

APPENDIX G

Water Quality Assessment Report



1805 Sardis Road North, Suite 101 ♦ Charlotte, North Carolina 28270
Phone: (704) 521-9101 ♦ Fax: (704) 521-9109 ♦ www.deltaairport.com



Mill Creek

Environmental Consultants, LTD

**Chesterfield County Airport (FCI) Environmental Assessment
Perennial Stream Determination and Resource Protection Area
Designation**

**Prepared By
Matt Neely
Mill Creek Environmental Consultants, Ltd
For
Chesterfield County Water Quality**

28 August 2013

Table of Contents

Introduction.....	2
Site Specific Information.....	3
Stream Reaches and Scores.....	4-5
Overall Interpretation.....	5
Appendix A - Preliminary Jurisdictional Determinations, US Army Corps of Engineers	
Appendix B - Wetland Data Forms	
Appendix C - Site Maps	
Appendix D – Soil Maps	
Appendix E – Climate Data	
Appendix F - North Carolina Division of Water Quality-Stream Identification Forms and Photos	

Introduction

Mill Creek Environmental Consultants, Ltd. was hired by Delta Airport Consultants, Inc. to perform multiple environmental services for the conduct of their environmental assessment (EA) of Chesterfield County Airport. This EA included both on and off airport property. Over the course of the past 4 years Mill Creek has conducted multiple wetland delineations in association with our assigned scope of services. During these delineations a number of stream systems were identified that currently have no RPA designation associated with the Chesapeake Bay Preservation Act. In anticipation of future land clearing activities in the vicinity of the identified streams it became necessary to determine the perenniality of these systems to determine if an RPA designation is needed. This determination does not include all stream reaches within or adjacent to airport property, but only those streams identified in preliminary engineering designs as having potential impacts. The field protocols used and determinations in this report apply only to the named and mapped streams found in this report.

Site Specific Information

This report contains information pertaining to four (4) mapped stream segments located to the northwest (NW) of Belmont and Cogbill Roads. Additionally, a field visit to an already existing RPA that extends onto airport property in vicinity of the end of runway 33 has determined that the wetland boundary is contiguous in nature and that the RPA should be extended further southwest (SW). These areas were identified in wetland delineations performed by Mill Creek Environmental Consultants, Ltd. on behalf of the airport. Signed Preliminary Jurisdictional Determinations performed by the US. Army Corps of Engineers can be found in Appendix A of this report. Wetland data forms pertinent to the areas in question used in these delineations can be found in Appendix B. Site maps of these areas showing wetland and stream boundaries can be found in Appendix C.

The North Carolina Division of Water Quality, Identification Methods for the Origins of Intermittent and Perennial Streams, (Version 3.1, Feb. '05) was the Perennial Flow Field Indicator Protocol used for the assessment of all streams within this report. Score sheets and photos for these streams can be found in this report in Appendix F. The Stream assessments began at approximately 0900 on Monday, 26 August 2013. The weather was mostly sunny with a temperature in the low 70s at the start of the evaluation and mid 80s when the assessments were complete. The date of last rainfall was 24 August 2013. The Palmer Drought Severity Index Conditions (Weekly Value for Period Ending Aug 24, 2013) is +2.0 to +2.9, classified as Unusual Moist Spell. Additionally, Chesterfield County has experienced above normal precipitation over the course of the past year. Precipitation data from NOAA's Mid Atlantic River Forecast Center shows that from the period of 27 August 2012 to 26 August 2013, the county is at 141% of normal. Climate data can be found in Appendix E.

Stream Reaches and Scores

Streams were numbered and flagged in accordance with a simple alpha numeric numbering system that corresponds to the feature, reach number, and classification.

Ex. S-1 R4; S=stream, 1=reach designator, R4=classification

The stream reaches and corresponding mapping are flagged in the field and mapped in the appendix as either R4 (intermittent) or RE (ephemeral). No higher flow regimes were discovered during the course of the assessment. A site map depicting the stream reach locations, wetlands, and data points can be found in Appendix C.

S-1 RE

Stream reach one (1) is broken up into two different sections. The upper portion of the segment, named S-1 RE, is approximately 293± linear feet of ephemeral stream segment that originates at a pipe under Belmont Road that serves as a grade control point. This pipe carries storm-water away from areas upstream and on the other side of Belmont Road, down the topographical gradient to the northwest (NW). This segment of the stream ends at a small head cut, where the flow regime changes to intermittent. S-1 RE received a score of **15.75** on the North Carolina Division of Water Quality – Stream Identification Form; Version 3.1. The reach of S-1 was scored on two different sheets, one for the upper ephemeral segment and one for the lower intermittent segment. The photos and score sheet for S-1 RE can be seen in Appendix F.

S-1 R4

The lower portion of S-1 consists of 815± linear feet of intermittent stream segments which are continuations from S-1 RE and a grade control point adjacent to Cogbill road. Waters that flow through this reach originate as storm-water discharge, overland sheet-flow and groundwater discharge down the topographic gradient to the northwest (NW). This section of the reach received a score of **27.75** on the North Carolina Division of Water Quality – Stream Identification Form; Version 3.1. The photos and score sheet for S-1 RE can be seen in Appendix F.

S-2 R4

Stream reach two (2), S-2 R4, is approximately 128± linear feet of intermittent stream located south (S) southwest (SW) of Cogbill Road in the vicinity of Fair Havens Church. Waters enter this reach through overland sheet-flow from the adjacent area including the impervious surface of the church parking lot. This reach received a score of **22.25** on the North Carolina Division of Water Quality – Stream Identification Form; Version 3.1. The photos and score sheet for S-1 RE can be seen in Appendix F.

S-3 R4

Stream reach (3), S-3 R4, is approximately 200± linear feet of intermittent stream located northwest (NW) of S-2 R4, on the west(W) side of the gas line right of way. Waters that

flow through this reach are furnished by overland sheet-flow from the both sides of the reach. The topographic gradient to in this area is steeper than the previously discussed reaches. This reach received a score of **21.25** on the North Carolina Division of Water Quality – Stream Identification Form; Version 3.1. The photos and score sheet for S-1 RE can be seen in Appendix F.

S-4 R4

Stream reach (4), S-4 R4, is approximately 763± linear feet of intermittent stream located approximately 1,500 feet south(S) of S-3 R4. Waters flow into this reach via overland sheet-flow and some groundwater discharge from the north(N) and south(S). The topography in this area is defined by a significant draw that runs northwest(NW) from Belmont Road. Waters within this reach eventually end up in a system of ponds outside of the survey area to the northwest(NW). This reach received a score of **27.25** on the North Carolina Division of Water Quality – Stream Identification Form; Version 3.1. The photos and score sheet for S-1 RE can be seen in Appendix F.

Overall Interpretation

All stream reaches with potential impacts were assessed. None of the reaches received a score of ≥ 30 , which is required for a stream reach to be deemed perennial under the The North Carolina Division of Water Quality, Identification Methods for the Origins of Intermittent and Perennial Streams, (Version 3.1, Feb. '05).

Stream reach one (1) SR-1 RE and SR-1 R4 were determined to be ephemeral and intermittent respectively, while SR-2 R4, SR-3 R4, and SR-4 R4 were all determined to be intermittent. These field determinations combined with the above normal amounts of precipitation enhance the determination that none of the reaches assessed are perennial in nature.

In addition to the above discussed stream reaches, it was determined that a current RPA associated with Reedy Creek in the vicinity of the southeast (SE) end of the airport should be extended to the southwest (SW) due to the contiguous nature of the wetland buffer associated with Reedy Creek. The current wetland map shows a break between wetland areas J and K in the vicinity of the airport fence-line. However, there is a small area of connectivity between these two wetland areas and thus the RPA should be carried further southwest (SW) and incorporate all of wetlands area K. A map of this area can be seen in Appendix A with the wetland preliminary jurisdictional determinations as well as Appendix C.



Environmental Engineering- Water Quality Resource Protection Area Designation Application

Forms should be mailed to:
Attention: Laura E. Barry
Water Quality Analyst
Environmental Engineering
P.O. Box 40, Chesterfield, VA 23832

Date:

Site Information (one form per site)

Project Name: Chesterfield County Airport (FCI) EA
GPIN(s): 7626784600, 7626774033, 7616769185, 7626770200, 7616775343

Site Address: Intersection of Cogbill and Belmont Road
Total Site Acreage: Approx. 50

Submitted by:

Mail:
Delivered:

Has this project been designated "Fast Track" status?

If yes, please list the name of:

Economic Development Contact: _____

Review Engineer: _____

Please select **ONE (1)** as the PRIMARY CONTACT PERSON for this application.

Contact Information of Agent: Primary Contact Person

Contact Person: Matthew A. Neely
Company Name: Mill Creek Environmental Consultants, Ltd.
Mailing Address: 11400 Longtown Drive
Midlothian, VA 23112
Phone: (804) 739-2147
FAX: () _____
Cell: (757) 329-0573
E-mail: millcreekenvironment@comcast.net

Contact Information of Owner: Primary Contact Person

Contact Person: Property Access Cards for Concerned Property Owners are included
Company Name: _____
Mailing Address: _____

Phone: () _____
FAX: () _____
Cell: () _____
E-mail: _____

Project Name: Chesterfield County Airport (FCI) EA

Written permission from property owner is required.

I, as applicant or agent for the owner(s) of the property subject to this application, do hereby certify that the information contained in this report is complete and correct to the best of my knowledge and I am submitting this application for review and approval as provided under the policies of Chesterfield County's Environmental Engineering Department.

Matthew A. Neely, Senior Environmental Scientist, PWD, Mill Creek Environmental Consultants. Ltd.
(Print Name of Agent)

(Signature of Agent) (Date)

I, as owner/co owner of the property subject to this application, give permission to Chesterfield County and associated personnel to enter upon said property for the purpose of conducting a Resource Protection Area Designation.

(Printed Name of Property Owner(s))

(Signature of Property Owner) (Date)

(Signature of Property Owner) (Date)

(Signature of Property Owner) (Date)

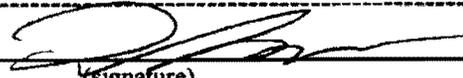
**FIELD SURVEYS
PROPERTY ACCESS AUTHORIZATION**

NAME: Lance Campbell
(print name)

PROPERTY LOCATION: _____
(tax map / parcel reference)

Phone number: 252-349-2214 Day
804-421-1500 Evening

Address: 8400 Belmont Rd.
Chesterfield, VA

ACCESS GRANTED:  **DATE:** 8-6-12
(signature)

PRINT NAME: Lance Campbell

Special Instructions:

- Would you like the consultants to contact you to coordinate their visit in advance?
Yes No
- Would you like to join the consultants while they perform their work? Yes No
- Other special instruction? None

ACCESS DENIED: _____ **DATE:** _____
(signature)

PRINT NAME: _____

REASON FOR DENIAL: _____

Please submit at _____ meeting or return as soon as possible. Thank You!

Ms. Colleen M. Cummins, AICP
Project Manager
Delta Airport Consultants, Inc.
1805 Sardis Road North, Suite 101
Charlotte, NC 28270
704.521.9101

rskj womack@aol.com

FIELD SURVEYS
PROPERTY ACCESS AUTHORIZATION

NAME: Randy + Sharon Womack
(print name)

PROPERTY LOCATION: Tax parcel I. D. # 7646 780427
call # (tax map / parcel reference)

Phone number: 804-338-9247 Day cell # Address: 7419 Belmont Downs
804-339-9311 cell # Chesterfield, VA 23832
Evening News
DO NOT CALL DURING DAY

ACCESS GRANTED: Randy W Womack DATE: 8-6-12
(signature)

PRINT NAME: Randy + Sharon Womack
Sharon Womack

Special Instructions:

- Would you like the consultants to contact you to coordinate their visit in advance?
Yes No
- Would you like to join the consultants while they perform their work? Yes No possibly
- Other special instruction? _____

ACCESS DENIED: _____ DATE: _____
(signature)

PRINT NAME: _____

REASON FOR DENIAL: _____

Please submit at _____ meeting or return as soon as possible. Thank You!

Ms. Colleen M. Cummins, AICP
Project Manager
Delta Airport Consultants, Inc.
1805 Sardis Road North, Suite 101
Charlotte, NC 28270
704.521.9101

**FIELD SURVEYS
PROPERTY ACCESS AUTHORIZATION**

NAME: Fairhavens Church
(print name)

PROPERTY LOCATION: 8200 Belmont Rd
(tax map / parcel reference)

Phone number: 804-743-8822 Day
Evening

Address: 8200 Belmont Rd.
Chesterfield, VA 23132

ACCESS GRANTED: Susan Totty, Chairperson DATE: 8-12-12
(signature) of Board of Stewards

PRINT NAME: Susan Totty, Chairperson Board of Stewards

Special Instructions:

- Would you like the consultants to contact you to coordinate their visit in advance?
Yes No
- Would you like to join the consultants while they perform their work? Yes No
- Other special instruction? Please notify at least 5 days
in advance - Our secretary is in office
8:30 to 1:30 Mon-Thur

ACCESS DENIED: _____ **DATE:** _____
(signature)

PRINT NAME: _____

REASON FOR DENIAL: _____

Please submit at _____ meeting or return as soon as possible. Thank You!

Ms. Colleen M. Cummins, AICP
Project Manager
Delta Airport Consultants, Inc.
1805 Sardis Road North, Suite 101
Charlotte, NC 28270
704.521.9101

**FIELD SURVEYS
PROPERTY ACCESS AUTHORIZATION**

NAME: New Jerusalem International Christian Ministries
(print name)

PROPERTY LOCATION: _____
(tax map / parcel reference)

Phone number: 804 594 0948 Day
_____ Evening

Address: 701 Johnston Willis Dr.
N. Chesterfield Va
23236

ACCESS GRANTED: [Signature] **DATE:** 8-27-12
(signature)

PRINT NAME: Joel Brown

Special Instructions:

- Would you like the consultants to contact you to coordinate their visit in advance?
Yes ___ No
- Would you like to join the consultants while they perform their work? Yes ___ No
- Other special instruction? N/A

ACCESS DENIED: _____ **DATE:** _____
(signature)

PRINT NAME: _____

REASON FOR DENIAL: _____

Please submit at _____ meeting or return as soon as possible. Thank You!

Ms. Colleen M. Cummins, AICP
Project Manager
Delta Airport Consultants, Inc.
1805 Sardis Road North, Suite 101
Charlotte, NC 28270
704.521.9101

**FIELD SURVEYS
PROPERTY ACCESS AUTHORIZATION**

NAME: ANDREW SCOTT LUCKEY
(print name)

lankaya@gmail.com

PROPERTY LOCATION: 8401 BLYMONT RD
(tax map / parcel reference)

Phone number: 279-5635 Day Address: _____
338-1771 Evening call _____

ACCESS GRANTED: Andrew Luckey **DATE:** 20 AUG 2012
(signature)

PRINT NAME: ANDREW S. LUCKEY

Special Instructions:

- Would you like the consultants to contact you to coordinate their visit in advance?
Yes No if possible
- Would you like to join the consultants while they perform their work? Yes No
- Other special instruction? _____

ACCESS DENIED: _____ **DATE:** _____
(signature)

PRINT NAME: _____

REASON FOR DENIAL: _____

Please submit at _____ meeting or return as soon as possible. Thank You!

