF	210	0.004
Intermittent Stream STK	44	0.001
Intermittent Stream STJ	413	0.02
Intermittent Stream SMA	539	0.02
Intermittent Stream SCB	167	0.007
Perennial Stream SFA	906	0.19
Perennial Stream STA	1,734	0.12
Perennial Stream STH	5,870	2.79
Perennial Stream SSC	1,390	0.11
Perennial Stream SSD	1,699	0.15
Total	19,759	3.82

Wetlands	
Name	Acres
FA	0.04
FC	1.88
MA	0.03
MB	1.78
WCA	0.09
WCC	0.04
WCE	0.04
WCF	0.06
WCG	0.78
WSA	0.34
WSC	1.40
WSD	0.004
WSE	0.01
WCD	0.008
Total	6.50

Surface Water	
Name	Acres
WMF	16.61
Total	16.61



Legend

- Project Area (~567.13 Acres)
- Data Form Locations

HHNT Delineated Aquatic Resources

- Ephemeral Channel (~3,089 Linear Ft.)
- Intermittent Stream (~5,071 Linear Ft.)
- Perennial Stream (~11,599 Linear Ft.)
- Overland Flow (~676 Linear Ft.)
- Wetland (~6.50 Acres)
- Surface Water (~16.61 Acres)

Figure 6

2/13/2025

0 500 1,000

1 inch equals 1,000 feet

Delineation Map

Proposed Luck Cherokee
Luck Companies
Cherokee County, SC

Notes:
1. Imagery obtained from the USGS NAIP Imagery Index, dated 2021.
2. Aquatic resource delineation performed by HHNT scientists 11/11/2024-11/13/2024.
3. Depicted Waters of the U.S. Delineation remains an opinion of HHNT until formally verified in writing by the U.S. Army Corps of Engineers via a formal determination letter.

HHNT ENVIRONMENTAL CONSULTANTS

Channels		
Name	Linear Ft.	Acres
Ephemeral Channel EMB	454	0.01
Ephemeral Channel EFC	486	0.02
Ephemeral Channel EFB	114	0.005
Ephemeral Channel EMA	787	0.03
Ephemeral Channel ETB	341	0.02
Ephemeral Channel ECA	187	0.008
Ephemeral Channel EMC	231	0.006
Ephemeral Channel EFD	115	0.006
Ephemeral Channel EMD	275	0.009
Ephemeral Channel EME	51	0.002
Ephemeral Channel EMF	48	0.001
Intermittent Stream SFB	208	0.01
Intermittent Stream SCA	112	0.007
Intermittent Stream SFD	574	0.04
Intermittent Stream SSE	946	0.08
Intermittent Stream STE	1,858	0.16
Intermittent Stream STF	210	0.004
Intermittent Stream STK	44	0.001
Intermittent Stream STJ	413	0.02
Intermittent Stream SMA	539	0.02
Intermittent Stream SCB	167	0.007
Perennial Stream SFA	906	0.19
Perennial Stream STA	1,734	0.12
Perennial Stream STH	5,870	2.79
Perennial Stream SSC	1,390	0.11
Perennial Stream SSD	1,699	0.15
Total	19,759	3.82

Wetlands	
Name	Acres
FA	0.04
FC	1.88
MA	0.03
MB	1.78
WCA	0.09
WCC	0.04
WCE	0.04
WCF	0.06
WCG	0.78
WSA	0.34
WSC	1.40
WSD	0.004
WSE	0.01
WCD	0.008
Total	6.50

Surface Water	
Name	Acres
WMF	16.61
Total	16.61

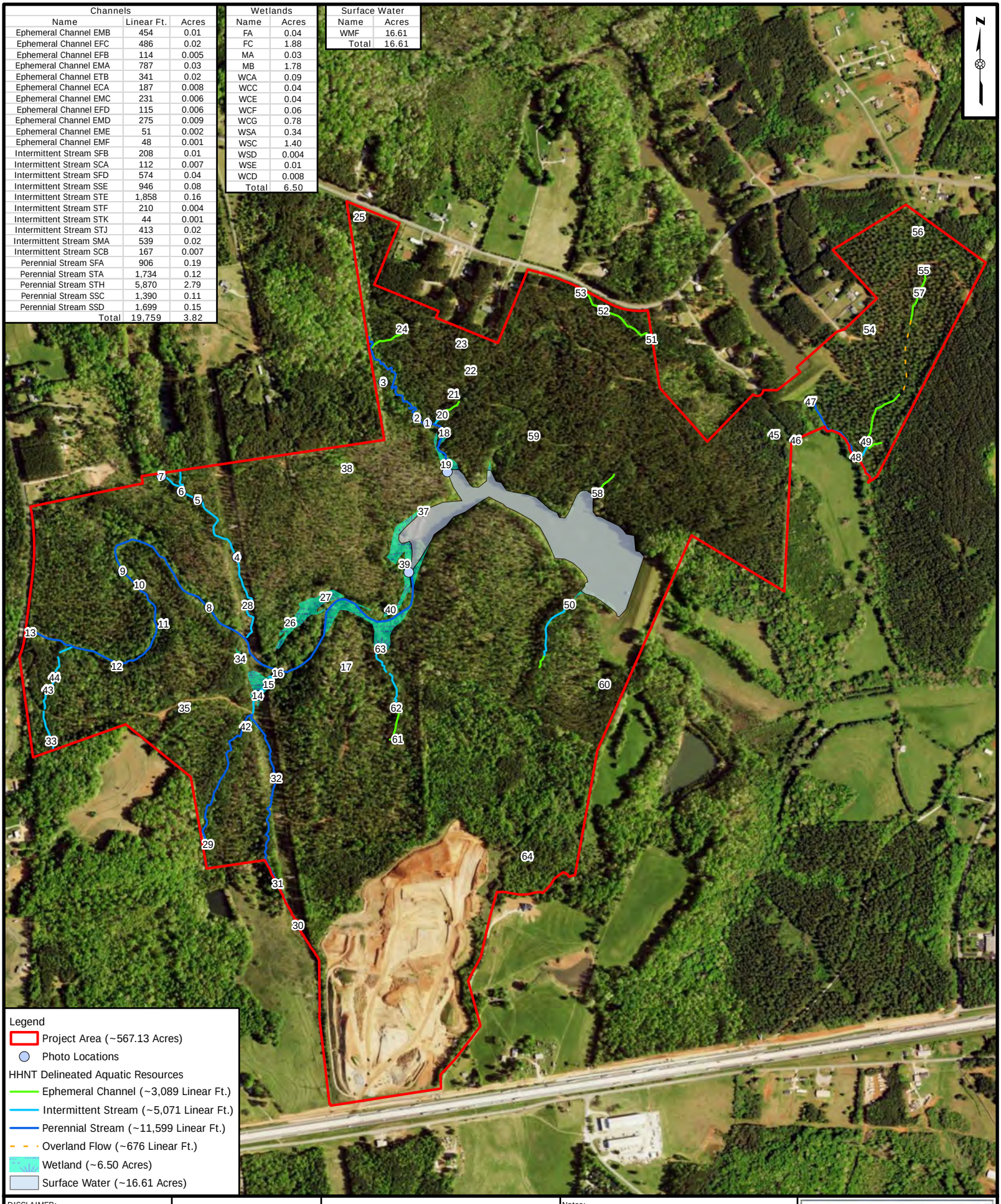


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Figure 7
2/13/2025
0 500 1,000
1 inch equals 1,000 feet

