APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): March 26, 2018

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: NAO, Prince William Property, 2017-02171

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:Virginia County/parish/borough: Prince William City: Woodbridge
Center coordinates of site (lat/long in degree decimal format): Lat. 38.672769 ° **N**, Long. -77.338314° **W**.
Universal Transverse Mercator: 18N - 296,581m East - 4,283,051m North
Name of nearest waterbody: Headly Run
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Naebsco Creek
Name of watershed or Hydrologic Unit Code (HUC): Middle Potomac-Anacostia-Occoquan/ HUC 02070010

☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

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

☐ Office (Desk) Determination. Date:
☒ Field Determination. Date(s): January 9, 2018

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are no** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
      ☐ TNWs, including territorial seas
      ☐ Wetlands adjacent to TNWs
      ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
      ☐ Non-RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
      ☐ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
      ☐ Impoundments of jurisdictional waters
      ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
      Non-wetland waters: linear feet: width (ft) and/or acres.
      Wetlands: acres.

   c. **Limits (boundaries) of jurisdiction** based on: **Pick List**
      Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain: **A channel and adjacent wetland begin onsite and end abruptly at an adjacent parking area. No connecting**

[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

waters were observed. The areas were determined to be incidental to previous construction onsite, potentially from a drainage source from the existing house..

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: **Pick List**
Drainage area: **Pick List**
Average annual rainfall: inches
Average annual snowfall: inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☐ Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **Pick List** river miles from TNW.
Project waters are **Pick List** river miles from RPW.
Project waters are **Pick List** aerial (straight) miles from TNW.
Project waters are **Pick List** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW[5]: .
Tributary stream order, if known: .

[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.
[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☐ Natural
☐ Artificial (man-made). Explain: .
☐ Manipulated (man-altered). Explain: .

Tributary properties with respect to top of bank (estimate):
Average width: feet
Average depth: feet
Average side slopes: **Pick List.**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☐ Muck
☐ Bedrock	☐ Vegetation. Type/% cover:	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: .
Presence of run/riffle/pool complexes. Explain: .
Tributary geometry: **Pick List**
Tributary gradient (approximate average slope): %

(c) Flow:
Tributary provides for: **Pick List**
Estimate average number of flow events in review area/year: **Pick List**
Describe flow regime: .
Other information on duration and volume: .

Surface flow is: **Pick List.** Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .
☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☐ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☐ abrupt change in plant community
☐ other (list):	

☐ Discontinuous OHWM.[7] Explain: .

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: .
Identify specific pollutants, if known: .

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

(iv) Biological Characteristics. Channel supports (check all that apply):

- ☐ Riparian corridor. Characteristics (type, average width): .
- ☐ Wetland fringe. Characteristics: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:

Properties:

Wetland size: acres

Wetland type. Explain: .

Wetland quality. Explain: .

Project wetlands cross or serve as state boundaries. Explain: .

(b) General Flow Relationship with Non-TNW:

Flow is: **Pick List**. Explain: .

Surface flow is**: Pick List**

Characteristics: .

Subsurface flow: **Pick List**. Explain findings: .

- ☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

- ☐ Directly abutting
- ☐ Not directly abutting
  - ☐ Discrete wetland hydrologic connection. Explain: .
  - ☐ Ecological connection. Explain: .
  - ☐ Separated by berm/barrier. Explain: .

(d) Proximity (Relationship) to TNW

Project wetlands are **Pick List** river miles from TNW.

Project waters are **Pick List** aerial (straight) miles from TNW.

Flow is from: **Pick List.**

Estimate approximate location of wetland as within the **Pick List** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: .

Identify specific pollutants, if known: .

(iii) Biological Characteristics. Wetland supports (check all that apply):

- ☐ Riparian buffer. Characteristics (type, average width): .
- ☐ Vegetation type/percent cover. Explain: .
- ☐ Habitat for:
  - ☐ Federally Listed species. Explain findings: .
  - ☐ Fish/spawn areas. Explain findings: .
  - ☐ Other environmentally-sensitive species. Explain findings: .
  - ☐ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **Pick List**

Approximately ( ) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)

Summarize overall biological, chemical and physical functions being performed: .

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   - ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
☐ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: acres.

7. **Impoundments of jurisdictional waters.[9]**
As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.
☐ Demonstrate that impoundment was created from "waters of the U.S.," or
☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]
☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
☐ which are or could be used for industrial purposes by industries in interstate commerce.
☐ Interstate isolated waters. Explain: .
☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.
[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

Provide estimates for jurisdictional waters in the review area (check all that apply):
☐ Tributary waters: linear feet width (ft).
☐ Other non-wetland waters: acres.
Identify type(s) of waters: .
☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):
☒ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain:
Other: (explain, if not covered above): .

☐

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):
☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☐ Wetlands: acres.