Ms. Colleen M. Cummins, AICP
Project Manager
Delta Airport Consultants, Inc.
1805 Sardis Road North, Suite 101
Charlotte, NC 28270
704.521.9101

**FIELD SURVEYS
PROPERTY ACCESS AUTHORIZATION**

NAME: Edsel B. CLAYTON
(print name)

PROPERTY LOCATION: 7616775343
(tax map / parcel reference)

Phone number: 609-744-1018 Day
804-271-1413 Evening

Address: 8500 Belmont Rd
Chesterfield VA 23832

ACCESS GRANTED: [Signature] **DATE:** 13 Aug 12
(signature)

PRINT NAME: Edsel CLAYTON (ED)

Special Instructions:

- Would you like the consultants to contact you to coordinate their visit in advance?
Yes ___ No X
- Would you like to join the consultants while they perform their work? Yes ___ No X
- Other special instruction? _____

ACCESS DENIED: _____ **DATE:** _____
(signature)

PRINT NAME: _____

REASON FOR DENIAL: _____

Please submit at _____ meeting or return as soon as possible. Thank You!

Ms. Colleen M. Cummins, AICP
Project Manager
Delta Airport Consultants, Inc.
1805 Sardis Road North, Suite 101
Charlotte, NC 28270
704.521.9101

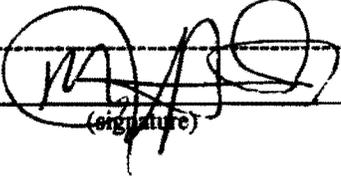
**FIELD SURVEYS
PROPERTY ACCESS AUTHORIZATION**

NAME: Michael Jefferson ; Malette Jefferson
(print name)

PROPERTY LOCATION: 8250 Belmont Road
(tax map / parcel reference)

Phone number: (804) 874-6293 Day
(804) 467-4025 Evening

Address: 8250 Belmont Rd.
Chestel Field, VA 23832

ACCESS GRANTED: 
(signature)

DATE: 7/31/2012

PRINT NAME: _____

Special Instructions:

- Would you like the consultants to contact you to coordinate their visit in advance?
Yes No
- Would you like to join the consultants while they perform their work? Yes No
- Other special instruction? Please call and inform us of your planned schedule to come onto property.

ACCESS DENIED: _____ **DATE:** _____
(signature)

PRINT NAME: _____

REASON FOR DENIAL: _____

Please submit at _____ meeting or return as soon as possible. Thank You!

Ms. Colleen M. Cummins, AICP
Project Manager
Delta Airport Consultants, Inc.
1805 Sardis Road North, Suite 101
Charlotte, NC 28270
704.521.9101

FIELD SURVEYS
PROPERTY ACCESS AUTHORIZATION

NAME: Robert W. & Beverly F Almond Jr
(print name)

PROPERTY LOCATION: 7616 7691 85 00000
(tax map / parcel reference)

Phone number: 804 271 1434 Day
804 271 1434 Evening

Address: 8300 Belmont Rd
Chesterfield VA 23832

ACCESS GRANTED: Robert W. Almond Jr
Beverly F Almond (signature) DATE: 8/13/2012

PRINT NAME: Robert W Almond Jr & Beverly F. Almond

Special Instructions:

- Would you like the consultants to contact you to coordinate their visit in advance?
Yes No
- Would you like to join the consultants while they perform their work? Yes No
- Other special instruction? contact owner each time
for access.

ACCESS DENIED: _____ DATE: _____
(signature)

PRINT NAME: _____

REASON FOR DENIAL: _____

Please submit at _____ meeting or return as soon as possible. Thank You!

Ms. Colleen M. Cummins, AICP
Project Manager
Delta Airport Consultants, Inc.
1805 Sardis Road North, Suite 101
Charlotte, NC 28270
704.521.9101

**FIELD SURVEYS
PROPERTY ACCESS AUTHORIZATION**

NAME: Five Forks Village Homeowners Association, Inc.
(print name)

PROPERTY LOCATION: COMMON AREAS, FIVE FORKS VILLAGE AND FIVE FORKS VILLAGE SOUTH (CASCADE CREEK)
(tax map / parcel reference)

• Phone number: 804-270-1800 Day Address: 3901 Westerre Parkway Suite 100

Evening Richmond, VA 23233

ACCESS GRANTED: *By David S. Rudiger, Pres* **DATE:** 10-2-12
(signature)

PRINT NAME: David S. Rudiger, Pres

Special Instructions:

- Would you like the consultants to contact you to coordinate their visit in advance?
Yes ___ No
- Would you like to join the consultants while they perform their work? Yes ___ No
- Other special instruction? _____

ACCESS DENIED: _____ **DATE:** _____
(signature)

PRINT NAME: _____

REASON FOR DENIAL: _____

Please submit at _____ meeting or return as soon as possible. Thank You!

Project Name: Chesterfield County Airport (FCI) EA

Resource Protection Area Designation Checklist

Please enclose **2 copies** of the following information, to include this application.

All streams, channels, swales and contour crenulations have been evaluated using a site-specific method.

Documents, Maps, and Supporting Data (required)

- A letter from the U.S. Army Corps of Engineers (USACE) confirming the wetlands delineation, or a letter from a qualified wetlands expert on record in Environmental Engineering confirming the accuracy of the portrayed wetland delineation
- A copy of the data forms used in the wetland determination
- Site Map at a scale that clearly shows the following features:
 1. North arrow and contour lines
 2. The property boundary from a certified survey, recorded plat, or the county GIS parcel layer; hand drawn sketches will not be accepted.
 3. The limits of proposed development (if known)
 4. **All** jurisdictional and non-jurisdictional wetlands
 5. The location of data points, wetland flags, and transects used in the wetland determination.
 6. **All** identified water features/resources and RPA features on site
 7. Location of stream assessment reaches and/or photo points
 8. GPS coordinates of break point(s) of surface flow and/or non-contiguous wetlands, intermittent streams
 9. Location of the preliminary site-specific delineated RPA boundary line
 10. Statement confirming that the wetlands delineation portrayed on the map is an accurate representation of the field delineation

Soils Map

- Digital map copy in either ARCGIS Shapefile or AutoCAD DWG/DXF referenced directly to the Virginia State Plane Coordinate System, South Zone in the 1983 Datum (Feet). AutoCAD files must include a layer list identifying the values for the features in the DWG/DXF file. ARCGIS Shapefiles must include items clearly identified in the attribute table.
- Weather conditions at the time of assessment including the date of the last rainfall and Palmer Drought Severity Index conditions

Perennial Flow Field Indicator Protocol (if used)

- North Carolina Division of Water Quality (Version 3.1, Feb.'05) (Preferred) or Fairfax County Method (2003)
- Completed data sheets for each reach including indication of determination
- Identifiable unique field flagging for each stream assessment reach (not wetland flags) at the upper and lower end

Perennial flow Observation Method (if used)

- Color photos taken in accordance with Chesterfield County's Guidance for Site Specific Determinations of Perennial Streams Documented Observation Method
- Date stamp/certification for each photo for both observation dates
- Identifiable unique field flagging at each photo station

Overall Interpretation (required)

- A written report including the reach scores (if applicable), explanation of why a stream was not evaluated (if applicable) and statement whether a stream is perennial or intermittent for each stream reach assessed.
- A written description of the RPA features and justification for **all** non-connected and contiguous wetland breaks along the RPA boundary.

Initial & Date Here _____

Appendix A
Preliminary Jurisdictional Determinations
US. Army Corps of Engineers



DEPARTMENT OF THE ARMY
NORFOLK DISTRICT CORPS OF ENGINEERS
FORT NORFOLK 803 FRONT STREET
NORFOLK VIRGINIA 23510-1096

June 30, 2011

PRELIMINARY JURISDICTIONAL DETERMINATION

Southern Virginia Regulatory Section
2007-00012 (Reedy Creek)

Mr. Matt Neely
Mill Creek Environmental Consultants, LTD
11400 Longtown Drive
Midlothian, Virginia 23112

Dear Mr. Neely:

This letter is in regard to your request for a preliminary jurisdictional determination for Chesterfield County Airport located west of Route 10 and north of Route 288, in Chesterfield County, Virginia.

The wetland delineation map prepared by Mill Creek entitled "Wetlands Mapping, Chesterfield County Airport, Richmond, Virginia" dated February 2010, received by the Corps on June 22, 2011 and on file with the Corps, provides the location of wetlands on the property listed above. The basis for this delineation includes application of the Corps' 1987 Wetland Delineation Manual, the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, the positive indicators of wetland hydrology, hydric soils, and hydrophytic vegetation, and the presence of an ordinary water mark.

Discharges of dredged or fill material, including those associated with mechanized landclearing, into waters and/or wetlands on this site may require a Department of the Army permit and authorization by state and local authorities including a Virginia Water Protection Permit from the Virginia Department of Environmental Quality (DEQ), a permit from the Virginia Marine Resources Commission (VMRC) and/or a permit from your local wetlands board. This letter is a confirmation of the Corps preliminary jurisdiction for the waters and/or wetlands on the subject property and does not authorize any work in these areas. Please obtain all required permits before starting work in the delineated waters/wetland areas.

This is a preliminary jurisdictional determination and is therefore not a legally binding determination regarding whether Corps jurisdiction applies to the waters or wetlands in question. Accordingly, you may either consent to jurisdiction as set out in this preliminary jurisdictional determination and the attachments hereto if you agree with the determination, or you may request and obtain an approved jurisdictional determination.

This delineation of waters and/or wetlands is valid for a period of five years from the date of this letter unless new information warrants revision prior to the expiration date. Enclosed is a copy of the "Preliminary Jurisdictional Determination Form" for your records. Please review the document, sign it and return it as an e-mail attachment to silvia.b.gazzera@usace.army.mil within 30 days of receipt and keep one for your records.

Please contact Dr. Silvia Gazzera in the Richmond Field Office at 9100 Arboretum Parkway, Suite 235, Richmond, Virginia 23236, (804) 212-6817 with any questions.

Sincerely,

Silvia B. Gazzera, Ph.D
Environmental Scientist

Attachments:
Preliminary JD Form
Supplemental Preapplication Information

Copy Furnished w/out enclosures:
Virginia Department of Environmental Quality, Glen Allen, Virginia
Chesterfield County, Department of Environmental Engineering, Chesterfield, Virginia.

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION:

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): Thursday, June 30, 2011

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:
Delta Airport Consultants, Inc.
8008 Corporate Center Drive, Suite 300
Charlotte, NC 28226

C. DISTRICT OFFICE: Norfolk District (CENAO-REG)

FILE NAME: Chesterfield County Airport

FILE NUMBER: 2007-00012

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: **VIRGINIA** County/parish/borough: Chesterfield City:

Center coordinates of site (lat/long in degree decimal format):

Latitude: 37-24-16 ° N Longitude: 77-31-16 ° W

Universal Transverse Mercator:

Name of nearest waterbody: Reedy Creek

Identify (estimate) amount of waters in the review area:

Non-wetland waters: 9,061 linear feet; width (ft); and/or acres.

Cowardin Class: R4

Stream Flow:

Wetlands: 66.61 acres

Cowardin Class: 50.51 (PFO), 9.44 (PSS), 6.66 (PEM)

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal:

Non-Tidal:

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date:

Field Determination. Date(s): May 12, 2011, June 16, 2011

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

3. This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA:

Data reviewed for preliminary JD (check all that apply) - checked items should be included in case file and, where checked and requested, appropriately reference sources below.

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Wetland map prepared by Mill Creek Consultants entitled "Wetland Mapping, Chesterfield County Airport, Richmond, Virginia" dated February 10, 2011 and received by the Corps on June 22, 2011.

- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps:
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas:
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: Chesterfield 1" = 2000'
- USDA Natural Resources Conservation Service Soil Survey.
 - Citation:
 - National wetlands inventory map(s). Cite name:
 - State/Local wetland inventory map(s):
 - FEMA/FIRM maps:
 - 100-year Floodplain Elevation: (National Geodetic Vertical Datum of 1929)
 - Photographs: Aerial (Name & Date):
or Other (Name & Date):
 - Previous determination(s):
File no. and date of response letter:
 - Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

GAZZERA.SILVI
A.B.1242826155

Digitally signed by
GAZZERA.SILVI.A.B.1242826155
DN: cn=US, o=U.S. Government, ou=DoD,
ou=PM, ou=USA
cm=GAZZERA.SILVI.A.B.1242826155
Date: 2011.10.05 08:47:38 -0400

Signature
Regulatory Project Manager
(REQUIRED)

2011-06-30

Date

Signature of person requesting
Preliminary JD
(REQUIRED, unless obtaining the signature is impracticable)

Date



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NORFOLK DISTRICT CORPS OF ENGINEERS
FORT NORFOLK 803 FRONT STREET
NORFOLK VIRGINIA 23510-109

JUNE 30, 2001

Supplemental Preapplication Information

Project Number: 2007-00012

Applicant: Delta Airport Consultants, Inc.

Project Location:

1. A search of the Virginia Department of Historic Resources data revealed the following:

- No known historic properties are located on the property.
- The following known architectural resources are located on the property:
- The following known archaeological resources are located on the property:
- The following known historic resources are located in the vicinity of the property (potential for effects to these resources from future development):

NOTE:

- 1) *The information above is for planning purposes only. In most cases, the property has not been surveyed for historic resources. Undiscovered historic resources may be located on the subject property or adjacent properties and this supplemental information is not intended to satisfy the Corps' requirements under Section 106 of the National Historic Preservation Act (NHPA).*
- 2) *Prospective permittees should be aware that Section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.*

2. A search of the data supplied by the Virginia Department of Conservation and Recreation and the Virginia Department of Game and Inland Fisheries revealed the following:

- No known populations of threatened or endangered species are located on the property or within a one to two mile radius.
- The following federally-listed species are known to be within a one to two mile radius of the property:
- The following state-listed (or other) species are known to be within a three mile radius of the property: Upland sandpiper, Loggerhead Shrike, Barking tree frog, Bald Eagle, Migrant loggerhead shrike.

Please note this information is being provided to you based on the preliminary data you submitted to the Corps relative to project boundaries and project plans. Consequently, these findings and recommendations are subject to change if the project scope changes or new information becomes available and the accuracy of the data.

SAMPLE

Site Number	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource in review area	Class of aquatic resource
1	37.4036458	-77.5214740	PSS	9.44 acres	section 404
2	37.4036458	-77.5214740	PEM	6.66 acres	section 404
3	37.4036458	-77.5214740	PFO	50.51 acres	section 404
4	37.4036458	-77.5214740	R4	9,061lf	section 404
5					
6					



**DEPARTMENT OF THE ARMY
NORFOLK DISTRICT CORPS OF ENGINEERS
FORT NORFOLK 803 FRONT STREET
NORFOLK VIRGINIA 23510-1096**

November 13, 2012

PRELIMINARY JURISDICTIONAL DETERMINATION

Southern Virginia Regulatory Section
2007-00012 (Reedy Creek, Licking Creek)

Mr. Matt Neely
Mill Creek Environmental Consultants, LTD
11400 Longtown Drive
Midlothian, Virginia 23112

Dear Mr. Neely:

This letter is in regard to your request for a preliminary jurisdictional determination for 2 parcels of land located north and south of the Chesterfield County Airport, north of Route 288, in Chesterfield County, Virginia.

The wetland delineation maps prepared by Mill Creek entitled "Chesterfield County Airport Wetland Delineation Southeast Survey Area" and "Chesterfield County Airport Wetland Delineation Northwest Survey Area" and on file with the Corps, provides the location of wetlands on the property listed above. The basis for this delineation includes application of the Corps' 1987 Wetland Delineation Manual, the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, the positive indicators of wetland hydrology, hydric soils, and hydrophytic vegetation, and the presence of an ordinary water mark.