Photo Location Map

Proposed Luck Cherokee
Luck Companies
Cherokee County, SC

Notes:
1. Imagery obtained from the USGS NAIP Imagery Index, dated 2021.
2. Aquatic resource delineation performed by HHNT scientists 11/11/2024-11/13/2024.
3. Depicted Waters of the U.S. Delineation remains an opinion of HHNT until formally verified in writing by the U.S. Army Corps of Engineers via a formal determination letter.

HHNT ENVIRONMENTAL CONSULTANTS

APPENDIX B WETLAND DATA FORMS

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Proposed Luck Cherokee City/County: Cherokee County Sampling Date: 11/13/2024

Applicant/Owner: Luck Companies State: SC Sampling Point: WCG11 Wet

Investigator(s): M. McKnight, T. Williams, S. Long, C. Quade Section, Township, Range:

Landform (hillside, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): 2%

Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: 35.0838 Long: -81.7513 Datum: NAD83

Soil Map Unit Name: PaE3 - Pacolet clay loam 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
According to the Antecedent Precipitation Calculator, conditions were normal during the time of the delineation.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 18
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

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

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

Remarks:
Saturated at surface

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

Sampling Point: WCG11 Wet

Tree Stratum (Plot size: 30')	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: 30')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	=Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size: 30')			
1. *Dichanthelium clandestinum*	50	Yes	FAC
2. *Juncus effusus*	10	No	FACW
3. *Scirpus cyperinus*	2	No	FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	62 =Total Cover		
50% of total cover: 31	20% of total cover: 13		
Woody Vine Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
	=Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	12	x 2 =	24
FAC species	50	x 3 =	150
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	62 (A)		174 (B)

Prevalence Index = B/A = 2.81

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WCG11 Wet

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 5/1	80	10YR 5/6	20	C	M	Loamy/Clayey	
6-24	10YR 4/2	90	10YR 4/6	10	C	M	Loamy/Clayey	

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

Hydric Soil Indicators:

- ___ 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)
- X 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 Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Proposed Luck Cherokee City/County: Cherokee County Sampling Date: 11/13/2024

Applicant/Owner: Luck Companies State: SC Sampling Point: WSB14 Wet

Investigator(s): M. McKnight, T. Williams, S. Long, C. Quade Section, Township, Range:

Landform (hillside, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): 2%

Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: 35.087 Long: -81.7472 Datum: NAD83

Soil Map Unit Name: Mv - Riverview loam 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
According to the Antecedent Precipitation Calculator, conditions were normal during the time of the delineation.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- X 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)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- X Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 2
Water Table Present?	Yes X	No ____	Depth (inches): 1
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

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

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

Remarks:
Saturation at surface

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

Sampling Point: WSB14 Wet

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Carpinus caroliniana*	20	Yes	FAC
2. *Betula nigra*	10	Yes	FACW
3.			
4.			
5.			
6.			
7.			
	30	=Total Cover	
50% of total cover: 15		20% of total cover: 6	
Sapling/Shrub Stratum (Plot size: 30')			
1. *Acer rubrum*	2	No	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	2	=Total Cover	
50% of total cover: 1		20% of total cover: 1	
Herb Stratum (Plot size: 30')			
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: 30')			
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: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	22	x 3 =	66
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	32 (A)		86 (B)

Prevalence Index = B/A = 2.69

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is >50%
- X 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WSB14 Wet

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-8	7.5YR 4/1	80	7.5YR 4/4	20	C	M	Loamy/Clayey	
8-24	7.5YR 3/1	90	7.5YR 4/6	10	C	M	Loamy/Clayey	

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

Hydric Soil Indicators:

- ___ 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)
- X 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 Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region
See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Proposed Luck Cherokee City/County: Cherokee County Sampling Date: 11/13/2024

Applicant/Owner: Luck Companies State: SC Sampling Point: WSC8 Wet

Investigator(s): M. McKnight, T. Williams, S. Long, C. Quade Section, Township, Range:

Landform (hillside, terrace, etc.): Slope Local relief (concave, convex, none): Concave Slope (%): 1%

Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: 35.0856 Long: -81.7501 Datum: NAD83

Soil Map Unit Name: Mv - Riverview loam 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
According to the Antecedent Precipitation Calculator, conditions were normal during the time of the delineation.

HYDROLOGY

Wetland Hydrology Indicators:

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

- X Surface Water (A1)
- X High Water Table (A2)
- X 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)
- X 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- X Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- X Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes X	No ____	Depth (inches): 2
Water Table Present?	Yes X	No ____	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

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

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

Remarks:
Saturated at surface

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WSC8 Wet

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Salix nigra*	2	Yes	OBL
2. *Carpinus caroliniana*	5	Yes	FAC
3.			
4.			
5.			
6.			
7.			
	7	=Total Cover	
50% of total cover: 4		20% of total cover:	2
Sapling/Shrub Stratum (Plot size: 30')			
1. *Carpinus caroliniana*	2	Yes	FAC
2. *Liquidambar styraciflua*	2	Yes	FAC
3. *Acer rubrum*	2	Yes	FAC
4.			
5.			
6.			
7.			
8.			
9.			
	6	=Total Cover	
50% of total cover: 3		20% of total cover:	2
Herb Stratum (Plot size: 30')			
1. *Scirpus cyperinus*	2	Yes	FACW
2. *Polygonum punctatum*	5	Yes	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	7	=Total Cover	
50% of total cover: 4		20% of total cover:	2
Woody Vine Stratum (Plot size: 30')			
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: 7 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	7	x 1 =	7
FACW species	2	x 2 =	4
FAC species	11	x 3 =	33
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	20 (A)		44 (B)

Prevalence Index = B/A = 2.20

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WSC8 Wet

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	2.5Y 3/2	85	5YR 4/6	15	C	M	Loamy/Clayey	

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

Hydric Soil Indicators:

- ___ 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)
- X 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 Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

APPENDIX C UPLAND DATA FORMS

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region

See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Proposed Luck Cherokee City/County: Cherokee County Sampling Date: 11/13/2024

Applicant/Owner: Luck Companies State: SC Sampling Point: WCG11 Up

Investigator(s): M. McKnight, T. Williams, S. Long, C. Quade Section, Township, Range:

Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): Convex Slope (%): 4%

Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: 35.0837393 Long: -81.7512881 Datum: NAD83

Soil Map Unit Name: PaE3 - Pacolet clay loam NWI classification: N/A

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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
According to the Antecedent Precipitation Calculator, conditions were normal during the time of the delineation.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ 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)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Remarks:

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

Sampling Point: WCG11 Up

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Acer rubrum*	3	Yes	FAC
2. *Liquidambar styraciflua*	2	Yes	FAC
3. *Pinus elliottii*	2	Yes	FACW
4. *Carya glabra*	2	Yes	FACU
5. *Quercus falcata*	2	Yes	FACU
6. *Juniperus virginiana*	1	No	FACU
7.			
	12	=Total Cover	
50% of total cover: 6		20% of total cover: 3	

Sapling/Shrub Stratum (Plot size: 30')			
1. *Acer rubrum*	2	No	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	2	=Total Cover	
50% of total cover: 1		20% of total cover: 1	

Herb Stratum (Plot size: 30')			
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: 30')			
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: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 60.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	2	x 2 =	4
FAC species	7	x 3 =	21
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	14 (A)		45 (B)

Prevalence Index = B/A = 3.21

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WCG11 Up

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	7.5YR 3/3	100					Loamy/Clayey	
2-24	7.5YR 4/6	100					Loamy/Clayey	

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

Hydric Soil Indicators:

- ___ 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 Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region

See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Proposed Luck Cherokee City/County: Cherokee County Sampling Date: 11/13/2024

Applicant/Owner: Luck Companies State: SC Sampling Point: WSB14 Up

Investigator(s): M. McKnight, T. Williams, S. Long, C. Quade Section, Township, Range:

Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): Convex Slope (%): 5%

Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: 35.0869895 Long: -81.7471468 Datum: NAD83

Soil Map Unit Name: Mv - Riverview loam NWI classification: N/A

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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
According to the Antecedent Precipitation Calculator, conditions were normal during the time of the delineation.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ 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)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WSB14 Up

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Carpinus caroliniana*	20	Yes	FAC
2. *Acer saccharum*	10	Yes	FACU
3. *Liquidambar styraciflua*	5	No	FAC
4. *Betula nigra*	10	Yes	FACW
5.			
6.			
7.			
	45	=Total Cover	
50% of total cover: 23		20% of total cover:	9

Sapling/Shrub Stratum (Plot size: 30')			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
		=Total Cover	
50% of total cover:		20% of total cover:	

Herb Stratum (Plot size: 30')			
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: 30')			
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: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	10	x 2 =	20
FAC species	25	x 3 =	75
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column Totals:	45 (A)		135 (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** X **No** ___

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

SOIL

Sampling Point: WSB14 Up

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-16	7.5YR 4/4	100					Loamy/Clayey	
16-24	10YR 5/2	85	5YR 4/4	15	C	M	Loamy/Clayey	

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

Hydric Soil Indicators:

- ___ 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 Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

U.S. Army Corps of Engineers

WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region

See ERDC/EL TR-12-9; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp:11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Proposed Luck Cherokee City/County: Cherokee County Sampling Date: 11/13/2024

Applicant/Owner: Luck Companies State: SC Sampling Point: WSC8 Up

Investigator(s): M. McKnight, T. Williams, S. Long, C. Quade Section, Township, Range:

Landform (hillside, terrace, etc.): Hillside Local relief (concave, convex, none): Convex Slope (%): 5%

Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: 35.0855855 Long: -81.750137 Datum: NAD83

Soil Map Unit Name: Mv - Riverview loam NWI classification: N/A

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 X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
According to the Antecedent Precipitation Calculator, conditions were normal during the time of the delineation.

HYDROLOGY

Wetland Hydrology Indicators:

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

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ 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)

Secondary Indicators (minimum of two required)

- ____ Surface Soil Cracks (B6)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Drainage Patterns (B10)
- ____ Moss Trim Lines (B16)
- ____ Dry-Season Water Table (C2)
- ____ Crayfish Burrows (C8)
- ____ Saturation Visible on Aerial Imagery (C9)
- ____ Stunted or Stressed Plants (D1)
- ____ Geomorphic Position (D2)
- ____ Shallow Aquitard (D3)
- ____ Microtopographic Relief (D4)
- ____ FAC-Neutral Test (D5)

Field Observations:

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

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

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WSC8 Up

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. *Carya glabra*	2	No	FACU
2. *Acer rubrum*	5	Yes	FAC
3. *Fagus grandifolia*	10	Yes	FACU
4.			
5.			
6.			
7.			
	17	=Total Cover	
50% of total cover: 9		20% of total cover: 4	
Sapling/Shrub Stratum (Plot size: 30')			
1. *Acer rubrum*	5	Yes	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	5	=Total Cover	
50% of total cover: 3		20% of total cover: 1	
Herb Stratum (Plot size: 30')			
1. *Ligustrum sinense*	5	Yes	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5	=Total Cover	
50% of total cover: 3		20% of total cover: 1	
Woody Vine Stratum (Plot size: 30')			
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: 2 (A)

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

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

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	10	x 3 =	30
FACU species	17	x 4 =	68
UPL species	0	x 5 =	0
Column Totals:	27 (A)		98 (B)

Prevalence Index = B/A = 3.63

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is >50%

___ 3 - Prevalence Index is ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

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

Definitions of Four Vegetation Strata:

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

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

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

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

Hydrophytic Vegetation Present? **Yes** ___ **No** X

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

SOIL

Sampling Point: WSC8 Up

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10	7.5YR 5/6	100					Loamy/Clayey	
10-24	7.5YR 4/4	100					Loamy/Clayey	

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

Hydric Soil Indicators:

- ___ 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 Soils[3]:

- ___ 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)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

APPENDIX D STREAM FORMS

NC DWQ Stream Identification Form Version 4.11

Date: 11/11/2024	**Project/Site**: Proposed Luck Cherokee	**Latitude:** 35.0904
Evaluator: Casey Quade	**County:** Cherokee County	**Longitude:** -81.7457
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 10	**Stream Determination (pick one)** Ephemeral	**Other** *e.g. Quad Name*: Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 7)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 0)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 3)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~2 ft.

Sketch:

EFB

NC DWQ Stream Identification Form Version 4.11

Date: 11/12/2024	**Project/Site**: Proposed Luck Cherokee	**Latitude:** 35.0897
Evaluator: Brandon Smith	**County:** Cherokee County	**Longitude:** -81.7339
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 8	**Stream Determination (pick one)** Ephemeral	**Other** *e.g. Quad Name*: Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 4.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 0.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 3)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~2 ft.