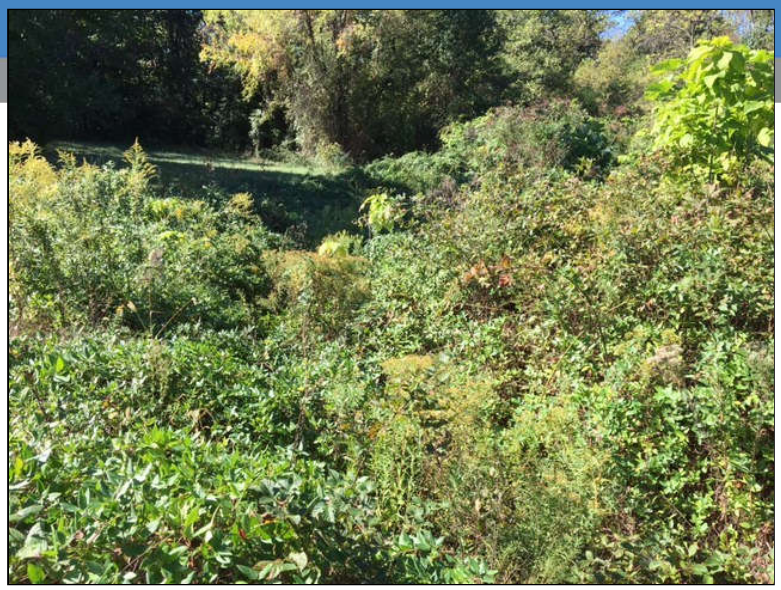
Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):
☒ Non-wetland waters (i.e., rivers, streams): **195** linear feet, **3** width (ft).
☐ Lakes/ponds: acres.
☐ Other non-wetland waters: acres. List type of aquatic resource: .
☒ Wetlands: 0.0042acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall 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: .
☒ 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: Figure II: USGS Topographic Map, not to scale; Occoquan Quad 2010.
☒ USDA Natural Resources Conservation Service Soil Survey. Citation: Figure III: USDA Soils Map, NRCS Soil Survey.
☒ National wetlands inventory map(s). Cite name: Figure IV: National Wetlands Inventory Map online.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps: Figure V: FEMA Floodplain Mapper.
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):Figure VII: Color Aerial Image.
or ☒ Other (Name & Date): Photographic Log taken in Nov. 2017.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: A stream and adjacent wetland begin onsite and end abruptly at an adjacent parking area. No connecting water bodies were found. The areas were determined to be incidental to previous construction onsite, potentially from a drainage source from the existing house..

PRINCE WILLIAM PARKWAY PROPERTY WATERS OF THE U.S. DELINEATION REPORT



PRINCE WILLIAM PARKWAY PROPERTY
4291 PRINCE WILLIAM PARKWAY
WOODBRIDGE, PRINCE WILLIAM, VIRGINIA

ECS PROJECT NO. 47:4936

FOR

MOHAMMADIA CENTER OF NORTHERN VIRGINIA, INC.

NOVEMBER 17, 2017

REVISED FEBRUARY 5, 2018

November 17, 2017

Revised February 5, 2018

Mr. Jafar Shah
Mohammadia Center of Northern Virginia, Inc.
13198 Quade Lane
Woodbridge, Virginia 22193

ECS Project No. 47:4936

Reference: Waters of the U.S Delineation Report, Prince William Parkway Property, 4291 Prince William Parkway, Woodbridge, Prince William Virginia

Dear Mr. Shah:

ECS Mid-Atlantic, LLC (ECS) is pleased to provide you with the results of our Waters of the U.S. (WOUS) Delineation Report for the referenced site. ECS services were provided in general accordance with ECS Proposal No. 47:5925 authorized on October 11, 2017 and generally meet the requirements of the 1987 U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual, and on the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region, Version 2.0 dated November 2010.

If there are questions regarding this report, or a need for further information, please contact the undersigned.

Sincerely,

ECS Mid-Atlantic, LLC

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1.0 INTRODUCTION

This report presents the findings of a wetland and stream study conducted by ECS Mid-Atlantic, LLC (ECS) for Mohammadia Center of Northern Virginia, Inc. at the Prince William Parkway Property located at 4291 Prince William Parkway, Woodbridge, Prince William County, Virginia (Latitude: 38.673319 N, Longitude: -77.338135 W), and is identified by Prince William County Parcel GPIN 8193-40-5913. The site includes approximately 3.0-acres, as shown on the Site Location Map (Appendix I). The site is developed with a residential structure and is mostly maintained lawn area.

ECS conducted the wetland and stream delineation on October 19, 2017. The purpose of this study was to identify and delineate Waters of the U.S. (WOUS) within the proposed project site, if any. One non-jurisdictional intermittent stream was observed and one non-jurisdictional Palustrine Emergent (PEM) wetland was observed within the study limits.