Discharges of dredged or fill material, including those associated with mechanized landclearing, into waters and/or wetlands on this site may require a Department of the Army permit and authorization by state and local authorities including a Virginia Water Protection Permit from the Virginia Department of Environmental Quality (DEQ), a permit from the Virginia Marine Resources Commission (VMRC) and/or a permit from your local wetlands board. This letter is a confirmation of the Corps preliminary jurisdiction for the waters and/or wetlands on the subject property and does not authorize any work in these areas. Please obtain all required permits before starting work in the delineated waters/wetland areas.

This is a preliminary jurisdictional determination and is therefore not a legally binding determination regarding whether Corps jurisdiction applies to the waters or wetlands in question. Accordingly, you may either consent to jurisdiction as set out in this preliminary jurisdictional determination and the attachments hereto if you agree with the determination, or you may request and obtain an approved jurisdictional determination.

This delineation of waters and/or wetlands is valid for a period of five years from the date of this letter unless new information warrants revision prior to the expiration date. Enclosed is a copy of the "Preliminary Jurisdictional Determination Form" for your records. Please review the document, sign it and return it as an e-mail attachment to silvia.b.gazzera@usace.army.mil within 30 days of receipt and keep one for your records.

Please contact Dr. Silvia Gazzera in the Richmond Field Office at 9100 Arboretum Parkway, Suite 235, Richmond, Virginia 23236, (804) 212-6817 with any questions.

Sincerely,

**GAZZERA.SILVIA.B
.1242826155**

Silvia B. Gazzera, Ph.D
Environmental Scientist

Digitally signed by GAZZERA.SILVIA.B.1242826155
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI,
ou=USA, cn=GAZZERA.SILVIA.B.1242826155
Date: 2012.11.13 17:07:27 -05'00'

Attachments:
Preliminary JD Form
Supplemental Preapplication Information

Copy Furnished:
Virginia Department of Environmental Quality, Glen Allen, Virginia
Chesterfield County, Department of Environmental Engineering, Chesterfield, Virginia.

Chesterfield County Airport Wetland Delineation Northwest Survey Area

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
False Easting: 11 482 916 6667
False Northing: 3 280 833 3333
Central Meridian: -78.5000
Standard Parallel 1: 36.7667
Standard Parallel 2: 37.9667
Latitude Of Origin: 36.3333
Units: Foot US

Legend

- ⊗ Data points
- ▭ Survey Area Boundary
- Stream = approx. 2318.3 linear feet
- ▭ PFO = approx. 3.3 acres
- ▭ PEM = Approx 2.1 acres
- ▭ Pond = approx. .06 acres

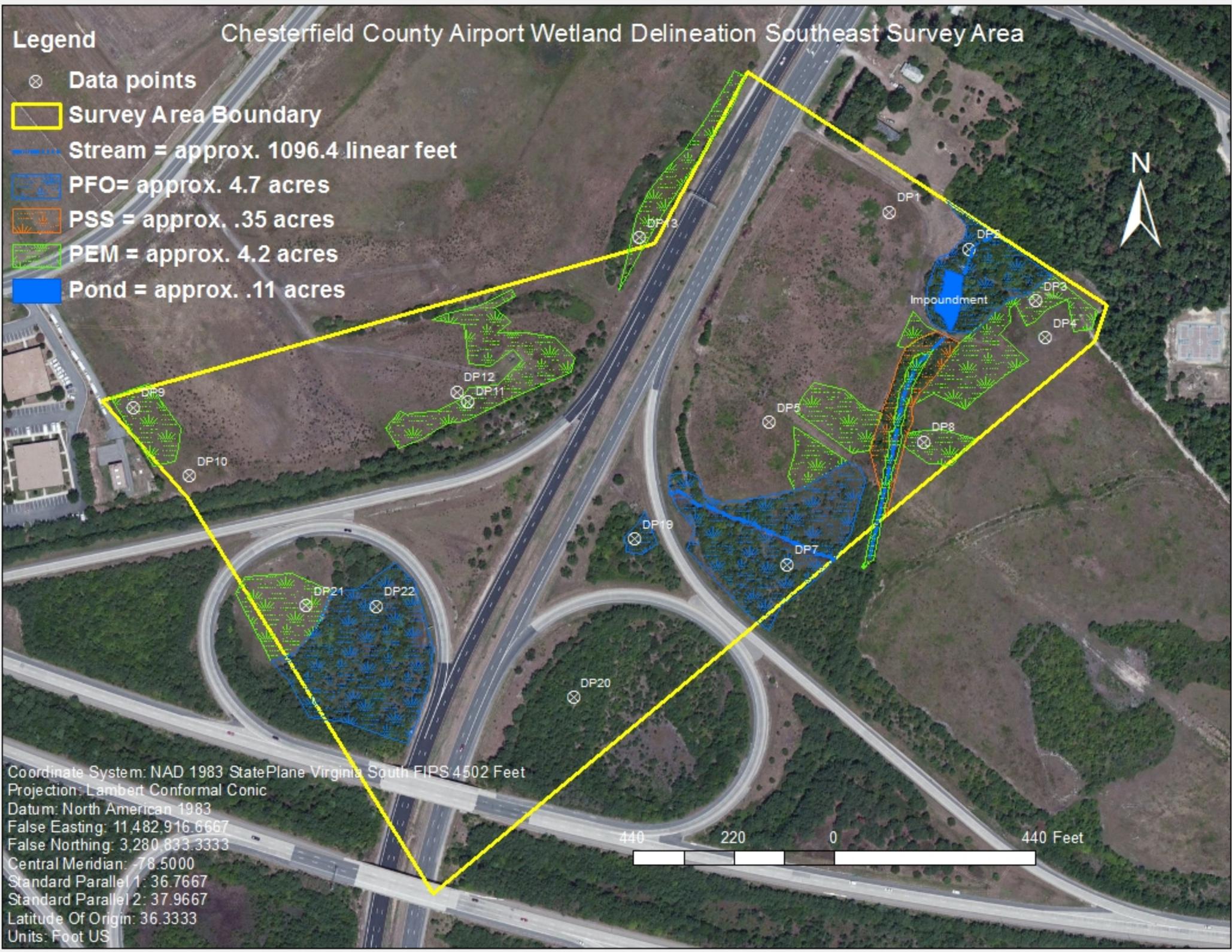


420 210 0 420 Feet

Chesterfield County Airport Wetland Delineation Southeast Survey Area

Legend

- ⊗ Data points
- ▭ Survey Area Boundary
- Stream = approx. 1096.4 linear feet
- ▭ PFO = approx. 4.7 acres
- ▭ PSS = approx. .35 acres
- ▭ PEM = approx. 4.2 acres
- ▭ Pond = approx. .11 acres



Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
False Easting: 11,482,916.6667
False Northing: 3,280,833.3333
Central Meridian: -78.5000
Standard Parallel 1: 36.7667
Standard Parallel 2: 37.9667
Latitude Of Origin: 36.3333
Units: Foot US

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION:

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): Tuesday, November 13, 2012

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:
Chesterfield County Airport

C. DISTRICT OFFICE: Norfolk District (CENAO-REG)

FILE NAME: Chesterfield County Airport

FILE NUMBER: 2007-00012

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: **VIRGINIA** County/parish/borough: Chesterfield City:

Center coordinates of site (lat/long in degree decimal format):

Latitude: 37-23-45 ° N Longitude: 77-30-49 ° W

Universal Transverse Mercator:

Name of nearest waterbody: Reedy Creek, Licking Creek

Identify (estimate) amount of waters in the review area:

Non-wetland waters: 3414.7 linear feet; width (ft); and/or acres.

Cowardin Class: R4

Stream Flow:

Wetlands: 14.82 acres

Cowardin Class: PFO, PSS, PEM, POW

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal:

Non-Tidal:

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date:

Field Determination. Date(s): 11/8/2012

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.
2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.
3. This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA:

Data reviewed for preliminary JD (check all that apply) - checked items should be included in case file and, where checked and requested, appropriately reference sources below.

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
Wetland delineation map entitled "Chesterfield County Airport Wetland Delineation Southeast Area" and "Chesterfield County Airport Wetland Delineation Northwest Area"

- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps:
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas:
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: Chesterfield 1" = 2000'
- USDA Natural Resources Conservation Service Soil Survey.
 - Citation:
- National wetlands inventory map(s). Cite name: U.S.F.W.S.
- State/Local wetland inventory map(s):
- FEMA/FIRM maps:
- 100-year Floodplain Elevation: (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date):
 - or Other (Name & Date):
- Previous determination(s):
 - File no. and date of response letter:
- Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

GAZZERA.SILVI
A.B.1242826155

Digitally signed by
GAZZERA.SILVI.A.B.1242826155
DN: cn=US, o=U.S. Government, ou=DOD,
ou=PMI, ou=USA
c=GAZZERA.SILVI.A.B.1242826155
Date: 2012.10.05 08:47:35 -0400

Signature
Regulatory Project Manager
(REQUIRED)

2012-11-13

Date

Signature of person requesting
Preliminary JD
(REQUIRED, unless obtaining the signature is impracticable)

Date

SAMPLE

Site Number	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource in review area	Class of aquatic resource
5	37.3958498	-77.5139509	PFO	4.7 acres	section 404
6	37.3958498	-77.5139509	PEM	4.2 acres	section 404
7	37.3958498	-77.5139509	PSS	0.35 acre	section 404
8	37.3958498	-77.5139509	R4	1096.4 lf	section 404
9	37.3958498	-77.5139509	POW	0.11 acre	section 404



**DEPARTMENT OF THE ARMY
NORFOLK DISTRICT CORPS OF ENGINEERS
FORT NORFOLK 803 FRONT STREET
NORFOLK VIRGINIA 23510-1096**

June 12, 2013

PRELIMINARY JURISDICTIONAL DETERMINATION

Southern Virginia Regulatory Section
2007-00012 (Reedy Creek, Proctors Creek)

Mr. Matt Neely
Mill Creek Environmental Consultants, LTD
11400 Longtown Drive
Midlothian, Virginia 23112

Dear Mr. Neely:

This letter is in regard to your request for a preliminary jurisdictional determination for multiple parcels of land located at and near the intersection of Route 10 and Route 288, in Chesterfield County, Virginia.

The wetland delineation maps prepared by Mill Creek entitled "Chesterfield County Airport Wetland Addendum" received by the Corps on May 13, 2013, and on file with the Corps, provides the location of wetlands on the property listed above. The basis for this delineation includes application of the Corps' 1987 Wetland Delineation Manual, the Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, the positive indicators of wetland hydrology, hydric soils, and hydrophytic vegetation, and the presence of an ordinary water mark.

Discharges of dredged or fill material, including those associated with mechanized landclearing, into waters and/or wetlands on this site may require a Department of the Army permit and authorization by state and local authorities including a Virginia Water Protection Permit from the Virginia Department of Environmental Quality (DEQ), a permit from the Virginia Marine Resources Commission (VMRC) and/or a permit from your local wetlands board. This letter is a confirmation of the Corps preliminary jurisdiction for the waters and/or wetlands on the subject property and does not authorize any work in these areas. Please obtain all required permits before starting work in the delineated waters/wetland areas.

This is a preliminary jurisdictional determination and is therefore not a legally binding determination regarding whether Corps jurisdiction applies to the waters or wetlands in question. Accordingly, you may either consent to jurisdiction as set out in this preliminary jurisdictional determination and the attachments hereto if you agree with the determination, or you may request and obtain an approved jurisdictional determination.

This delineation of waters and/or wetlands is valid for a period of five years from the date of this letter unless new information warrants revision prior to the expiration date. Enclosed is a copy of the "Preliminary Jurisdictional Determination Form" for your records. Please review the document, sign it and return it as an e-mail attachment to silvia.b.gazzera@usace.army.mil within 30 days of receipt and keep one for your records.

Please contact Dr. Silvia Gazzera in the Richmond Field Office at 9100 Arboretum Parkway, Suite 235, Richmond, Virginia 23236, (804) 212-6817 with any questions.

Sincerely,

GAZZERA.SILVIA.

B.1242826155

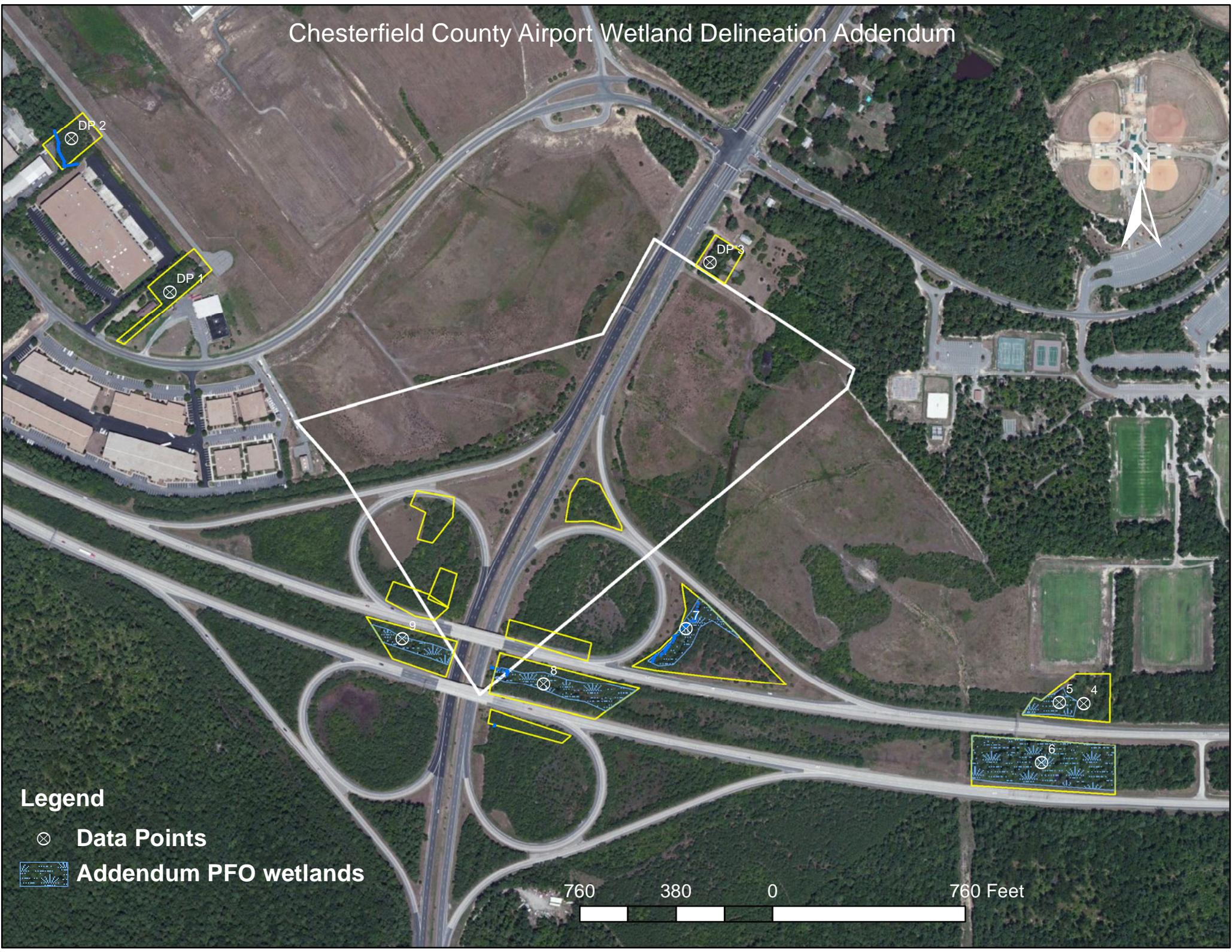
Silvia B. Gazzera, Ph.D.
Environmental Scientist

Digitally signed by GAZZERA.SILVIA.B.1242826155
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI,
ou=USA, cn=GAZZERA.SILVIA.B.1242826155
Date: 2013.06.12 11:04:23 -04'00'

Attachments:
Preliminary JD Form
Supplemental Preapplication Information

Copy Furnished:
Virginia Department of Environmental Quality, Glen Allen, Virginia
Chesterfield County, Department of Environmental Engineering, Chesterfield, Virginia.