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 11/12/2024	**Project/Site:** Proposed Luck Cherokee	**Latitude:** 35.0904
Evaluator: Brandon Smith	**County:** Cherokee County	**Longitude:** -81.7337
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 10	**Stream Determination (pick one)** Ephemeral	**Other** *e.g. Quad Name:* Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 6)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2 ✓	3
2. Sinuosity of channel along thalweg	0	1 ✓	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0 ✓	1	2	3
4. Particle size of stream substrate	0 ✓	1	2	3
5. Active/relict floodplain	0 ✓	1	2	3
6. Depositional bars or benches	0 ✓	1	2	3
7. Recent alluvial deposits	0 ✓	1	2	3
8. Headcuts	0	1	2 ✓	3
9. Grade control	0	0.5 ✓	1	1.5
10. Natural valley	0	0.5 ✓	1	1.5
11. Second or greater order channel	No = 0 ✓		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 1)				
12. Presence of Baseflow	0 ✓	1	2	3
13. Iron oxidizing bacteria	0 ✓	1	2	3
14. Leaf litter	1.5	1 ✓	0.5	0
15. Sediment on plants or debris	0 ✓	0.5	1	1.5
16. Organic debris lines or piles	0 ✓	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0 ✓		Yes = 3	

C. Biology (Subtotal = 3)				
18. Fibrous roots in streambed	3	2	1 ✓	0
19. Rooted upland plants in streambed	3	2 ✓	1	0
20. Macrobenthos (note diversity and abundance)	0 ✓	1	2	3
21. Aquatic Mollusks	0 ✓	1	2	3
22. Fish	0 ✓	0.5	1	1.5
23. Crayfish	0 ✓	0.5	1	1.5
24. Amphibians	0 ✓	0.5	1	1.5
25. Algae	0 ✓	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0 ✓			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~2.14 ft.

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 11/12/2024	**Project/Site:** Proposed Luck Cherokee	**Latitude:** 35.0846
Evaluator: Brandon Smith	**County:** Cherokee County	**Longitude:** -81.7431
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 10.5	**Stream Determination (pick one)** Ephemeral	**Other** *e.g. Quad Name:* Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 8)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 0.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 2)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~2 ft.

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 11/11/2024	**Project/Site:** Proposed Luck Cherokee	**Latitude:** 35.0926
Evaluator: Myles McKnight	**County:** Cherokee County	**Longitude:** -81.7411
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 11.5	**Stream Determination (pick one)** Ephemeral	**Other** *e.g. Quad Name:* Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 8.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 1)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 2)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~1.98 ft.

Sketch:

EMB

NC DWQ Stream Identification Form Version 4.11

Date: 11/12/2024	**Project/Site**: Proposed Luck Cherokee	**Latitude:** 35.0931
Evaluator: Myles McKnight	**County:** Cherokee County	**Longitude:** -81.7327
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 8	**Stream Determination (pick one)** Ephemeral	**Other** *e.g. Quad Name*: Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 5.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 0.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 2)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~1 ft.

Sketch:

EMC

NC DWQ Stream Identification Form Version 4.11

Date: 11/12/2024	**Project/Site**: Proposed Luck Cherokee	**Latitude:** 35.0887
Evaluator: Myles McKnight	**County:** Cherokee County	**Longitude:** -81.7414
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 12	**Stream Determination (pick one)** Ephemeral	**Other** *e.g. Quad Name*: Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 6.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 1)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 4.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~1.12 ft.

Sketch:

EMD

NC DWQ Stream Identification Form Version 4.11

Date: 11/12/2024	**Project/Site:** Proposed Luck Cherokee	**Latitude:** 35.0832
Evaluator: Myles McKnight	**County:** Cherokee County	**Longitude:** -81.7472
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 12.5	**Stream Determination (pick one)** Ephemeral	**Other** *e.g. Quad Name:* Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 7.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2✓	3
2. Sinuosity of channel along thalweg	0	1✓	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0✓	1	2	3
4. Particle size of stream substrate	0	1✓	2	3
5. Active/relict floodplain	0✓	1	2	3
6. Depositional bars or benches	0✓	1	2	3
7. Recent alluvial deposits	0✓	1	2	3
8. Headcuts	0	1	2✓	3
9. Grade control	0	0.5✓	1	1.5
10. Natural valley	0	0.5	1✓	1.5
11. Second or greater order channel	No = 0✓		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 1.5)				
12. Presence of Baseflow	0	1✓	2	3
13. Iron oxidizing bacteria	0✓	1	2	3
14. Leaf litter	1.5	1	0.5✓	0
15. Sediment on plants or debris	0✓	0.5	1	1.5
16. Organic debris lines or piles	0✓	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0✓		Yes = 3	

C. Biology (Subtotal = 3.5)				
18. Fibrous roots in streambed	3	2	1✓	0
19. Rooted upland plants in streambed	3	2✓	1	0
20. Macrobenthos (note diversity and abundance)	0✓	1	2	3
21. Aquatic Mollusks	0✓	1	2	3
22. Fish	0✓	0.5	1	1.5
23. Crayfish	0	0.5✓	1	1.5
24. Amphibians	0✓	0.5	1	1.5
25. Algae	0✓	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0✓			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~1.5 ft.

Sketch:

EME

NC DWQ Stream Identification Form Version 4.11

Date: 11/12/2024	**Project/Site**: Proposed Luck Cherokee	**Latitude:** 35.0828
Evaluator: Myles McKnight	**County:** Cherokee County	**Longitude:** -81.7473
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 9	**Stream Determination (pick one)** Ephemeral	**Other** *e.g. Quad Name*: Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 4)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 0.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 4.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~1.75 ft.

Sketch:

EMF

NC DWQ Stream Identification Form Version 4.11

Date: 11/12/2024	**Project/Site**: Proposed Luck Cherokee	**Latitude:** 35.0828
Evaluator: Myles McKnight	**County:** Cherokee County	**Longitude:** -81.7471
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 10	**Stream Determination (pick one)** Ephemeral	**Other** *e.g. Quad Name*: Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 4)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 1.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 4.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~1 ft.

Sketch:

ETB

NC DWQ Stream Identification Form Version 4.11

Date: 11/11/2024	**Project/Site**: Proposed Luck Cherokee	**Latitude:** 35.092
Evaluator: Tabitha Williams	**County:** Cherokee County	**Longitude:** -81.7475
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 13.5	**Stream Determination (pick one)** Ephemeral	**Other** *e.g. Quad Name*: Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 12)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 0.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 1)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~2.27 ft.

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 11/11/2024	**Project/Site**: Proposed Luck Cherokee	**Latitude:** 35.0902
Evaluator: Casey Quade	**County:** Cherokee County	**Longitude:** -81.7461
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 22	**Stream Determination (pick one)** Intermittent	**Other** *e.g. Quad Name*: Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 11.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 5.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~2 ft.