2.0 METHODOLOGY

This wetland delineation is based on ECS' professional judgment and application of the technical criteria presented in the 1987 U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual, and on the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, Version 2.0 dated April 2012. Wetland boundaries were delineated using the routine onsite determination method described in the USACE Manual and Regional Supplement, in conjunction with the Eastern Mountains and Piedmont 2016 Regional Wetland Plant List, and the USDA Soil Survey. Field work was completed on October 19, 2017 by Anna Allie.

ECS completed the following tasks to identify and delineate wetland boundaries onsite:

Desktop Review: ECS wetland scientists reviewed the U.S. Geological Survey (USGS) topographic map, U.S. Department of Agriculture Natural Resource Conservation Service (USDA-NRCS) Soil Survey of Prince William County, Virginia, U.S. Fish & Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps, and available aerial photographs to identify non-jurisdictional Waters of the U.S. (i.e., streams, wetlands, natural ponds, lakes). Please reference Appendix I for the above-mentioned maps.

Field Investigation: ECS performed onsite wetland delineations as described above. First, site hydrology was observed and the plant community within the data plot was characterized. The dominant plant species within each community were then identified, and it was determined whether or not hydrophytic (wetland) plants dominated the plant community. The USFWS has defined five wetland plant indicator categories including:

Obligate wetland (OBL) – has >99% probability of occurring in wetlands
Facultative wetland (FACW) – has 66% to 99% chance of occurring in wetlands
Facultative (FAC) – has 33% to 66% chance of occurring in wetlands
Facultative upland (FACU) – has 1 to 33% chance of occurring in wetlands
Upland (UPL) – has <1% chance of occurring in wetlands
No Indicator (NI) – no wetland indicator for the specified species

Plants identified as OBL, FACW, or FAC are considered wetland plants (or hydrophytes) by USACE.

In areas determined to have hydrophytic vegetation and potential wetland hydrology, an approximately 16-20 inch soil test hole was completed with a hand auger to determine if hydric soils were present. The soil boring was also inspected to determine if indicators of wetland hydrology (inundation, soil saturation, etc.) were present.

Once an area is determined to be a wetland, further testing was performed to locate the wetland/ upland (non-wetland) boundary. A second test hole was completed in the upland area to document non-wetland conditions. Wetland boundaries were marked with consecutively numbered surveyor's ribbon flags. The wetland flags were surveyed as part of this assessment.

Data forms specified in the Regional Supplement were completed for each wetland and non-wetland testhole location, referred to as data points. The data forms recorded the vegetation, soils, and hydrology observations used in making the wetland determinations. ECS did identify wetland areas

during the site reconnaissance which, in our professional opinion, would not be considered jurisdictional by the USACE.

2.1 Methodology for Delineating Streams

During the field evaluation for wetlands, ECS observed the site for streams that could be considered jurisdictional by state and federal regulatory agencies. ECS used field indicators such as the presence of an ordinary high water mark (OHWM) and continuous bed and banks to delineate stream channels and also observed characteristics such as flow, substrate composition, presence/absence of defined bed and banks, origin of hydrologic source, presence/absence of vegetation in the stream channel, and composition and relative abundance of resident benthic macroinvertebrates to classify onsite streams into three stream types: ephemeral, intermittent, and perennial.

Streams located onsite are depicted on the Waters of the U.S. Delineation Map (Appendix IV). The individual stream lengths and classifications are summarized on Table 1. The field observations are summarized on the stream data forms in Appendix II. Photographs of the streams are presented in Appendix III.

2.2 Methodology for Delineating Resource Protection Areas (RPAs)

The project lies within the Chesapeake Bay Watershed and is subject to the Chesapeake Bay Preservation Act and local ordinances, which require the delineation of any Resource Protection Areas (RPA) that are present or that may extend onsite. As defined by the Chesapeake Bay Preservation Act, the RPA is a vegetated or protective buffer, depending on the locality, that includes the land area within 100 feet of either a perennial stream bank, the edge of wetlands adjacent to perennial streams, or natural lakes and ponds.

3.0 FINDINGS

3.1 Desktop Review

The NWI map did not depict wetlands within the project site boundaries. The USGS Occoquan quadrangle map shows the mean elevation of the site is approximately 350 feet above mean sea level, and slopes to the southeast. The site is located within the Middle Potomac-Anacostia-Occoquan watershed and is identified as Hydrologic Unit Code (HUC) 02070010. The weather at the time of the site reconnaissance was mild and clear. The last precipitation event prior to the site reconnaissance was on October 12, and approximately 0.3 inches of precipitation was recorded.