Chesterfield County Airport Wetland Delineation Addendum



Legend

- ⊗ Data Points
-  Addendum PFO wetlands

760 380 0 760 Feet

Chesterfield County Airport Wetland Delineation Addendum (South)



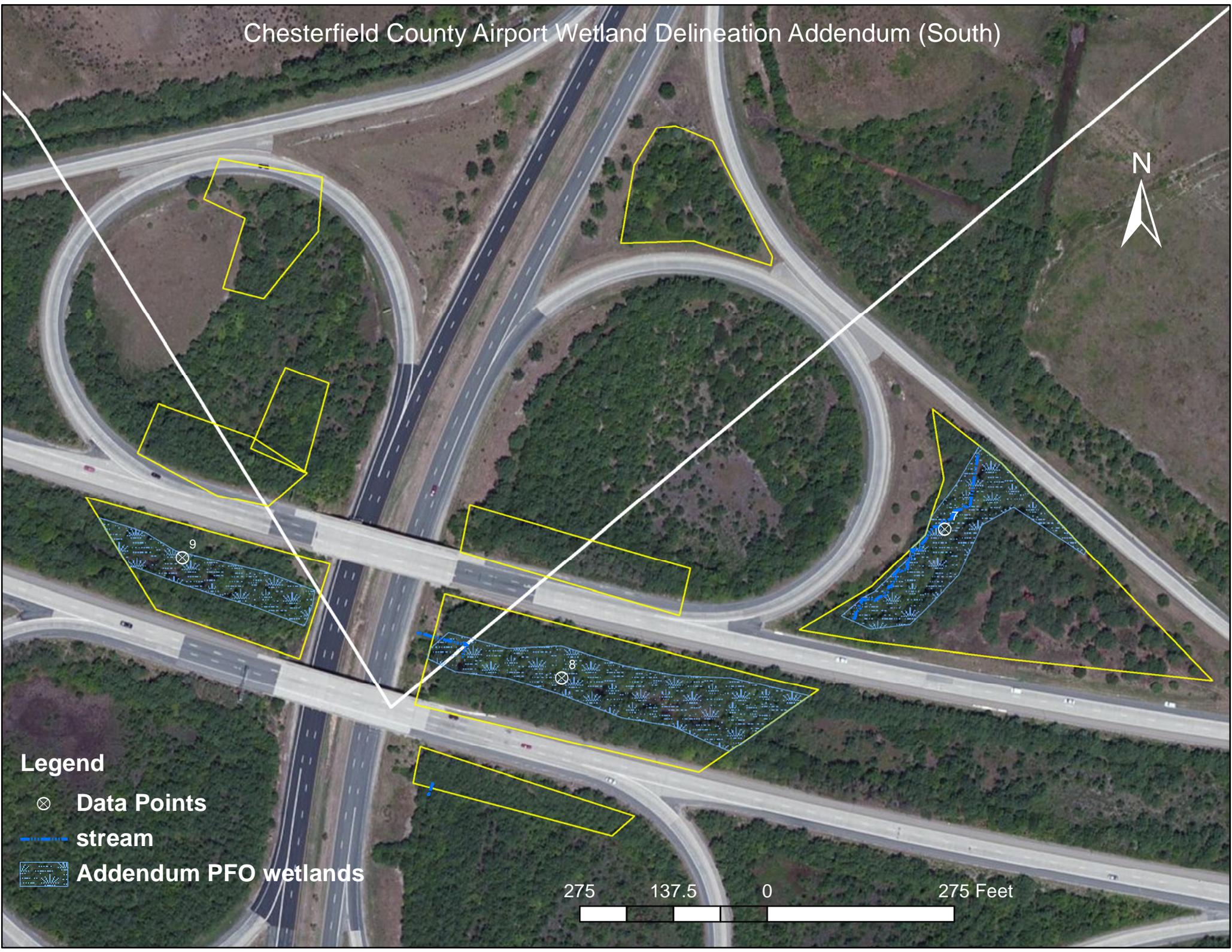
Legend

⊗ Data Points

— stream

▨ Addendum PFO wetlands

275 137.5 0 275 Feet

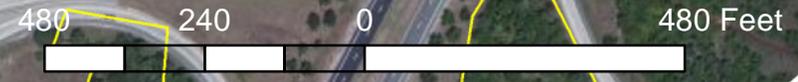


Chesterfield County Airport Wetland Delineation Addendum (North)



Legend

- ⊗ DPs Addendum
- Industrial Area outfall and stream



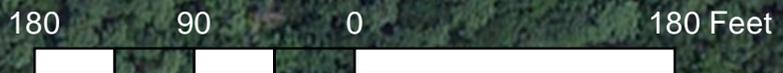
Chesterfield County Airport Wetland Delineation Addendum (East)



Legend

⊗ Data Points

 Addendum PFO wetlands



PRELIMINARY JURISDICTIONAL DETERMINATION FORM

BACKGROUND INFORMATION:

A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): Wednesday, June 12, 2013

B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:
Chesterfield County Airport

C. DISTRICT OFFICE: Norfolk District (CENAO-REG)

FILE NAME: Chesterfield County Airport

FILE NUMBER: 2007-00012

D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:
(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)

State: **VIRGINIA** County/parish/borough: Chesterfield City:

Center coordinates of site (lat/long in degree decimal format):

Latitude: 37-23-38 ° N Longitude: 77-30-50 ° W

Universal Transverse Mercator:

Name of nearest waterbody: Reedy Creek, Proctors Creek

Identify (estimate) amount of waters in the review area:

Non-wetland waters: 793 linear feet; width (ft); and/or acres.

Cowardin Class: R4

Stream Flow:

Wetlands: 4.4 acres

Cowardin Class: PFO

Name of any water bodies on the site that have been identified as Section 10 waters:

Tidal:

Non-Tidal:

E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

Office (Desk) Determination. Date:

Field Determination. Date(s): 6/15/2013

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.
2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.
3. This preliminary JD finds that there "may be" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

SUPPORTING DATA:

Data reviewed for preliminary JD (check all that apply) - checked items should be included in case file and, where checked and requested, appropriately reference sources below.

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: Wetland delineation map entitled "Chesterfield County Airport Wetland Addendum" received by the Corps on May 13, 2013.

- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps:
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas:
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: Chesterfield1" = 2000'
- USDA Natural Resources Conservation Service Soil Survey.

Citation:
- National wetlands inventory map(s). Cite name: Corps GIS
- State/Local wetland inventory map(s):
- FEMA/FIRM maps:
- 100-year Floodplain Elevation: (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date):

or Other (Name & Date):
- Previous determination(s):

File no. and date of response letter:
- Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

GAZZERA.SILVI
A.B.1242826155

Digitally signed by
GAZZERA.SILVI.A.B.1242826155
DN: cn=US, o=U.S. Government, ou=DoD,
ou=PRM, ou=USC, email=GAZZERA.SILVI.A.B.1242826155
Date: 2013.10.05 08:47:38 -0400

Signature
Regulatory Project Manager
(REQUIRED)

2013-06-12

Date

Signature of person requesting
Preliminary JD
(REQUIRED, unless obtaining the signature is impracticable)

Date

SAMPLE

Site Number	Latitude	Longitude	Cowardin Class	Estimated amount of aquatic resource in review area	Class of aquatic resource
1	37.3940535	-77.5139448	PFO	4.4 acres	section 404
2	37.3940535	-77.5139448	R4	793	section 404



REPLY TO
ATTENTION OF

DEPARTMENT OF THE ARMY
NORFOLK DISTRICT CORPS OF ENGINEERS
FORT NORFOLK 803 FRONT STREET
NORFOLK VIRGINIA 23510-109

JUNE 12, 2013

Supplemental Preapplication Information

Project Number: NAO-2007-00012

Applicant: Chesterfield County Airport

Project Location: Route 10 and Route 288, Chesterfield County, Virginia

1. A search of the Virginia Department of Historic Resources data revealed the following:

3 No known historic properties are located on the property:

The following known architectural resources are located on the property: 020-0641

The following known archaeological resources are located on the property:

The following known historic resources are located in the vicinity of the property (potential for effects to these resources from future development):

NOTE:

1) *The information above is for planning purposes only. In most cases, the property has not been surveyed for historic resources. Undiscovered historic resources may be located on the subject property or adjacent properties and this supplemental information is not intended to satisfy the Corps' requirements under Section 106 of the National Historic Preservation Act (NHPA).*

2) *Prospective permittees should be aware that Section 110k of the NHPA (16 U.S.C. 470h-2(k)) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of Section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant.*

2. A search of the data supplied by the Virginia Department of Conservation and Recreation and the Virginia Department of Game and Inland Fisheries revealed the following:

No known populations of threatened or endangered species are located on the property or within a one to two mile radius.

The following federally-listed species are known to be within a one to two mile radius of the property:

The following state-listed (or other) species are known to be within a one to two mile radius of the property:

Please note this information is being provided to you based on the preliminary data you submitted to the Corps relative to project boundaries and project plans. Consequently, these findings and recommendations are subject to change if the project scope changes or new information becomes available and the accuracy of the data.

Appendix B
Wetland Data Forms

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: _____ City/County: _____ Sampling Date: _____
 Applicant/Owner: _____ State: _____ Sampling Point: _____
 Investigator(s): _____ Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____
 Slope (%): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes _____ No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes _____ No _____ Hydric Soil Present? Yes _____ No _____ Wetland Hydrology Present? Yes _____ No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Remarks:	

HYDROLOGY

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

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

Sampling Point: _____

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: _____ (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				Prevalence Index worksheet:
Sapling Stratum (Plot size: _____)				Total % Cover of: _____ Multiply by: _____
1. _____	_____	_____	_____	OBL species _____ x 1 = _____
2. _____	_____	_____	_____	FACW species _____ x 2 = _____
3. _____	_____	_____	_____	FAC species _____ x 3 = _____
4. _____	_____	_____	_____	FACU species _____ x 4 = _____
5. _____	_____	_____	_____	UPL species _____ x 5 = _____
6. _____	_____	_____	_____	Column Totals: _____ (A) _____ (B)
7. _____	_____	_____	_____	Prevalence Index = B/A = _____
_____ = Total Cover				Hydrophytic Vegetation Indicators:
Shrub Stratum (Plot size: _____)				___ 1- Rapid Test for Hydrophytic Vegetation
1. _____	_____	_____	_____	___ 2 - Dominance Test is >50%
2. _____	_____	_____	_____	___ 3 - Prevalence Index is ≤3.0 ¹
3. _____	_____	_____	_____	___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
_____ = Total Cover				Definitions of Five Vegetation Strata:
Herb Stratum (Plot size: _____)				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
1. _____	_____	_____	_____	Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
2. _____	_____	_____	_____	Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
3. _____	_____	_____	_____	Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height.
4. _____	_____	_____	_____	Woody vine – All woody vines, regardless of height.
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
_____ = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				Hydrophytic Vegetation Present? Yes _____ No _____

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

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Chesterfield County Airport City/County: Chesterfield County Sampling Date: 10/10/2012 4:11:52
 Applicant/Owner: Chesterfield County Airport State: VA Sampling Point: 30
 Investigator(s): Matt Neely Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): CC
 Slope (%): 3 - 7% Lat: 37°25.09042' N Long: 077°32.27015' W Datum: NAD 83
 Soil Map Unit Name: Spotsylvania fine sandy loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks:	

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> ___ Surface Water (A1) ___ True Aquatic Plants (B14) ___ High Water Table (A2) ___ Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1) ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2) ___ Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Drift Deposits (B3) ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4) ___ Other (Explain in Remarks) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) ___ Aquatic Fauna (B13)	<p><u>Secondary Indicators (minimum of two required)</u></p> ___ Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> 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) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<p>Field Observations:</p> Surface Water Present? Yes _____ No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>12.00</u> Saturation Present? Yes <input checked="" type="checkbox"/> No _____ Depth (inches): <u>8.00</u> (includes capillary fringe)	<p>Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____</p>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 8	10YR 4/1	100					FSL	
8 - 14	10YR 5/1	90	10YR 6/8	8.00	C	M	SCL	
			10YR 5/8	2.00	C	PL		

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

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

Indicators for Problematic Hydric Soils³:

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

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont

Project/Site: Chesterfield County Airport City/County: Chesterfield County Sampling Date: 10/11/2012 9:21:35
 Applicant/Owner: Chesterfield County Airport State: VA Sampling Point: 32
 Investigator(s): Matt Neely Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): CC
 Slope (%): 3 - 7% Lat: 37°25.12249' N Long: 077°32.33638' W Datum: NAD 83
 Soil Map Unit Name: Spotsylvania fine sandy loam NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No _____ (If no, explain in Remarks.)
 Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes No _____
 Are Vegetation _____, Soil _____, or Hydrology _____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks:	

HYDROLOGY

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

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

Sampling Point: 32

	Absolute % Cover	Dominant Species?	Indicator Status															
Tree Stratum (Plot size: <u>30</u>)																		
1. <u>Acer rubrum</u>	<u>40</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>7</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)														
2. <u>Nyssa sylvatica</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>															
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
	<u>55</u>	= Total Cover																
Sapling Stratum (Plot size: <u>30</u>)																		
1. <u>Magnolia virginiana</u>	<u>10</u>	<u>Yes</u>	<u>FACW</u>	Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%;">Total % Cover of:</td> <td style="width:50%;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>10</u></td> <td>x 2 = <u>20</u></td> </tr> <tr> <td>FAC species <u>115</u></td> <td>x 3 = <u>345</u></td> </tr> <tr> <td>FACU species <u>0</u></td> <td>x 4 = <u>0</u></td> </tr> <tr> <td>UPL species <u>0</u></td> <td>x 5 = <u>0</u></td> </tr> <tr> <td>Column Totals: <u>125</u> (A)</td> <td><u>365</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.92</u>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>10</u>	x 2 = <u>20</u>	FAC species <u>115</u>	x 3 = <u>345</u>	FACU species <u>0</u>	x 4 = <u>0</u>	UPL species <u>0</u>	x 5 = <u>0</u>	Column Totals: <u>125</u> (A)	<u>365</u> (B)
Total % Cover of:	Multiply by:																	
OBL species <u>0</u>	x 1 = <u>0</u>																	
FACW species <u>10</u>	x 2 = <u>20</u>																	
FAC species <u>115</u>	x 3 = <u>345</u>																	
FACU species <u>0</u>	x 4 = <u>0</u>																	
UPL species <u>0</u>	x 5 = <u>0</u>																	
Column Totals: <u>125</u> (A)	<u>365</u> (B)																	
2. <u>Pinus taeda</u>	<u>10</u>	<u>Yes</u>	<u>FAC</u>															
3. <u>Liquidambar styraciflua</u>	<u>5</u>	<u>Yes</u>	<u>FAC</u>															
4. _____																		
5. _____																		
6. _____																		
7. _____																		
	<u>25</u>	= Total Cover																
Shrub Stratum (Plot size: <u>30</u>)																		
1. <u>Clethra alnifolia</u>	<u>30</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: ___ 1- Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 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)														
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
	<u>30</u>	= Total Cover																
Herb Stratum (Plot size: <u>30</u>)																		
1. _____				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size. Includes woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.														
2. _____																		
3. _____																		
4. _____																		
5. _____																		
6. _____																		
7. _____																		
8. _____																		
9. _____																		
10. _____																		
11. _____																		
12. _____																		
	<u>0</u>	= Total Cover																
Woody Vine Stratum (Plot size: <u>30</u>)																		
1. <u>Smilax rotundifolia</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____														
2. _____																		
3. _____																		
4. _____																		
5. _____																		
	<u>15</u>	= Total Cover																
Remarks: (Include photo numbers here or on a separate sheet.)																		