Sketch:

SCB

NC DWQ Stream Identification Form Version 4.11

Date: 11/12/2024	**Project/Site**: Proposed Luck Cherokee	**Latitude:** 35.0788
Evaluator: Casey Quade	**County:** Cherokee County	**Longitude:** -81.7501
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 25.5	**Stream Determination (pick one)** Intermittent	**Other** *e.g. Quad Name*: Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 12)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 6.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 7)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~3 ft.

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 11/12/2024	**Project/Site:** Proposed Luck Cherokee	**Latitude:** 35.0898
Evaluator: Brandon Smith	**County:** Cherokee County	**Longitude:** -81.7348
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 37	**Stream Determination (pick one)** Perennial	**Other** *e.g. Quad Name:* Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 18.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 9)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 9.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~12.85 ft.

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 11/12/2024	**Project/Site:** Proposed Luck Cherokee	**Latitude:** 35.0896
Evaluator: Brandon Smith	**County:** Cherokee County	**Longitude:** -81.7341
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 24.5	**Stream Determination (pick one)** Intermittent	**Other** *e.g. Quad Name:* Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 11.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 6)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 7)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~2.5 ft.

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 11/12/2024	**Project/Site:** Proposed Luck Cherokee	**Latitude:** 35.0855
Evaluator: Brandon Smith	**County:** Cherokee County	**Longitude:** -81.7428
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 26	**Stream Determination (pick one)** Intermittent	**Other** *e.g. Quad Name:* Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 12.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 6.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 7)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~3.5 ft.

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 11/12/2024	**Project/Site:** Proposed Luck Cherokee	**Latitude:** 35.0842
Evaluator: Myles McKnight	**County:** Cherokee County	**Longitude:** -81.7474
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 25.5	**Stream Determination (pick one)** Intermittent	**Other** *e.g. Quad Name:* Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 12.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 6.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 6.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~1.71 ft.

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 11/12/2024	**Project/Site:** Proposed Luck Cherokee	**Latitude:** 35.0818
Evaluator: Sam Long	**County:** Cherokee County	**Longitude:** -81.7521
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 30.5	**Stream Determination (pick one)** Perennial	**Other** *e.g. Quad Name:* Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 14.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 8)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 8)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~3.72 ft.

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 11/12/2024	**Project/Site:** Proposed Luck Cherokee	**Latitude:** 35.0814
Evaluator: Sam Long	**County:** Cherokee County	**Longitude:** -81.7507
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 33	**Stream Determination (pick one)** Perennial	**Other** *e.g. Quad Name:* Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 16.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 8)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 8.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~4.45 ft.

Sketch:

SSE

NC DWQ Stream Identification Form Version 4.11

Date: 11/12/2024	**Project/Site**: Proposed Luck Cherokee	**Latitude:** 35.0837
Evaluator: Sam Long	**County:** Cherokee County	**Longitude:** -81.7568
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 22.5	**Stream Determination (pick one)** Intermittent	**Other** *e.g. Quad Name*: Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 11.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 4.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 6.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~3.79 ft.

Sketch:

STA

NC DWQ Stream Identification Form Version 4.11

Date: 11/11/2024	**Project/Site**: Proposed Luck Cherokee	**Latitude:** 35.0906
Evaluator: Tabitha Williams	**County:** Cherokee County	**Longitude:** -81.7469
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 35.5	**Stream Determination (pick one)** Perennial	**Other** *e.g. Quad Name*: Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 18.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 8.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 8.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~3.41 ft.

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 11/11/2024	**Project/Site:** Proposed Luck Cherokee	**Latitude:** 35.0872
Evaluator: Tabitha Williams	**County:** Cherokee County	**Longitude:** -81.7521
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 26	**Stream Determination (pick one)** Intermittent	**Other** *e.g. Quad Name:* Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 13)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 5.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 7.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~3.82 ft.

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 11/11/2024	**Project/Site**: Proposed Luck Cherokee	**Latitude:** 35.0887
Evaluator: Tabitha Williams	**County:** Cherokee County	**Longitude:** -81.7533
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 22	**Stream Determination (pick one)** Intermittent	**Other** *e.g. Quad Name*: Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 10)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 5.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 6.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~0.75 ft.

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 11/12/2024	**Project/Site:** Proposed Luck Cherokee	**Latitude:** 35.0856
Evaluator: Tabitha Williams	**County:** Cherokee County	**Longitude:** -81.7522
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 44	**Stream Determination (pick one)** Perennial	**Other** *e.g. Quad Name:* Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 25.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 8.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 10)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~17.27 ft.

Sketch:

NC DWQ Stream Identification Form Version 4.11

Date: 11/12/2024	**Project/Site**: Proposed Luck Cherokee	**Latitude:** 35.0839
Evaluator: Tabitha Williams	**County:** Cherokee County	**Longitude:** -81.7509
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 23.5	**Stream Determination (pick one)** Intermittent	**Other** *e.g. Quad Name*: Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 6.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 7.5)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 9.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~2.45 ft.

Sketch:

STK

NC DWQ Stream Identification Form Version 4.11

Date: 11/12/2024	**Project/Site:** Proposed Luck Cherokee	**Latitude:** 35.0842
Evaluator: Tabitha Williams	**County:** Cherokee County	**Longitude:** -81.7507
Total Points: *Stream is at least intermittent if ≥ 19 or perennial if ≥ 30** 24	**Stream Determination (pick one)** Intermittent	**Other** *e.g. Quad Name:* Cowpens, SC / Gaffney, SC (2024)

A. Geomorphology (Subtotal = 5.5)	Absent	Weak	Moderate	Strong
1[a]. Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

[a] artificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 8)				
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 10.5)				
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes: Average width of channel is ~1 ft.

Sketch:

APPENDIX E SITE PHOTOGRAPHS

PHOTO 1: Culvert Associated With Perennial Stream STA

PHOTO 2: Perennial Stream STA

PHOTO 3: Typical Project Dry Land

PHOTO 4: Intermittent Stream STE

PHOTO 5: Intermittent Stream STE

PHOTO 6: Intermittent Stream STF

PHOTO 7: Intermittent Stream STE

PHOTO 8: Perennial Stream STH

PHOTO 9: Perennial Stream STH

PHOTO 10: Typical Project Dry Land

PHOTO 11: Typical Project Dry Land

PHOTO 12: Typical Project Dry Land

PHOTO 13: Bridge Associated With Perennial Stream STH

PHOTO 14: Wetland WCG / Intermittent Stream STJ

PHOTO 15: Wetland WCG

PHOTO 16: Intermittent Stream STJ

PHOTO 17: Typical Project Dry Land

PHOTO 18: Wetland WCA

PHOTO 19: Wetland WSA

PHOTO 20: Intermittent Stream SCA

PHOTO 21: Typical Project Dry Land

PHOTO 22: Typical Project Dry Land

PHOTO 23: Typical Project Dry Land

PHOTO 24: Ephemeral Channel ETB

PHOTO 25: Typical Project Dry Land

PHOTO 26: Wetland WSC

PHOTO 27: Wetland WSC

PHOTO 28: Intermittent Stream STE

PHOTO 29: Wetland WCE

PHOTO 30: Intermittent Stream SCB

PHOTO 31: Perennial Stream SSD

PHOTO 32: Perennial Stream SSD

PHOTO 33: Intermittent Stream SSE

PHOTO 34: Wetland WCF

PHOTO 35: Typical Project Dry Land

PHOTO 36: Surface Water WMF (Thicketty Creek Watershed #20 Reservoir)