3.2 Site Soils

A review of the USDA Soil Survey for the project site identified two mapping units within the site boundaries. These soil mapping units are: Units 29B - Hoadly loam, 2 to 7 percent slopes and 41B - Neabsco loam, 0 to 7 percent slopes. Neither of these units are classified as hydric by the NRCS.

3.3 Waters of the U.S.

One non-jurisdictional wetland area totaling 0.0042-acres and one non-jurisdictional stream totaling 195-linear feet were identified and delineated within the study area. Their size and USFWS Cowardin classifications are summarized below (Table 1), and their locations are illustrated on the Waters of the U.S. Delineation Map (Appendix IV).

Hydrologic features within the ESL are governed primarily by topography. The site gently slopes from the northeast to the southwest. Topography and surface water flow are the primary hydrology sources for the western portion of the site as this portion of the site contains relatively steep slopes and water concentrates within the valleys at the bottom of the slope, which appears to have formed the stream channel and emergent wetland.

Table 1: WOUS Summary Table

WOUS	Cowardin Classification	Onsite Linear Feet (LF)	Onsite Acreage (AC)	Onsite Square Footage (Sq. Ft.)
Stream A	Intermittent Stream (R4)	195	--	--
Wetland A	Palustrine Emergent Wetland (PEM)	--	0.0042	184

3.3.1 Wetland Summary

A palustrine emergent wetland connected to the channel was observed on the west side of the project site. The wetland appears to have been created by the concentration of surface water runoff

in this low lying portion of the site. The approximate location of this observed wetland is illustrated on the Waters of the U.S. Delineation Map (Appendix IV).

3.3.2 Stream Summary

An intermittent stream channel was observed on the project site. The stream channel appears to form where the PEM wetland becomes more channelized and a defined bed and bank becomes evident. The stream flows offsite to the west and does not appear to connect to another surface water down stream. The observed location of this stream is illustrated on the Waters of the U.S. Delineation Map (Appendix IV).

3.4 Resource Protection Areas

ECS used the stream and wetland boundaries established during the field investigation to delineate the RPA buffer by calculating and mapping the 100-foot buffer that extends off each bank of perennial streams and/or the edges of wetlands adjacent to perennial streams or natural lakes and ponds. No perennial streams or FEMA floodplains were located on the site or are believed to be within 100 feet of the property boundary; therefore no RPA buffer is expected to be present onsite.

4.0 REGULATORY DISCUSSION

If the WOUS are considered jurisdictional by the USACE, they are regulated by Sections 401 and 404 of the Clean Water Act. State and Federal law dictates that any disturbance to WOUS must be permitted through the appropriate agencies.

Upon your request, we will contact the USACE to schedule a field meeting to conduct a wetlands and Waters boundary confirmation and preliminary jurisdictional determination. This process takes an average of three to four months depending on the availability of USACE personnel. If any potential impacts are proposed, we can assist you with permitting options and support to complete the process. In the interim, we recommend further review of state and federal agency records pertaining to Section 7 (Federal Endangered Species Act) and Section 106 (National Historic Preservation Act). These reviews will generally be required to verify compliance for either the Nationwide Permit (NWP) or General Permit conditions and early coordination may help prevent potential permitting delays.

If jurisdictional wetlands and streams are present at the site, planned land disturbance in these areas would likely require a permit from the U.S. Army Corps of Engineers and/or the Virginia Department of Environmental Quality (VDEQ). The Virginia Water Protection Program (VWP) serves as Virginia's Section 401 Water Quality Certification program for Federal Section 404 permits issued under the authority of the Clean Water Act. For those projects impacting less than 0.1-acre of non-tidal wetlands and less than 300 linear feet of stream bed, a Nationwide permit from the USACE can typically be issued for certain commercial, transportation, agricultural and utility-related impacts for which DEQ Section 401 Water Quality Certifications have been granted.

VWP General Permits can also be used for permanent or temporary impacts in non-tidal surface Waters (i.e., streams) and wetlands. There are four General Permits available. General Permit WP1 can be used for impacts not exceeding one-half acre of non-tidal surface Waters, including up to 300 linear feet (lf) of non-tidal stream channel. WP2 is applicable to "Facilities and Activities of Utilities" impacting up to 1,500 lf of non-tidal stream and up to one acre of non-tidal wetlands. WP3 is for linear transportation projects impacting up to two acres of non-tidal wetlands and up to 1,500 lf of stream bed. WP4 is for impacts from "Development and Certain Mining Activities" and authorizes impacts up to two acres in wetlands and 1,500 lf of non-tidal stream bed. For activities exceeding the maximum allowable disturbances (two acres and 1,500 lf), a VWP Individual Permit may be required.