SOIL

Sampling Point: 32

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0 - 4	2.5Y 5/2	95	7.5YR 4/6	3.00	C	M	FSL	
			7.5YR 4/6	2.00	C	PL		
4 - 8	10YR 5/1	95	7.5YR 4/6	3.00	C	PL	L	
			7.5YR 4/6	2.00	C	M		
8 - 15	10YR 6/1	85	7.5YR 4/6	15.00	C	M	FSL	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

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

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

Indicators for Problematic Hydric Soils³:

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

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Chesterfield County Airport Wetland Delineation Northwest Survey Area

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
False Easting: 11 482 916 6667
False Northing: 3 280 833 3333
Central Meridian: -78.5000
Standard Parallel 1: 36.7667
Standard Parallel 2: 37.9667
Latitude Of Origin: 36.3333
Units: Foot US

Legend

- ⊗ Data points
- ▭ Survey Area Boundary
- Stream = approx. 2318.3 linear feet
- ▭ PFO = approx. 3.3 acres
- ▭ PEM = Approx 2.1 acres
- ▭ Pond = approx. .06 acres



Chesterfield County Airport Wetland Delineation Northwest Survey Area

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
False Easting: 11,482,916.6667
False Northing: 3,280,833.3333
Central Meridian: -78.5000
Standard Parallel 1: 36.7667
Standard Parallel 2: 37.9667
Latitude Of Origin: 36.3333
Units: Foot US

Legend

- ⊗ Data points
- ▭ Survey Area Boundary
- Stream = approx. 2318.3 linear feet
- ▭ PFO = approx. 3.3 acres
- ▭ PEM = Approx 2.1 acres
- ▭ Pond = approx. .06 acres



Appendix C
Site Maps

Chesterfield County Airport Stream Assessment Reaches (NW)

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
False Easting: 11,482,916.6667
False Northing: 3,280,833.3333
Central Meridian: -78.5000
Standard Parallel 1: 36.7667
Standard Parallel 2: 37.9667
Latitude Of Origin: 36.3333
Units: Foot US



S-1 R4

N 3677704.178 W11762612.83

Ephemeral/Intermittent Break

S-3 R4

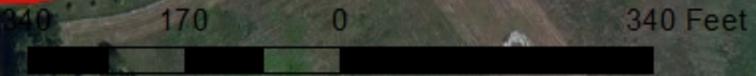
S-1 RE

S-2 R4

Legend

- S-1 RE/R4
- S-2 R4
- S-3 R4
- S-4 R4

S4-R4



Chesterfield County Airport Stream Assessment Reaches (NW)

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
False Easting: 11,482,916.6667
False Northing: 3,280,833.3333
Central Meridian: -78.5000
Standard Parallel 1: 36.7667
Standard Parallel 2: 37.9667
Latitude Of Origin: 36.3333
Units: Foot US



S-1 R4

N 3677704.178 W11762612.83

Ephemeral/Intermittent Break

S-1 RE

S-3 R4

S-2 R4

S4-R4

Legend

- S-1 RE/R4
- S-2 R4
- S-3 R4
- S-4 R4

340 170 0 340 Feet



221

Chesterfield County Airport Stream Assessment Reaches (NW) and Wetlands

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
False Easting: 11,482,916.6667
False Northing: 3,280,833.3333
Central Meridian: -78.5000
Standard Parallel 1: 36.7667
Standard Parallel 2: 37.9667
Latitude Of Origin: 36.3333
Units: Foot US



N 3677704.178 W 11762612.83

S-1 R4

DP 26 Ephemeral/Intermittent Break

S-1 RE

S-3 R4

S-2 R4

Legend

- S-1 RE/R4
- S-2 R4
- S-3 R4
- S-4 R4
- ⊗ Data points
- PFO
- PEM

S4-R4

340 170 0 340 Feet



Chesterfield County Airport Stream Assessment Reaches (NW) and Wetlands

Coordinate System: NAD 1983 StatePlane Virginia South FIPS 4502 Feet
Projection: Lambert Conformal Conic
Datum: North American 1983
False Easting: 11,482,916.6667
False Northing: 3,280,833.3333
Central Meridian: -78.5000
Standard Parallel 1: 36.7667
Standard Parallel 2: 37.9667
Latitude Of Origin: 36.3333
Units: Foot US

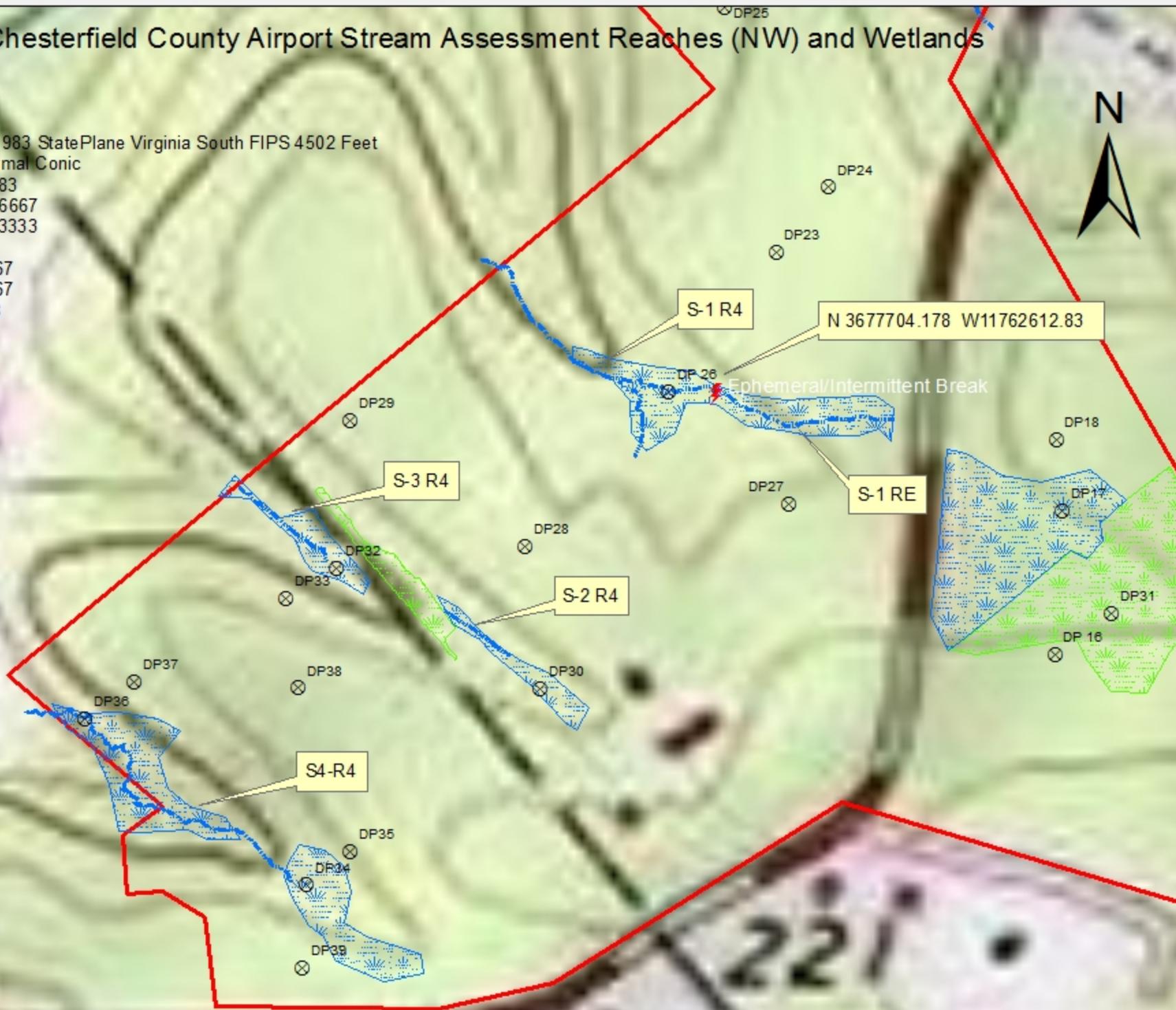


N 3677704.178 W11762612.83

DP 26 Ephemeral/Intermittent Break

Legend

-  S-1 RE/R4
-  S-2 R4
-  S-3 R4
-  S-4 R4
-  Data points
-  PFO
-  PEM



340 170 0 340 Feet





DISCLAIMER: CHESTERFIELD COUNTY ASSUMES NO LEGAL RESPONSIBILITY FOR THE INFORMATION CONTAINED ON THIS MAP. THIS MAP IS NOT TO BE USED FOR LAND CONVEYANCE. HORIZONTAL DATA IS BASED ON THE VA STATE PLANE COORDINATE SYSTEM, NAD83. TOPOGRAPHIC INFORMATION IS BASED ON 1989 PHOTOGRAMMETRY, NAV29.

Map of Chesterfield County



Created by
Chesterfield County
CitizenGIS



AERIAL DISCLAIMER: ALL DATA IS PROVIDED "AS IS". THE COMMONWEALTH OF VIRGINIA, THE VIRGINIA GEOGRAPHIC INFORMATION NETWORK AND THEIR RESPECTIVE OFFICERS, AGENTS AND EMPLOYEES JOINTLY AND SEVERALLY DISCLAIM ANY AND ALL REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, WRITTEN OR ORAL, IN FACT OR ARISING BY OPERATION OF LAW, INCLUDING ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, ACCURACY, CURRENCY, COMMERCIAL VALUE, OR FREEDOM OF DATA FROM INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.



DISCLAIMER: CHESTERFIELD COUNTY ASSUMES NO LEGAL RESPONSIBILITY FOR THE INFORMATION CONTAINED ON THIS MAP. THIS MAP IS NOT TO BE USED FOR LAND CONVEYANCE. HORIZONTAL DATA IS BASED ON THE VA STATE PLANE COORDINATE SYSTEM. VARIOUS TOPOGRAPHIC INFORMATION IS BASED ON 1989 PHOTOGRAMMETRY. NAD83.

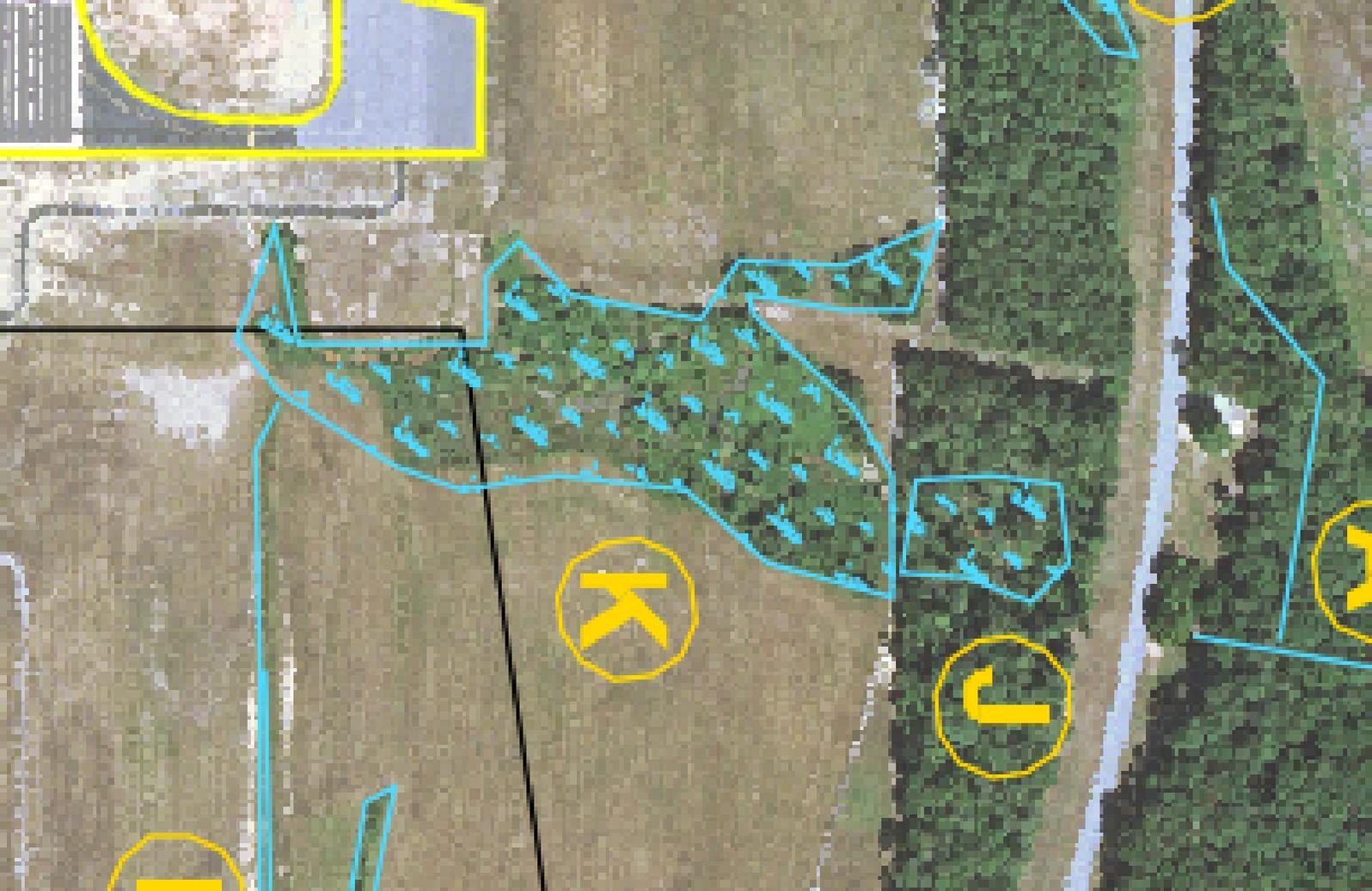
Map of Chesterfield County



Created by
Chesterfield County
 CitizenGIS



AERIAL DISCLAIMER: ALL DATA IS PROVIDED "AS IS" THE COMMONWEALTH OF VIRGINIA, THE VIRGINIA GEOGRAPHIC INFORMATION NETWORK AND THEIR RESPECTIVE OFFICERS, AGENTS AND EMPLOYEES JOINTLY AND SEVERALLY DISCLAIM ANY AND ALL REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, WRITTEN OR ORAL, IN FACT OR ARISING BY OPERATION OF LAW, INCLUDING ANY WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, ACCURACY, CURRENTNESS, COMMERCIAL VALUE OR PERFORMANCE OF DATA FROM INFRINGEMENT OF ANY THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.