PHOTO 37: Wetland MB

PHOTO 38: Typical Project Dry Land

PHOTO 39: Wetland MB

PHOTO 40: Wetland MB

PHOTO 41: Perennial Stream STH

PHOTO 42: Perennial Stream SSC

PHOTO 43: Intermittent Stream SSE

PHOTO 44: Intermittent Stream SSE

PHOTO 45: Typical Project Dry Land

PHOTO 46: Typical Project Dry Land

PHOTO 47: Perennial Stream SFA

PHOTO 48: Perennial Stream SFA

PHOTO 49: Intermittent Stream SFB

PHOTO 50: Intermittent Stream SFD

PHOTO 51: Ephemeral Channel EMA

PHOTO 52: Ephemeral Channel EMA

PHOTO 53: Ephemeral Channel EMA

PHOTO 54: Typical Project Dry Land

PHOTO 55: Ephemeral Channel EMB

PHOTO 56: Typical Project Dry Land

PHOTO 57: Ephemeral Channel EMB

PHOTO 58: Ephemeral Channel EMC

PHOTO 59: Typical Project Dry Land

PHOTO 60: Typical Project Dry Land

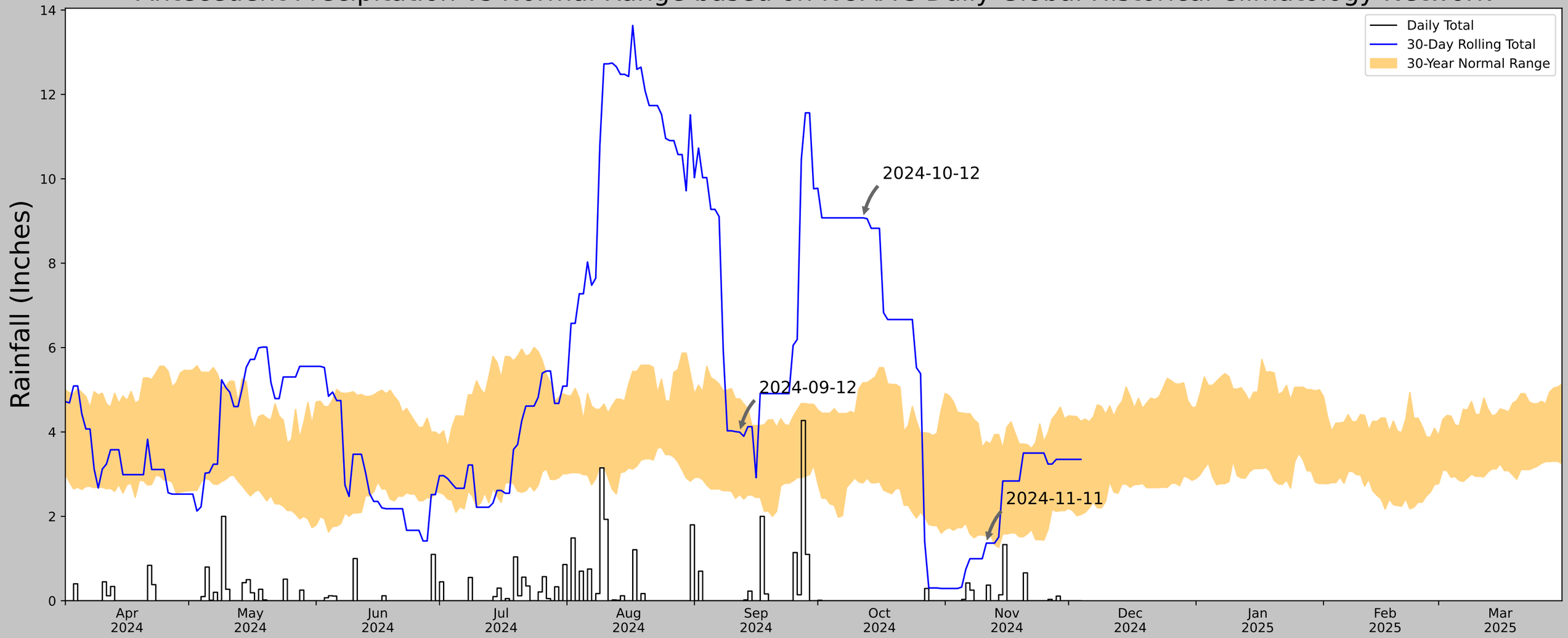
PHOTO 61: Ephemeral Channel EMF

PHOTO 62: Break Between Ephemeral Channel EMD and Intermittent Stream SMA

PHOTO 63: Wetland FC

PHOTO 64: Typical Project Dry Land

APPENDIX F PRECIPITATION AND DROUGHT DATA



Coordinates	35.0857, -81.746
Observation Date	2024-11-11
Elevation (ft)	726.776
Drought Index (PDSI)	Incipient wetness (2024-10)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-11-11	1.535433	3.774016	1.366142	Dry	1	3	3
2024-10-12	2.792126	5.16811	9.074803	Wet	3	2	6
2024-09-12	2.520079	4.786221	3.996063	Normal	2	1	2
Result							Normal Conditions - 11