The USACE-Norfolk District and the VDEQ have also implemented the State Programmatic General Permit (17-SPGP-01) program to further streamline the permit process and avoid duplication of agency review; this program replaces certain Nationwide Permits. The 17-SPGP-01 authorizes discharge of dredged or fill material impacting up to one acre of non-tidal wetlands and 2,000 lf of non-tidal stream bed for certain residential, commercial and institutional developments and up to 1/3 acre of non-tidal Waters for linear transportation projects. If the project does not qualify for 17-SPGP-01, or there are unresolved resource issues (e.g., endangered species impact, historic resources), a separate Individual Permit from the Corps will likely be required.

5.0 CONCLUSIONS

One non-jurisdictional wetland area totaling 0.0042-acres and one non-jurisdictional stream totaling 195-linear feet were identified and delineated within the study area. The locations and boundaries of non-jurisdictional Waters are illustrated on the attached Waters of the U.S. Delineation Map (Appendix IV).

The flagged WOUS boundaries are subject to change during the jurisdictional determination meeting with the USACE. ECS cannot guarantee that field conditions and/or WOUS boundaries will not change over time.

Appendix I: Figures

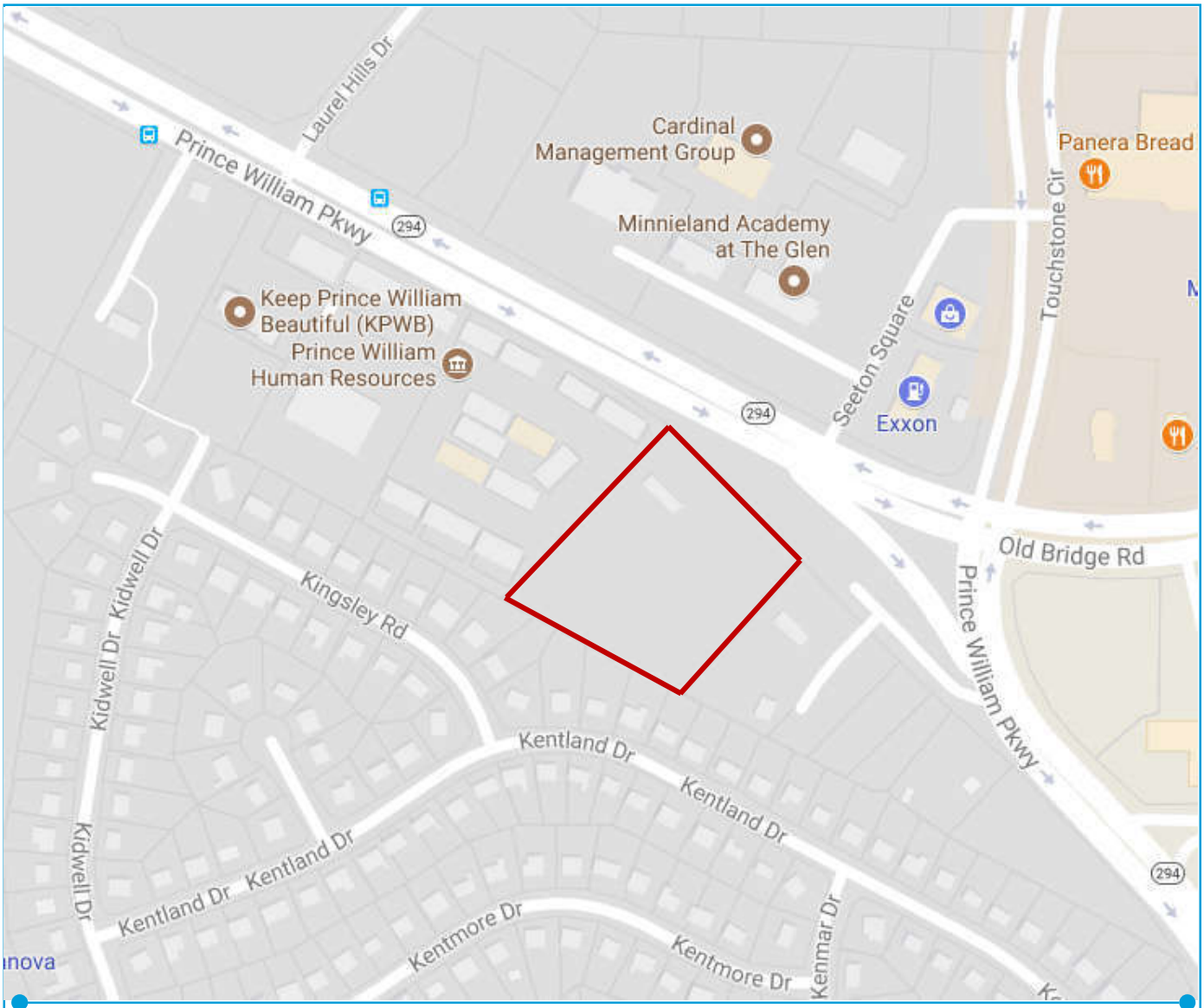

FIGURE I: SITE LOCATION MAP

PROJECT #47:4936 — 4291 PRINCE WILLIAM HWY

PRINCE WILLIAM COUNTY, VIRGINIA

N W E S

NOT TO SCALE

WETLAND DELINEATION REPORT

FOR: MOHAMMADIA CENTER OF NORTHERN VIRGINIA, INC.