Appendix D
Soil Maps

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Units

Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot
-  Spoil Area
-  Stony Spot

 Very Stony Spot

 Wet Spot

 Other

Special Line Features

-  Gully
-  Short Steep Slope
-  Other

Political Features

 Cities

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

MAP INFORMATION

Map Scale: 1:9,670 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:15,840.

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

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: UTM Zone 18N NAD83

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

Soil Survey Area: Chesterfield County, Virginia
 Survey Area Data: Version 8, Feb 17, 2010

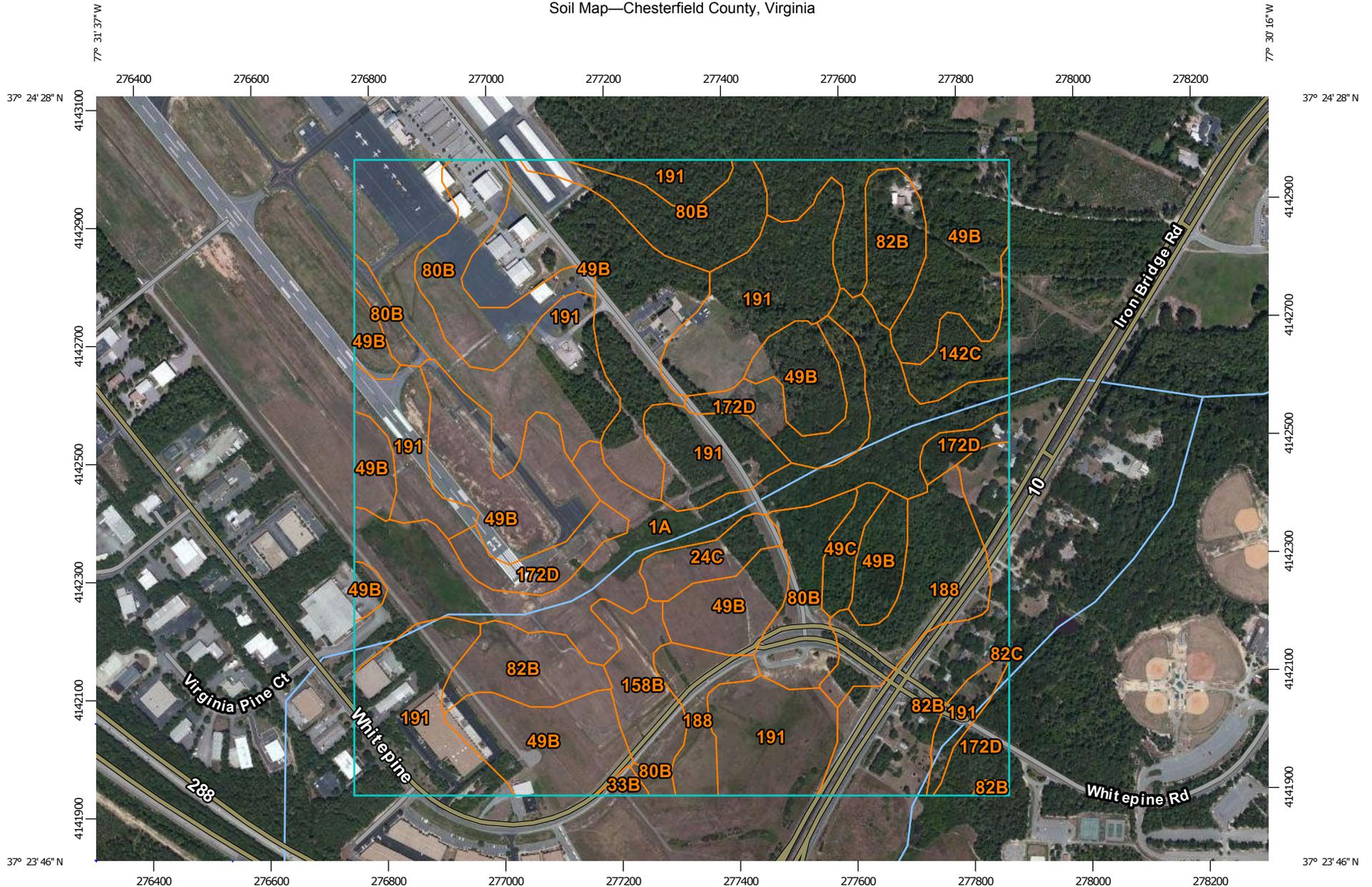
Date(s) aerial images were photographed: 6/25/2003

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

Map Unit Legend

Chesterfield County, Virginia (VA041)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1A	Fluvaquents	33.4	7.2%
6B	Worsham fine sandy loam, 0 to 4 percent slopes	7.1	1.5%
17B	Gritney fine sandy loam, 2 to 6 percent slopes	0.0	0.0%
17C	Gritney fine sandy loam, 6 to 12 percent slopes	0.6	0.1%
24C	Spotsylvania fine sandy loam, 6 to 12 percent slopes	72.8	15.6%
42B	Appling sandy loam, 2 to 6 percent slopes	6.3	1.4%
42C	Appling sandy loam, 6 to 12 percent slopes	12.8	2.7%
42D	Appling sandy loam, 12 to 20 percent slopes	19.9	4.3%
49B	Bourne fine sandy loam, 2 to 6 percent slopes	76.5	16.4%
70B	Norfolk fine sandy loam, 0 to 6 percent slopes	10.0	2.1%
80B	Colfax fine sandy loam, variant, 0 to 4 percent slopes	26.4	5.7%
82B	Kempsville-Bourne complex, 2 to 6 percent slopes	94.1	20.2%
112B	Orangeburg-Faceville sandy loams, 2 to 6 percent slopes	16.2	3.5%
112C	Orangeburg-Faceville sandy loams, 6 to 12 percent slopes	6.4	1.4%
157B	Faceville-Gritney fine sandy loams, 2 to 6 percent slopes	28.3	6.1%
158B	Tetotum loam, clayey substratum, 2 to 6 percent slopes	10.5	2.3%
172D	Ochrepts and Udults, sloping	11.8	2.5%
188	Dunbar fine sandy loam, 0 to 4 percent slopes	10.3	2.2%
191	Aquults	16.4	3.5%
W	Water	5.3	1.1%
Totals for Area of Interest		465.2	100.0%

Soil Map—Chesterfield County, Virginia



Map Scale: 1:9,130 if printed on A landscape (11" x 8.5") sheet.

0 100 200 400 600 Meters

0 400 800 1600 2400 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge ticks: UTM Zone 18N WGS84



MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features

-  Blowout
-  Borrow Pit
-  Clay Spot
-  Closed Depression
-  Gravel Pit
-  Gravelly Spot
-  Landfill
-  Lava Flow
-  Marsh or swamp
-  Mine or Quarry
-  Miscellaneous Water
-  Perennial Water
-  Rock Outcrop
-  Saline Spot
-  Sandy Spot
-  Severely Eroded Spot
-  Sinkhole
-  Slide or Slip
-  Sodic Spot

-  Spoil Area
-  Stony Spot
-  Very Stony Spot
-  Wet Spot
-  Other
-  Special Line Features

Water Features

 Streams and Canals

Transportation

-  Rails
-  Interstate Highways
-  US Routes
-  Major Roads
-  Local Roads

Background

 Aerial Photography

MAP INFORMATION

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

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

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

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

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

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

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

Soil Survey Area: Chesterfield County, Virginia
 Survey Area Data: Version 8, Feb 17, 2010

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

Date(s) aerial images were photographed: Jul 4, 2010—Nov 8, 2010

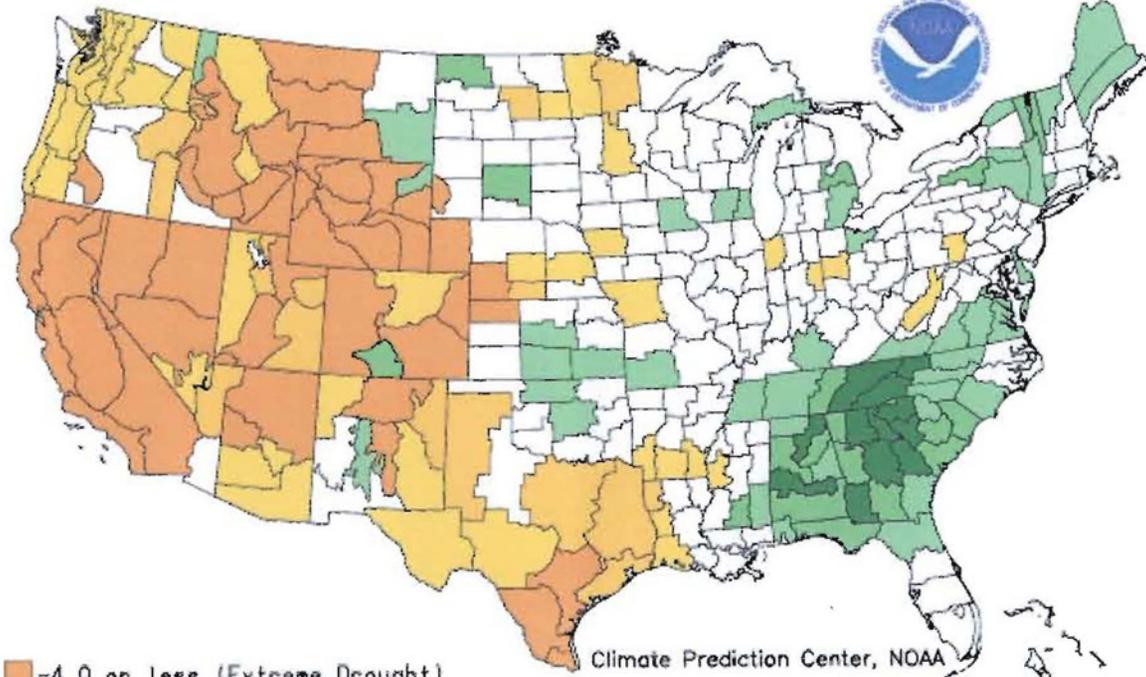
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Chesterfield County, Virginia (VA041)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1A	Fluvaquents	32.4	10.9%
24C	Spotsylvania fine sandy loam, 6 to 12 percent percent slopes	4.1	1.4%
33B	Coxville loam, 2 to 6 percent slopes	0.6	0.2%
49B	Bourne fine sandy loam, 2 to 6 percent slopes	82.4	27.7%
49C	Bourne fine sandy loam, 6 to 12 percent slopes	2.7	0.9%
80B	Colfax fine sandy loam, variant, 0 to 4 percent slopes	28.3	9.5%
82B	Kempsville-Bourne complex, 2 to 6 percent slopes	28.7	9.6%
82C	Kempsville-Bourne complex, 6 to 12 percent slopes	0.0	0.0%
142C	Appling-Wedowee fine sandy loams, 6 to 12 percent slopes	4.3	1.5%
158B	Tetotum loam, clayey substratum, 2 to 6 percent slopes	6.6	2.2%
172D	Ochrepts and Udults, sloping	16.2	5.4%
188	Dunbar fine sandy loam, 0 to 4 percent slopes	16.8	5.6%
191	Aquults	74.8	25.1%
Totals for Area of Interest		298.0	100.0%

Appendix E
Climate Data

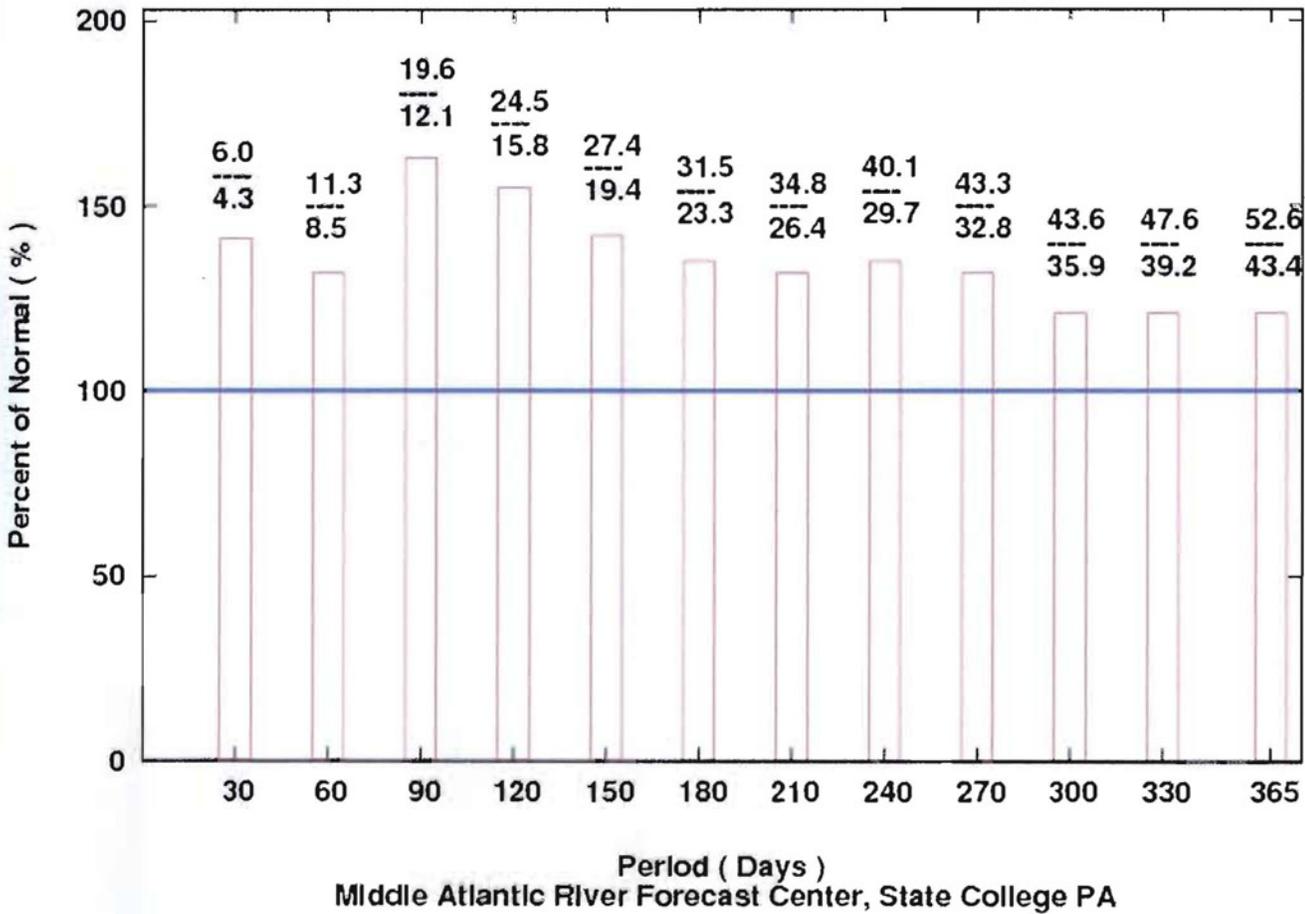
Drought Severity Index by Division
Weekly Value for Period Ending AUG 24, 2013
Long Term Palmer



- Climate Prediction Center, NOAA
- | | |
|-----------------------------------|--------------------------------------|
| ■ -4.0 or less (Extreme Drought) | ■ +2.0 to +2.9 (Unusual Moist Spell) |
| ■ -3.0 to -3.9 (Severe Drought) | ■ +3.0 to +3.9 (Very Moist Spell) |
| ■ -2.0 to -2.9 (Moderate Drought) | ■ +4.0 and above (Extremely Moist) |
| □ -1.9 to +1.9 (Near Normal) | |

Percent of Normal Barchart for Chesterfield County, VA

Percent of Normal for Chesterfield County, VA ----- Ending August 26, 2013



Tabular data for barchart ... Chesterfield County, VA

Starting Date	Ending Date	# of Days	Actual Pcpn	Normal Pcpn	Surplus / Deficit	% of Normal
07/28/13	08/26/13	30	6.0	4.3	1.8	141
06/28/13	08/26/13	60	11.3	8.5	2.8	132
05/29/13	08/26/13	90	19.6	12.1	7.6	163
04/29/13	08/26/13	120	24.5	15.8	8.7	155
03/30/13	08/26/13	150	27.4	19.4	8.0	142
02/28/13	08/26/13	180	31.5	23.3	8.2	135
01/29/13	08/26/13	210	34.8	26.4	8.4	132
12/30/12	08/26/13	240	40.1	29.7	10.4	135
11/30/12	08/26/13	270	43.3	32.8	10.5	132
10/31/12	08/26/13	300	43.6	35.9	7.7	121

10/01/12	08/26/13	330	47.6	39.2	8.4	121
08/27/12	08/26/13	365	52.6	43.4	9.2	121

U.S. Department of Commerce
 National Oceanic & Atmospheric Administration
 National Environmental Satellite, Data, and Information Service

Record of Climatological Observations

These data are quality controlled and may not be identical to the original observations.