US Army Corps of Engineers

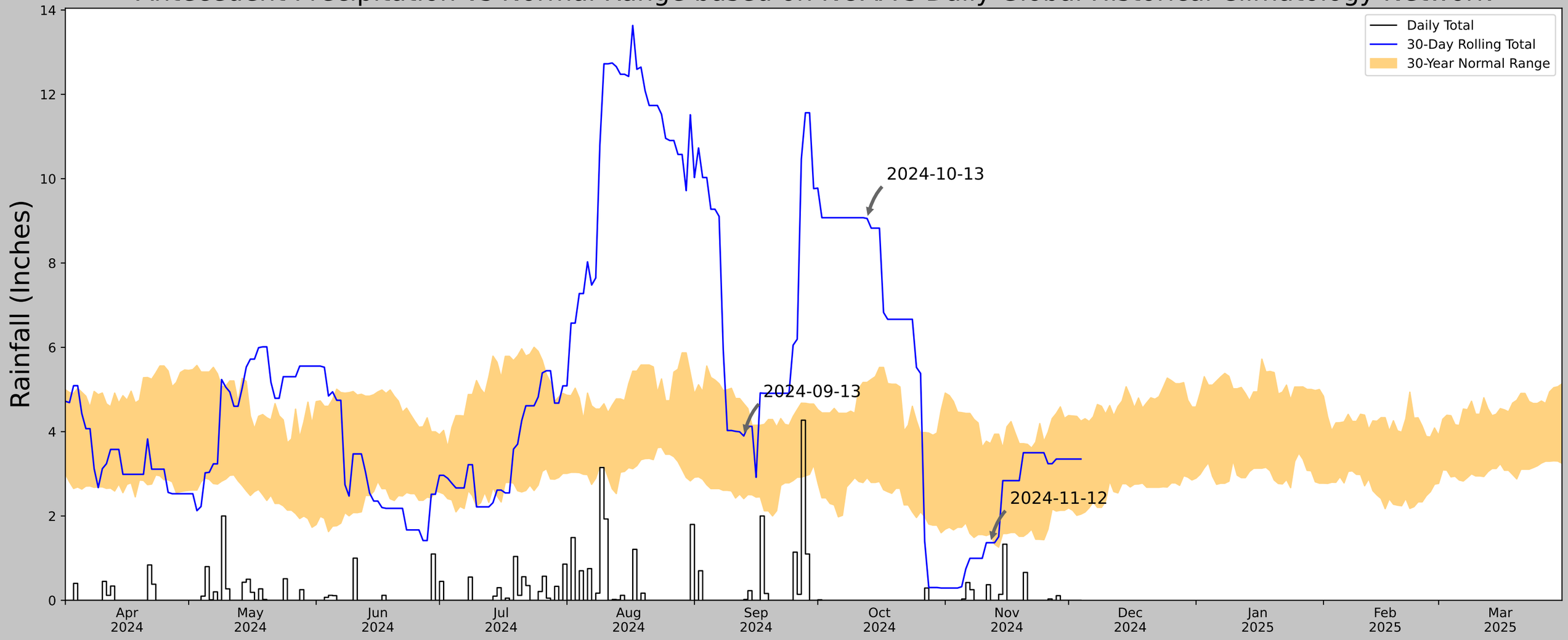
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
GASTON SHOALS	35.1383, -81.5969	580.053	9.177	146.723	5.476	11031	68
BLACKSBURG 3.2 NW	35.151, -81.561	770.013	2.21	189.96	1.414	6	0
SHELBY 5.8 SW	35.2233, -81.6056	661.089	5.893	81.036	3.129	78	0
GAFFNEY 3.3 NNW	35.1163, -81.6803	804.134	4.952	224.081	3.338	142	0
BLACKSBURG 2.6 ENE	35.1336, -81.4745	700.131	6.924	120.078	3.947	2	22
BLACKSBURG 2.5 ENE	35.1347, -81.4783	719.16	6.706	139.107	3.951	1	0
GAFFNEY 1.0 SE	35.0619, -81.6427	846.129	5.879	266.076	4.21	68	0
MOORESBORO 6.0 S	35.2134, -81.7083	709.974	8.155	129.921	4.729	18	0
NINETY NINE IS	35.0317, -81.4928	500.0	9.428	80.053	4.997	1	0
GAFFNEY 3.5 SW	35.0366, -81.7009	693.898	9.162	113.845	5.166	2	0
SHELBY 3.9 WSW	35.2703, -81.6081	833.005	9.142	252.952	6.426	1	0
SHELBY 0.9 WSW	35.2849, -81.5566	840.879	10.381	260.826	7.379	1	0
SHELBY 2 NW	35.3111, -81.5708	819.882	12.03	239.829	8.299	2	0

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



Coordinates	35.0857, -81.746
Observation Date	2024-11-12
Elevation (ft)	726.776
Drought Index (PDSI)	Incipient wetness (2024-10)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-11-12	1.572835	3.717717	1.366142	Dry	1	3	3
2024-10-13	2.909843	5.16811	9.055118	Wet	3	2	6
2024-09-13	2.410236	4.664961	3.897638	Normal	2	1	2
Result							Normal Conditions - 11

US Army Corps of Engineers

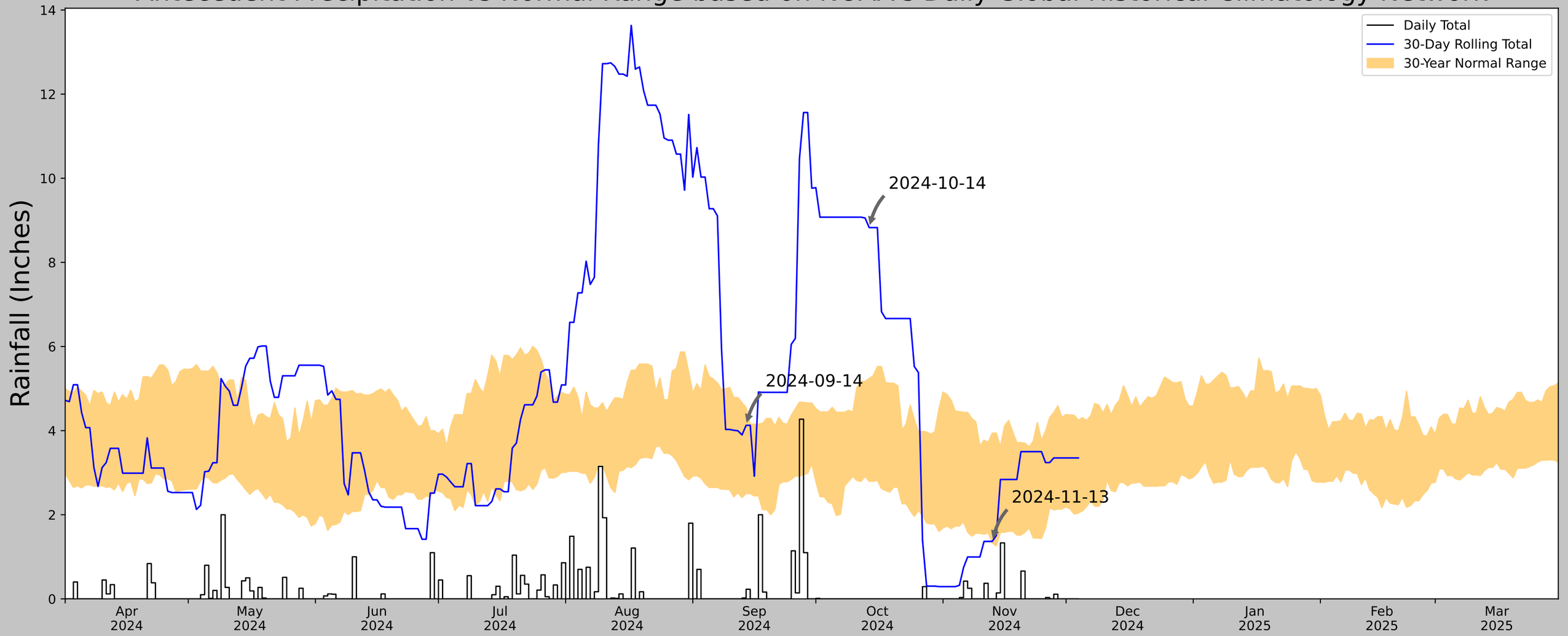
ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
GASTON SHOALS	35.1383, -81.5969	580.053	9.177	146.723	5.476	11031	68
BLACKSBURG 3.2 NW	35.151, -81.561	770.013	2.21	189.96	1.414	6	0
SHELBY 5.8 SW	35.2233, -81.6056	661.089	5.893	81.036	3.129	78	0
GAFFNEY 3.3 NNW	35.1163, -81.6803	804.134	4.952	224.081	3.338	142	0
BLACKSBURG 2.6 ENE	35.1336, -81.4745	700.131	6.924	120.078	3.947	2	22
BLACKSBURG 2.5 ENE	35.1347, -81.4783	719.16	6.706	139.107	3.951	1	0
GAFFNEY 1.0 SE	35.0619, -81.6427	846.129	5.879	266.076	4.21	68	0
MOORESBORO 6.0 S	35.2134, -81.7083	709.974	8.155	129.921	4.729	18	0
NINETY NINE IS	35.0317, -81.4928	500.0	9.428	80.053	4.997	1	0
GAFFNEY 3.5 SW	35.0366, -81.7009	693.898	9.162	113.845	5.166	2	0
SHELBY 3.9 WSW	35.2703, -81.6081	833.005	9.142	252.952	6.426	1	0
SHELBY 0.9 WSW	35.2849, -81.5566	840.879	10.381	260.826	7.379	1	0
SHELBY 2 NW	35.3111, -81.5708	819.882	12.03	239.829	8.299	2	0