NOVEMBER 2017

SOURCE: GOOGLE MAPS

ECS MID-ATLANTIC, LLC
14026 THUNDERBOLT PLACE
SUITE 100
CHANTILLY, VA 20151
703-471-8400

www.ecslimited.com

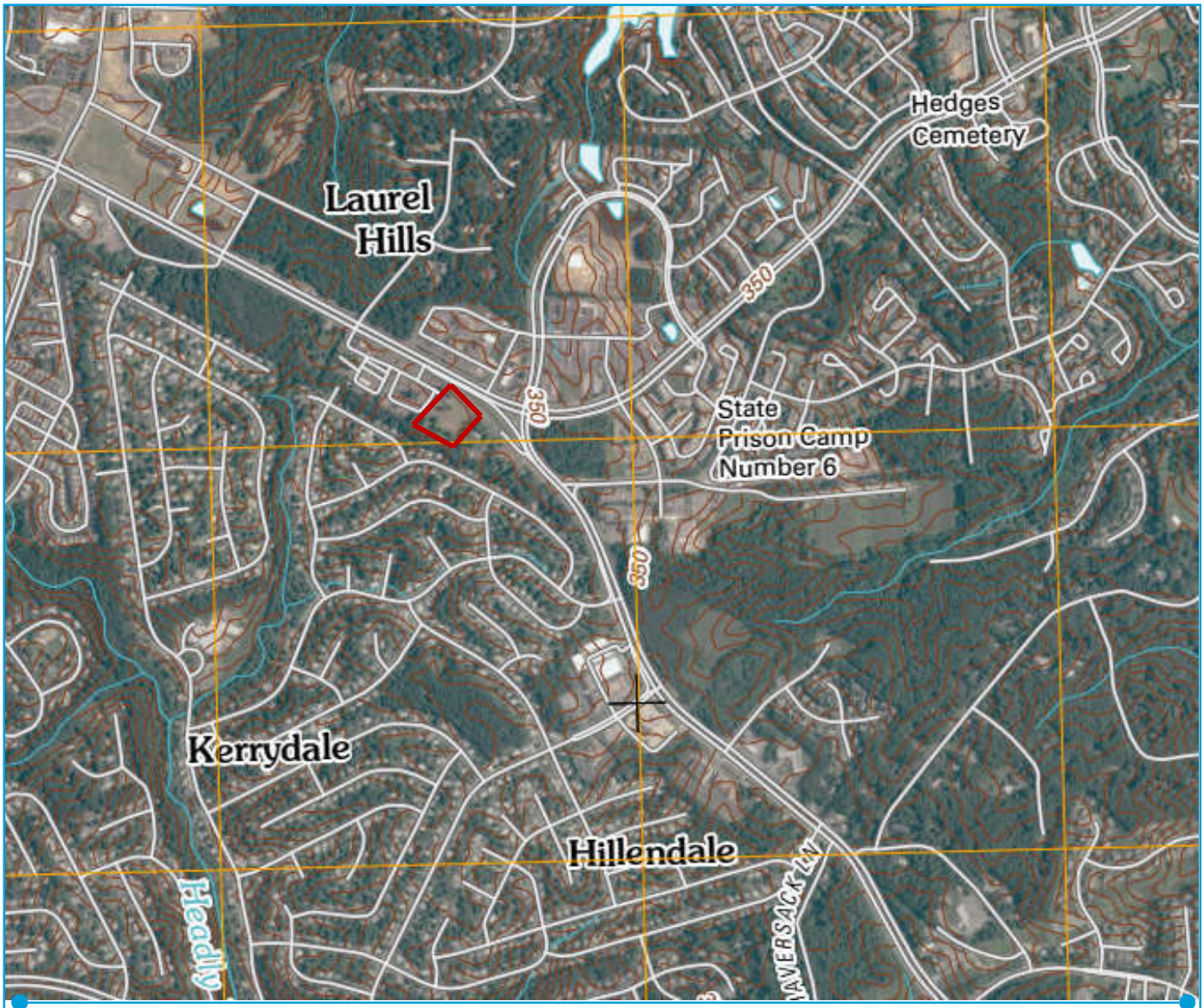

FIGURE II: USGS TOPOGRAPHIC MAP

PROJECT #47:4936 — 4291 PRINCE WILLIAM HWY

PRINCE WILLIAM COUNTY, VIRGINIA

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WETLAND DELINEATION REPORT

FOR: MOHAMMADIA CENTER OF NORTHERN VIRGINIA, INC.