National Climatic Data Center
 Federal Building
 151 Patton Avenue
 Asheville, North Carolina 28801
 www.ncdc.noaa.gov

Station: **WINTERPOCK 4 W, VA US**

GHCND:USC00449213

Observation Time Temperature: Unknown Observation Time Precipitation: 0700

Elev: 299 ft. Lat: 37.325° N Lon: 77.650° W

P r e l i m i n a r y	Y e a r	M o n t h	D a y	Temperature (°F)		a t O b s e r v a t i o n	Precipitation(see **)				Evaporation		Soil Temperature (°F)						
				24 hrs. ending at observation time			24 Hour Amounts ending at observation time				At Obs Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in depth			8 in depth		
				Max.	Min.		Rain, melted snow, etc. (in)	F l a g	Snow, ice pellets, hail (in)	F l a g	Snow, ice pellets, hail, ice on ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.
	2013	8	1																
	2013	8	2																
	2013	8	3																
	2013	8	4																
	2013	8	5																
	2013	8	6																
	2013	8	7																
	2013	8	8																
	2013	8	9																
	2013	8	10																
	2013	8	11																
	2013	8	12																
	2013	8	13																
	2013	8	14																
	2013	8	15																
	2013	8	16																
	2013	8	17																
	2013	8	18				0.31		0.0										
	2013	8	19																
	2013	8	20																
	2013	8	21																
	2013	8	22																
	2013	8	23																
	2013	8	24																
	2013	8	25																
	2013	8	26																
	2013	8	27																
	2013	8	28																
	2013	8	29																
	2013	8	30																
	2013	8	31																
			Summary				0.31		0.0										

The "*" flags in Preliminary indicate the data have not completed processing and quality control and may not be identical to the original observation. Empty, or blank, cells indicate that a data observation was not reported.

*Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown

"T" values in the Precipitation category above indicate a TRACE value was recorded.

"A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.

Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

U.S. Department of Commerce
 National Oceanic & Atmospheric Administration
 National Environmental Satellite, Data, and Information Service

Record of Climatological Observations
 These data are quality controlled and may not be
 identical to the original observations.

National Climatic Data Center
 Federal Building
 151 Patton Avenue
 Asheville, North Carolina 28801
 www.ncdc.noaa.gov

Station: **CHESTER 6.0 ESE, VA US**

GHCND:US1VACS0015

Observation Time Temperature: Unknown Observation Time Precipitation: Unknown

Elev: 85 ft. Lat: 37.324° N Lon: 77.333° W

P r e l i m i n a r y	Y e a r	M o n t h	D a y	Temperature (°F)		Precipitation(see **)					Evaporation		Soil Temperature (°F)							
				24 hrs. ending at observation time		24 Hour Amounts ending at observation time				At Obs Time	24 Hour Wind Movement (mi)	Amount of Evap. (in)	4 in depth			8 in depth				
				Max.	Min.	Rain, melted snow, etc. (in)	F l a g	Snow, ice pellets, hail (in)	F l a g	Snow, ice pellets, hail, ice on ground (in)			Ground Cover (see *)	Max.	Min.	Ground Cover (see *)	Max.	Min.		
	2013	8	1			2.22														
	2013	8	2			0.28														
	2013	8	3			0.00		0.0												
	2013	8	4			0.00		0.0												
	2013	8	5			0.00		0.0												
	2013	8	6			0.19														
	2013	8	7			0.54														
	2013	8	8			0.00		0.0												
	2013	8	9			0.00		0.0												
	2013	8	10			0.00		0.0												
	2013	8	11			0.08														
	2013	8	12			0.00		0.0												
	2013	8	13			T														
	2013	8	14			0.00		0.0												
	2013	8	15			0.00		0.0												
	2013	8	16			0.00		0.0												
	2013	8	17			0.00		0.0												
	2013	8	18			0.34														
	2013	8	19			0.20														
	2013	8	20			0.10														
	2013	8	21			0.00		0.0												
	2013	8	22			0.62														
	2013	8	23			0.00		0.0												
	2013	8	24			0.98														
	2013	8	25			0.00		0.0												
	2013	8	26																	
	2013	8	27																	
	2013	8	28																	
	2013	8	29																	
	2013	8	30																	
	2013	8	31																	
			Summary			5.55		0.0												

The "" flags in Preliminary indicate the data have not completed processing and quality control and may not be identical to the original observation
 Empty, or blank, cells indicate that a data observation was not reported.
 *Ground Cover: 1=Grass; 2=Fallow; 3=Bare Ground; 4=Brome grass; 5=Sod; 6=Straw mulch; 7=Grass muck; 8=Bare muck; 0=Unknown
 **T" values in the Precipitation category above indicate a TRACE value was recorded.
 "A" values in the Precipitation Flag or the Snow Flag column indicate a multiday total, accumulated since last measurement, is being used.
 Data value inconsistency may be present due to rounding calculations during the conversion process from SI metric units to standard imperial units.

Appendix F.
North Carolina Division of Water Quality-Stream Identification Forms
And Photos

North Carolina Division of Water Quality – Stream Identification Form; Version 3.1

Date: 5/1/2006	Project: 000000	Latitude: 35° 45' 00" N
Evaluator: A. U. H. Y. K. B. Y. M.	Site: G1926 Ya cbh# c [V]	Longitude: 78° 45' 00" W
Total Points: 15.75 Stream is at least intermittent if ≥ 19 or perennial if ≥ 30	County: 71 YghfzYXzJ5	Other I G'GHUY'D'UbYzJ5 'Gci h e.g. Quad Name:

A. Geomorphology (Subtotal = <u>4</u>)	Absent	Weak	Moderate	Strong
1 ^a . Continuous bed and bank	0	1	2	3
2. Sinuosity	0	1	2	3
3. In-channel structure: riffle-pool sequence	0	1	2	3
4. Soil texture or stream substrate sorting	0	1	2	3
5. Active/relic floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	1	2	3
9 ^a Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. Second or greater order channel on existing USGS or NRCS map or other documented evidence.	No = 0		Yes = 3	

^a Man-made ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = <u>4.5</u>)	Absent	Weak	Moderate	Strong
14. Groundwater flow/discharge	0	1	2	3
15. Water in channel and > 48 hrs since rain, <u>or</u> Water in channel -- dry or growing season	0	1	2	3
16. Leaf litter	1.5	1	0.5	0
17. Sediment on plants or debris	0	0.5	1	1.5
18. Organic debris lines or piles (Wrack lines)	0	0.5	1	1.5
19. Hydric soils (redoximorphic features) present?	No = 0		Yes = 1.5	

C. Biology (Subtotal = <u>7.25</u>)	Absent	Weak	Moderate	Strong
20 ^b . Fibrous roots in channel	3	2	1	0
21 ^b . Rooted plants in channel	3	2	1	0
22. Crayfish	0	0.5	1	1.5
23. Bivalves	0	1	2	3
24. Fish	0	0.5	1	1.5
25. Amphibians	0	0.5	1	1.5
26. Macroinvertebrates (note diversity and abundance)	0	0.5	1	1.5
27. Filamentous algae; periphyton	0	1	2	3
28. Iron oxidizing bacteria/fungus.	0	0.5	1	1.5
29 ^b . Wetland plants in streambed	FAC = 0.5; FACW = 0.75; OBL = 1.5 SAV = 2.0; Other = 0			

^b Items 20 and 21 focus on the presence of upland plants, Item 29 focuses on the presence of aquatic or wetland plants.

Notes: (use back side of this form for additional notes.)

Sketch:

Ephemeral stream furnished by stormwater flowing out of pipe adjacent to Belmont Road.

Date & Time: Mon Aug 26 10:28:47 EDT 2013

Position: +037.4193° / -077.5359°

Altitude: 315ft

Azimuth/Bearing: 017° N17E 0302mils (True)

Elevation Angle: -18.6°

Horizon Angle: +00.1°

Zoom: 1X



Date & Time: Mon Aug 26 10:41:46 EDT 2013

Position: +037.4193° / -077.5361°

Altitude: 230ft

Azimuth/Bearing: 065° N65E 1156mils (True)

Elevation Angle: -26.1°

Horizon Angle: +02.0°

Zoom: 1X



S-1 RE

Date & Time: Mon Aug 26 11:49:53 EDT 2013

Position: +037.4192° / -077.5365°

Altitude: 249ft

Azimuth/Bearing: 090° S90E 1600mils (True)

Elevation Angle: -11.5°

Horizon Angle: +00.6°

Zoom: 1X



Date & Time: Mon Aug 26 11:43:45 EDT 2013

Position: +037.4194° / -077.5369°

Altitude: 253ft

Azimuth/Bearing: 149° S31E 2649mils (True)

Elevation Angle: -24.2°

Horizon Angle: +01.9°

Zoom: 1X



S-1 R4 head cut, change from RE to R4

North Carolina Division of Water Quality – Stream Identification Form; Version 3.1

Date: 26 August 2013	Project: 0040CE	Latitude: N 3677704.178
Evaluator: Matthew Neely	Site: S-1 R4, Belmont/Cogbill	Longitude: W11762612.83
Total Points: 27.75 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30</i>	County: Chesterfield, VA	Other US State Plane , VA South e.g. Quad Name:

A. Geomorphology (Subtotal = 13)	Absent	Weak	Moderate	Strong
1 ^a . Continuous bed and bank	0	1	2	3
2. Sinuosity	0	1	2	3
3. In-channel structure: riffle-pool sequence	0	1	2	3
4. Soil texture or stream substrate sorting	0	1	2	3
5. Active/relic floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	1	2	3
9 ^a Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. Second or greater order channel on <u>existing</u> USGS or NRCS map or other documented evidence.	No = 0		Yes = 3	

^a Man-made ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 5.5)	Absent	Weak	Moderate	Strong
14. Groundwater flow/discharge	0	1	2	3
15. Water in channel and > 48 hrs since rain, <u>or</u> Water in channel -- dry or growing season	0	1	2	3
16. Leaf litter	1.5	1	0.5	0
17. Sediment on plants or debris	0	0.5	1	1.5
18. Organic debris lines or piles (Wrack lines)	0	0.5	1	1.5
19. Hydric soils (redoximorphic features) present?	No = 0		Yes = 1.5	

C. Biology (Subtotal = 9.25)	Absent	Weak	Moderate	Strong
20 ^b . Fibrous roots in channel	3	2	1	0
21 ^b . Rooted plants in channel	3	2	1	0
22. Crayfish	0	0.5	1	1.5
23. Bivalves	0	1	2	3
24. Fish	0	0.5	1	1.5
25. Amphibians	0	0.5	1	1.5
26. Macroinvertebrates (note diversity and abundance)	0	0.5	1	1.5
27. Filamentous algae; periphyton	0	1	2	3
28. Iron oxidizing bacteria/fungus.	0	0.5	1	1.5
29 ^b . Wetland plants in streambed	FAC = 0.5; FACW = 0.75; OBL = 1.5 SAV = 2.0; Other = 0			

^b Items 20 and 21 focus on the presence of upland plants, Item 29 focuses on the presence of aquatic or wetland plants.

Notes: (use back side of this form for additional notes.)

Sketch:

Low sinuosity intermittent stream with gradually increasing incision down the topographic gradient. Amphibians occupy small pooling areas in the stream system.

Intermittent with a score of 27.75

Date & Time: Mon Aug 26 11:43:35 EDT 2013

Position: +037.4194° / -077.5369°

Altitude: 253ft

Azimuth/Bearing: 266° S86W 4729mils (True)

Elevation Angle: -28.0°

Horizon Angle: +02.1°

Zoom: 1X



Date & Time: Mon Aug 26 11:38:57 EDT 2013

Position: +037.4195° / -077.5371°

Altitude: 262ft

Azimuth/Bearing: 109° S71E 1938mils (True)

Elevation Angle: -21.5°

Horizon Angle: +01.1°

Zoom: 1X



S-1 M4

Date & Time: Mon Aug 26 11:39:59 EDT 2013

Position: +037.4194° / -077.5370°

Altitude: 253ft

Azimuth/Bearing: 103° S77E 1831mils (True)

Elevation Angle: -15.0°

Horizon Angle: +00.9°

Zoom: 1X



North Carolina Division of Water Quality – Stream Identification Form; Version 3.1

Date: 26 August 2013	Project: 00400E	Latitude: N 3677326.187
Evaluator: Matthew Neely	Site: S-2 R4, Belmont/Cogbill	Longitude: W11762235.062
Total Points: 22.25 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30</i>	County: Chesterfield, VA	Other US State Plane , VA South e.g. Quad Name:

A. Geomorphology (Subtotal = 5.5)	Absent	Weak	Moderate	Strong
1 ^a . Continuous bed and bank	0	1	2	3
2. Sinuosity	0	1	2	3
3. In-channel structure: riffle-pool sequence	0	1	2	3
4. Soil texture or stream substrate sorting	0	1	2	3
5. Active/relic floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	1	2	3
9 ^a Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. Second or greater order channel on existing USGS or NRCS map or other documented evidence.	No = 0		Yes = 3	

^a Man-made ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 7.5)	Absent	Weak	Moderate	Strong
14. Groundwater flow/discharge	0	1	2	3
15. Water in channel and > 48 hrs since rain, <u>or</u> Water in channel -- dry or growing season	0	1	2	3
16. Leaf litter	1.5	1	0.5	0
17. Sediment on plants or debris	0	0.5	1	1.5
18. Organic debris lines or piles (Wrack lines)	0	0.5	1	1.5
19. Hydric soils (redoximorphic features) present?	No = 0		Yes = 1.5	

C. Biology (Subtotal = 9.25)	Absent	Weak	Moderate	Strong
20 ^b . Fibrous roots in channel	3	2	1	0
21 ^b . Rooted plants in channel	3	2	1	0
22. Crayfish	0	0.5	1	1.5
23. Bivalves	0	1	2	3
24. Fish	0	0.5	1	1.5
25. Amphibians	0	0.5	1	1.5
26. Macroinvertebrates (note diversity and abundance)	0	0.5	1	1.5
27. Filamentous algae; periphyton	0	1	2	3
28. Iron oxidizing bacteria/fungus.	0	0.5	1	1.5
29 ^b . Wetland plants in streambed	FAC = 0.5; FACW = 0.75; OBL = 1.5 SAV = 2.0; Other = 0			

^b Items 20 and 21 focus on the presence of upland plants, Item 29 focuses on the presence of aquatic or wetland plants.