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



Coordinates	35.0857, -81.746
Observation Date	2024-11-13
Elevation (ft)	726.776
Drought Index (PDSI)	Incipient wetness (2024-10)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2024-11-13	1.329134	3.940551	1.366142	Normal	2	3	6
2024-10-14	2.795276	5.239764	8.826772	Wet	3	2	6
2024-09-14	2.507087	4.548032	4.125984	Normal	2	1	2
Result							Normal Conditions - 14

US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
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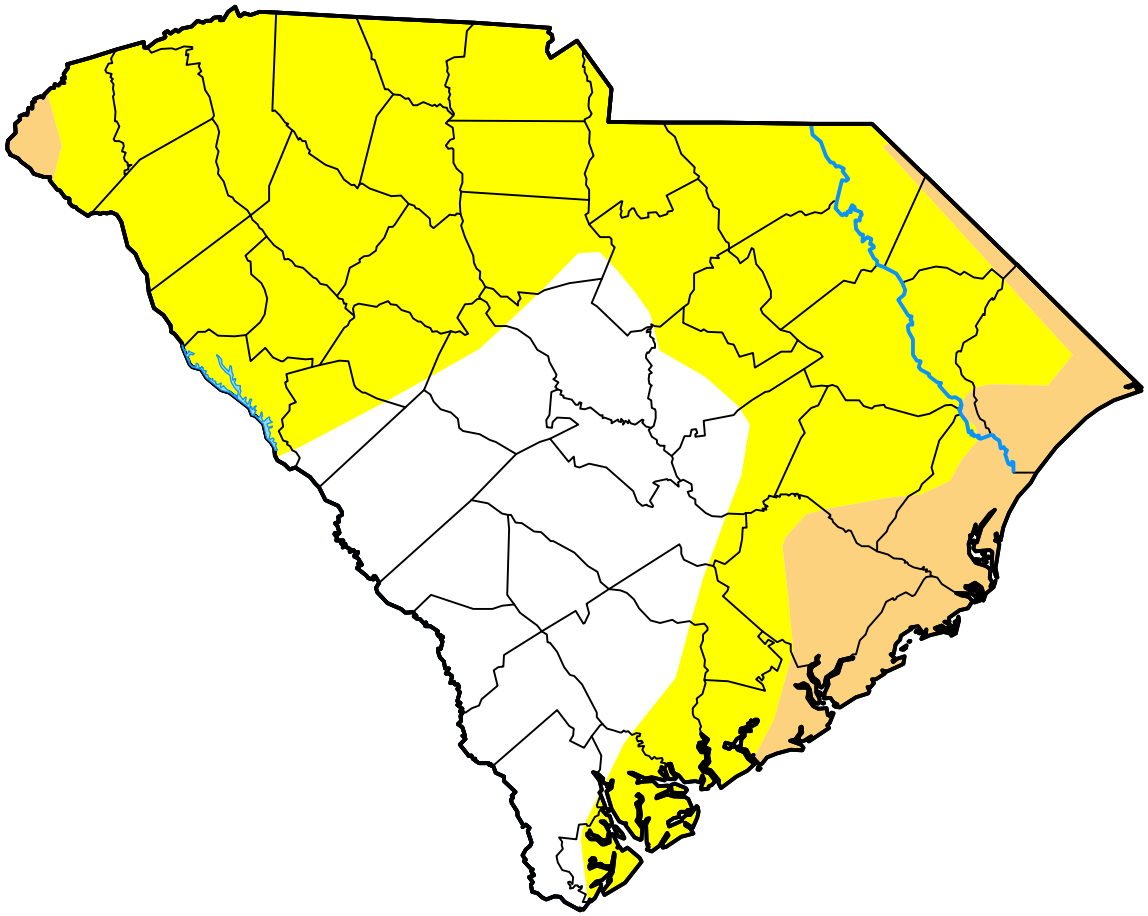
U.S. Drought Monitor

South Carolina



November 12, 2024

(Released Thursday, Nov. 14, 2024)

Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	27.84	72.16	10.70	0.00	0.00	0.00
Last Week *11-05-2024*	0.00	100.00	35.68	0.00	0.00	0.00
3 Months Ago *08-13-2024*	80.73	19.27	0.00	0.00	0.00	0.00
Start of Calendar Year *01-02-2024*	60.82	39.18	16.08	1.61	0.00	0.00
Start of Water Year *10-01-2024*	100.00	0.00	0.00	0.00	0.00	0.00
One Year Ago *11-14-2023*	24.88	75.12	48.54	30.68	6.66	0.00

Intensity:

- None
- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. For more information on the Drought Monitor, go to https://droughtmonitor.unl.edu/About.aspx

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CPC/NOAA/NWS/NCEP

droughtmonitor.unl.edu