NOVEMBER 2017

SOURCE: USGS OCCOQUAN QUAD 2010

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CHANTILLY, VA 20151
703-471-8400

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FIGURE III: USDA SOILS MAP

PROJECT #47:4936 — 4291 PRINCE WILLIAM HWY

PRINCE WILLIAM COUNTY, VIRGINIA

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WETLAND DELINEATION REPORT

FOR: MOHAMMADIA OF NORTHERN VIRGINIA, INC.

NOVEMBER 2017

SOURCE: NRCS WEB SOIL SURVEY

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SUITE 100
CHANTILLY, VA 20151
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FIGURE IV: NATIONAL WETLANDS INVENTORY MAP
PROJECT #47:4936 — 4291 PRINCE WILLIAM HWY
PRINCE WILLIAM COUNTY, VIRGINIA

NOT TO SCALE

WETLAND DELINEATION REPORT

FOR: MOHAMMADIA CENTER OF NORTHERN VIRGINIA, INC.

NOVEMBER 2017

SOURCE: NATIONAL WETLANDS INVENTORY

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SUITE 100
CHANTILLY, VA 20151
703-471-8400

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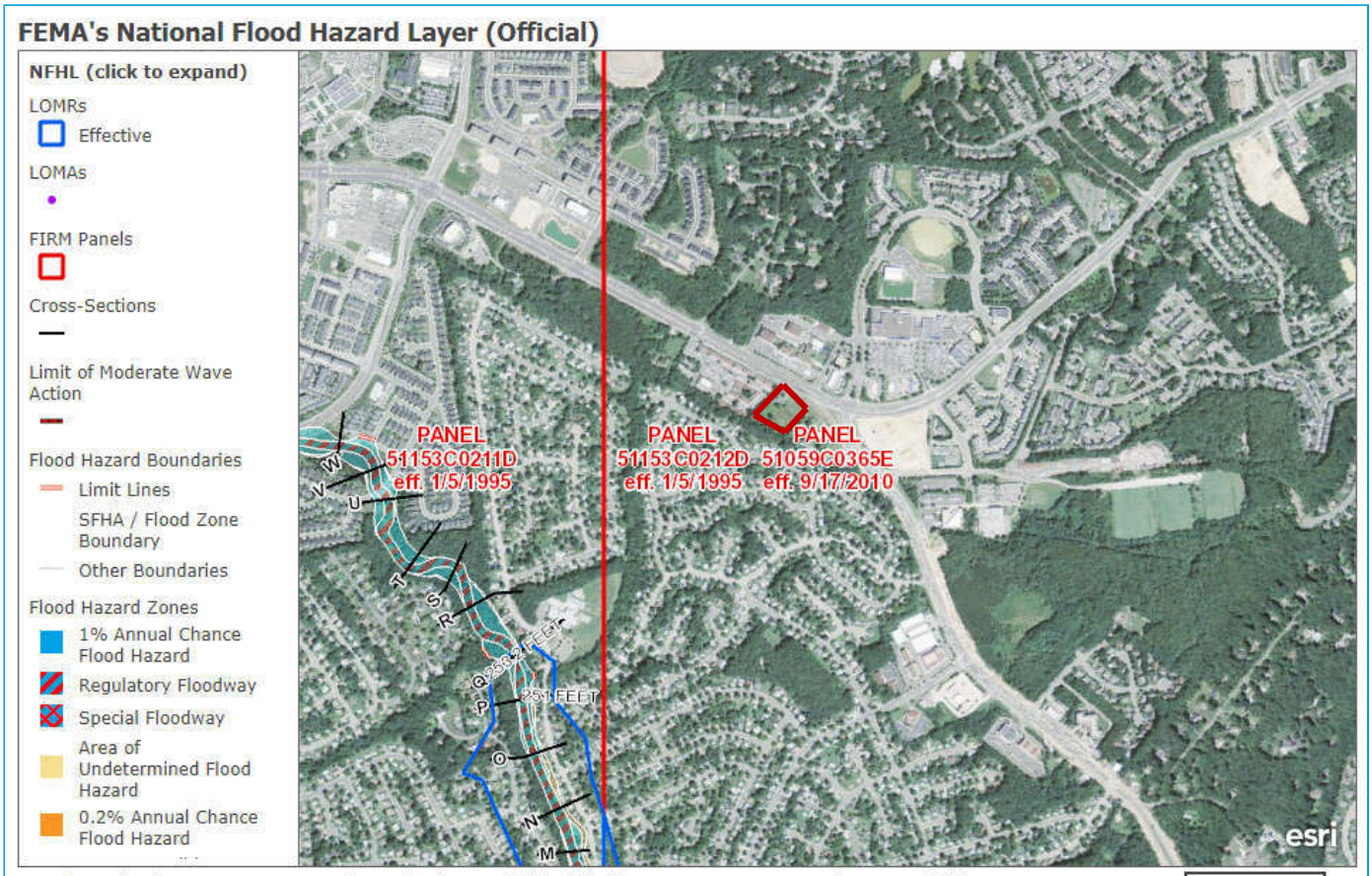