Notes: (use back side of this form for additional notes.)

Sketch:

Short intermittent stream fed by adjacent sheet-flow and flow off the nearby parking lot and groundwater discharge.

Intermittent score of 22.25

Date & Time: Mon Aug 26 12:04:47 EDT 2013

Position: +037.4183° / -077.5380°

Altitude: 266ft

Azimuth/Bearing: 295° N65W 5244mils (True)

Elevation Angle: -21.1°

Horizon Angle: +01.1°

Zoom: 1X



Date & Time: Mon Aug 26 12:06:32 EDT 2013
Position: +037.4184° / -077.5382°
Altitude: 279ft
Azimuth/Bearing: 102° S78E 1813mils (True)
Elevation Angle: -25.6°
Horizon Angle: -15.6°
Zoom: 1X



S-2 R4 top looking down

North Carolina Division of Water Quality – Stream Identification Form; Version 3.1

Date: 26 August 2013	Project: 00400E	Latitude: N 3677482.023
Evaluator: Matthew Neely	Site: S-3 R4, Belmont/Cogbill	Longitude: W11761947.365
Total Points: 21.25 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30</i>	County: Chesterfield, VA	Other US State Plane , VA South e.g. Quad Name:

A. Geomorphology (Subtotal = 6.5)	Absent	Weak	Moderate	Strong
1 ^a . Continuous bed and bank	0	1	2	3
2. Sinuosity	0	1	2	3
3. In-channel structure: riffle-pool sequence	0	1	2	3
4. Soil texture or stream substrate sorting	0	1	2	3
5. Active/relic floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	1	2	3
9 ^a Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. Second or greater order channel on <u>existing</u> USGS or NRCS map or other documented evidence.	No = 0		Yes = 3	

^a Man-made ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 6.5)	Absent	Weak	Moderate	Strong
14. Groundwater flow/discharge	0	1	2	3
15. Water in channel and > 48 hrs since rain, <u>or</u> Water in channel -- dry or growing season	0	1	2	3
16. Leaf litter	1.5	1	0.5	0
17. Sediment on plants or debris	0	0.5	1	1.5
18. Organic debris lines or piles (Wrack lines)	0	0.5	1	1.5
19. Hydric soils (redoximorphic features) present?	No = 0		Yes = 1.5	

C. Biology (Subtotal = 8.25)	Absent	Weak	Moderate	Strong
20 ^b . Fibrous roots in channel	3	2	1	0
21 ^b . Rooted plants in channel	3	2	1	0
22. Crayfish	0	0.5	1	1.5
23. Bivalves	0	1	2	3
24. Fish	0	0.5	1	1.5
25. Amphibians	0	0.5	1	1.5
26. Macroinvertebrates (note diversity and abundance)	0	0.5	1	1.5
27. Filamentous algae; periphyton	0	1	2	3
28. Iron oxidizing bacteria/fungus.	0	0.5	1	1.5
29 ^b . Wetland plants in streambed	FAC = 0.5; FACW = 0.75; OBL = 1.5; SAV = 2.0; Other = 0			

^b Items 20 and 21 focus on the presence of upland plants, Item 29 focuses on the presence of aquatic or wetland plants.

Notes: (use back side of this form for additional notes.)

Sketch:

Straight intermittent stream, mostly dry, nice topography on adjacent sides feeding the channel.

Intermittent with score of 21.25

Date & Time: Mon Aug 26 12:25:15 EDT 2013

Position: +037.4189° / -077.5393°

Altitude: 240ft

Azimuth/Bearing: 126° S54E 2240mils (True)

Elevation Angle: -09.7°

Horizon Angle: +00.8°

Zoom: 1X



Date & Time: Mon Aug 26 12:24:52 EDT 2013

Position: +037.4189° / -077.5395°

Altitude: 154ft

Azimuth/Bearing: 120° S60E 2133mils (True)

Elevation Angle: -24.3°

Horizon Angle: +00.2°

Zoom: 1X



North Carolina Division of Water Quality – Stream Identification Form; Version 3.1

Date: 26 August 2013	Project: 0040CE	Latitude: N 3677043.285
Evaluator: Matthew Neely	Site: S-4 R4, Belmont/Cogbill	Longitude: W11761755.567
Total Points: 27.25 <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30</i>	County: Chesterfield, VA	Other US State Plane , VA South e.g. Quad Name:

A. Geomorphology (Subtotal = <u>9</u>)	Absent	Weak	Moderate	Strong
1 ^a . Continuous bed and bank	0	1	2	3
2. Sinuosity	0	1	2	3
3. In-channel structure: riffle-pool sequence	0	1	2	3
4. Soil texture or stream substrate sorting	0	1	2	3
5. Active/relic floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Braided channel	0	1	2	3
8. Recent alluvial deposits	0	1	2	3
9 ^a Natural levees	0	1	2	3
10. Headcuts	0	1	2	3
11. Grade controls	0	0.5	1	1.5
12. Natural valley or drainageway	0	0.5	1	1.5
13. Second or greater order channel on <u>existing</u> USGS or NRCS map or other documented evidence.	No = 0		Yes = 3	

^a Man-made ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = <u>8.5</u>)	Absent	Weak	Moderate	Strong
14. Groundwater flow/discharge	0	1	2	3
15. Water in channel and > 48 hrs since rain, <u>or</u> Water in channel -- dry or growing season	0	1	2	3
16. Leaf litter	1.5	1	0.5	0
17. Sediment on plants or debris	0	0.5	1	1.5
18. Organic debris lines or piles (Wrack lines)	0	0.5	1	1.5
19. Hydric soils (redoximorphic features) present?	No = 0		Yes = 1.5	

C. Biology (Subtotal = <u>9.75</u>)	Absent	Weak	Moderate	Strong
20 ^b . Fibrous roots in channel	3	2	1	0
21 ^b . Rooted plants in channel	3	2	1	0
22. Crayfish	0	0.5	1	1.5
23. Bivalves	0	1	2	3
24. Fish	0	0.5	1	1.5
25. Amphibians	0	0.5	1	1.5
26. Macroinvertebrates (note diversity and abundance)	0	0.5	1	1.5
27. Filamentous algae; periphyton	0	1	2	3
28. Iron oxidizing bacteria/fungus.	0	0.5	1	1.5
29 ^b . Wetland plants in streambed	FAC = 0.5; FACW = 0.75; OBL = 1.5; SAV = 2.0; Other = 0			

^b Items 20 and 21 focus on the presence of upland plants, Item 29 focuses on the presence of aquatic or wetland plants.

Notes: (use back side of this form for additional notes.)

Sketch:

This stream exhibits a bit more sinuosity than others in the survey area. Waters flowing through the channel eventually flow into a system of ponds.

Intermittent stream with a score of 27.25

Date & Time: Mon Aug 26 13:19:34 EDT 2013

Position: +037.4174° / -077.5394°

Altitude: 151ft

Azimuth: -095° -1689mils

Elevation Angle: +57.4°

Horizon Angle: +59.3°

Zoom: 1X



Date & Time: Mon Aug 26 13:17:49 EDT 2013

Position: +037.4176° / -077.5397°

Altitude: 174ft

Azimuth: -060° -1067mils

Elevation Angle: +10.8°

Horizon Angle: +71.9°

Zoom: 1X



S-4 R4

Date & Time: Mon Aug 26 13:16:12 EDT 2013

Position: +037.4177° / -077.5401°

Altitude: 236ft

Azimuth: +077° +1369mils

Elevation Angle: +45.6°

Horizon Angle: +62.1°

Zoom: 1X



S-4 R4

Date & Time: Mon Aug 26 13:12:19 EDT 2013

Position: +037.4177° / -077.5402°

Altitude: 226ft

Azimuth: -177° -3147mils

Elevation Angle: +44.6°

Horizon Angle: +61.8°

Zoom: 1X



Date & Time: Mon Aug 26 13:06:08 EDT 2013

Position: +037.4182° / -077.5406°

Altitude: 194ft

Azimuth/Bearing: 004° N04E 0071mils (True)

Elevation Angle: +11.8°

Horizon Angle: -31.3°

Zoom: 1X



S-4 R4 bottom before pond, looking up stream

Enclosure 5.

**Chesterfield County Department of Environmental Engineering
Confirmation of RPA Designations for Streams in
Perennial Stream Determination Study**



Chesterfield County, Virginia
Department of Environmental Engineering

9800 Government Center Parkway – P.O. Box 40– Chesterfield, VA 23832-0040
(804) 748-1035 phone – (804) 768-8629 fax – chesterfield.gov

SCOTT B. SMEDLEY
Director

September 19, 2013

Mr. Mathew Neely
Mill Creek Environmental Consultants, Ltd.
11400 Longtown Drive
Midlothian, VA 23112

RE: Perennial Flow and Resource Protection Area Designations
WQ Project ID#: 047/ Chesterfield County Airport
GPIN(s): 761-676-9185, 761-677-5343, 762-677-0200, 762-678-4600, & 768-671-3895

Dear Mr. Neely,

At your request, on **September 13, 2013**, Chesterfield County's Environmental Engineering-Water Quality (WQ) reviewed your perennial flow and resource protection area designation (RPA) application for the properties located between **7419-8401 Belmont Road**. Environmental Engineering-Water Quality has **confirmed** your perennial flow determination and resource protection area feature designations as portrayed on the enclosed map dated **09/18/13** and entitled "**Chesterfield Airport**." References used for the review include the "Perennial Stream Field Identification Protocol" and "Resource Protection Areas: Nontidal Wetlands Guidance" (Revised December 10, 2007), as approved by the Chesapeake Bay Local Assistance Board.

Only the perennial flow and resource protection areas have been designated by this study. The limits of the resource protection area boundaries will be evaluated during the county's plan review process. Until the county issues final plan approval and the wetlands are confirmed by the US Army Corp of Engineers, resource protection area limits should be considered preliminary.

Should your project require additional parcels to be assessed or if you have any other questions, please contact this office at (804) 748-1035.

Sincerely,

Laura E. Barry
Water Quality Analyst

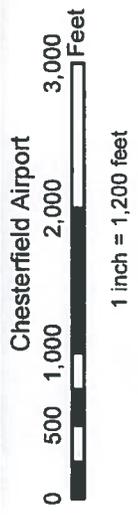
cc: L. Douglas Pritchard, Engineering Supervisor
file



Legend

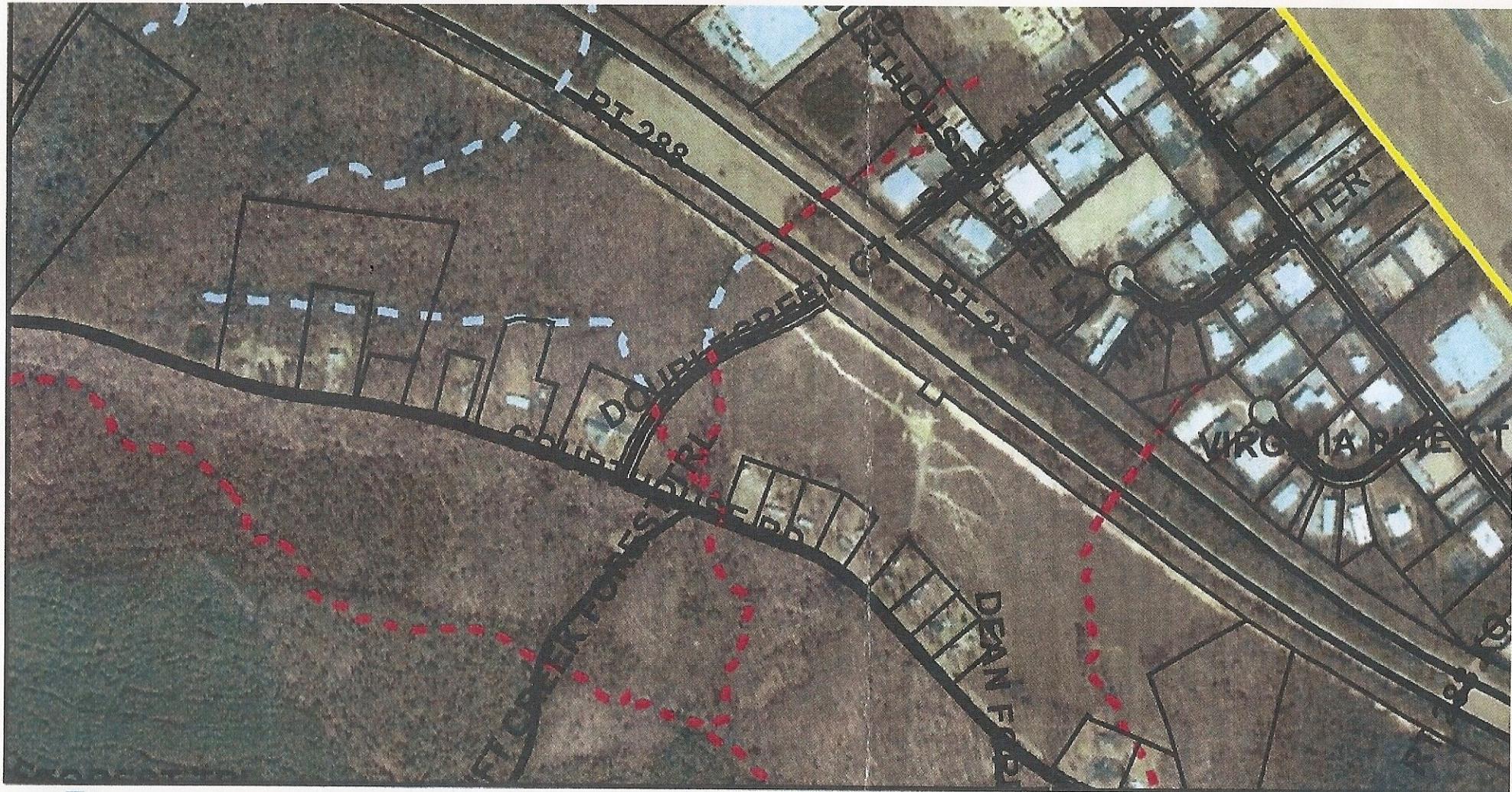
- RPA
- Intermittent Stream
- Perennial Stream
- - - Undetermined Stream
- 047 Study Area

Coordinate System:
 NAD 1983 StatePlane
 Virginia South FIPS 4502 Feet



9/18/13

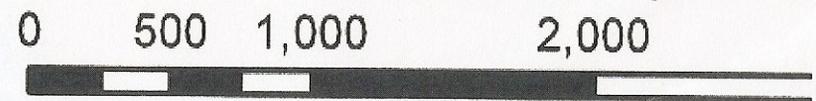




Coordinate System:
 NAD 1983 StatePlane
 Virginia South FIPS 4502 Feet

RPAD-047

Chesterfield Airport



1 inch = 1,200 feet