FIGURE V: FEMA FLOODPLAIN MAP

PROJECT #47:4936 — 4291 PRINCE WILLIAM HWY

PRINCE WILLIAM COUNTY, VIRGINIA

NOT TO SCALE

WETLAND DELINEATION REPORT

FOR: MOHAMMADIA NENTER OF NORTHERN VIRGINIA, INC.

NOVEMBER 2017

SOURCE: FEMA NATIONAL FLOOD MAPPER

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SUITE 100
CHANTILLY, VA 20151
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FIGURE VI: RESOURCE PROTECTION AREA MAP

PROJECT #47:4936 — 4291 PRINCE WILLIAM HWY

PRINCE WILLIAM COUNTY, VIRGINIA

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WETLAND DELINEATION REPORT

FOR: MOHAMMADIA CENTER OF NORTHERN VIRGINIA, INC.

NOVEMBER 2017

SOURCE: PRINCE WILLIAM COUNTY GIS

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SUITE 100
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FIGURE VII: COLOR AERIAL IMAGE

PROJECT #47:4936 — 4291 PRINCE WILLIAM HWY

PRINCE WILLIAM COUNTY, VIRGINIA

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WETLAND DELINEATION REPORT

FOR: MOHAMMADIA CENTER OF NORTHERN VIRGINIA, INC.

NOVEMBER 2017

SOURCE: PRINCE WILLIAM COUNTY GIS

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Appendix II: USACE Wetland Data Forms and Stream Data Forms

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 4291 Prince William Property City/County: Woodbridge Sampling Date: 10/19/17

Applicant/Owner: _____ State: VA Sampling Point: DP1

Investigator(s): Anna Allie Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR or MLRA): _____ 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 X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface Water Present? Yes _____ No _____ Depth (inches): _____

Water Table Present? Yes _____ No _____ Depth (inches): _____

Saturation Present? (includes capillary fringe) Yes X No _____ Depth (inches): _____

Wetland Hydrology Present? Yes X No _____

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

Aerial photos, site visit

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP1

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

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

Sapling Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		

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

Shrub Stratum (Plot size: 15')			
1. Scirpus ancistrochaetus	30	yes	OBL
2. Juncus abortivus	15	no	OBL
3. Cyperus esculentus	10	no	FACW
4.			
5.			
6.			
	55 = Total Cover		

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

Herb Stratum (Plot size: 5')			
1. Ludwigia alternifolia	5	yes	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	5 = Total Cover		

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

Woody Vine Stratum (Plot size: 5')			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

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

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	15	x 2 =	30
FAC species		x 3 =	
FACU species		x 4 =	
UPL species		x 5 =	
Column Totals:	45 (A)		60 (B)

Prevalence Index = B/A = 1.33

Hydrophytic Vegetation Indicators:

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

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

Definitions of 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, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes X No _____

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

SOIL Sampling Point: DP1

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-1	10 YR 4/3	100					Clay loam	
1-10	2.5 YR 5/2	80	10 YR 5/6	20			Clay loam	Hydric
10+	2.5 YR 6/2	70	10 YR 5/8	30			Sandy clay	Hydric

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(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 Soils[3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: 4291 Prince William Property City/County: Woodbridge Sampling Date: 10/19/17

Applicant/Owner: _____ State: VA Sampling Point: DP2

Investigator(s): Anna Allie Section, Township, Range: _____

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): _____

Subregion (LRR or MLRA): _____ 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 X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

VEGETATION (Five Strata) – Use scientific names of plants. Sampling Point: DP2

Tree Stratum (Plot size:)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Sapling Stratum (Plot size:)			
1. Catalpa speciosa	5	yes	FAC
2.			
3.			
4.			
5.			
6.			
	5 = Total Cover		
50% of total cover:	20% of total cover:		
Shrub Stratum (Plot size:)			
1. Rubus allegheniensis	20	yes	FACU
2. Solidago canadensis	5	no	FACU
3.			
4.			
5.			
6.			
	25 = Total Cover		
50% of total cover:	20% of total cover:		
Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
50% of total cover:	20% of total cover:		
Woody Vine Stratum (Plot size:)			
1. Lonicera japonica	70	yes	FACU
2.			
3.			
4.			
5.			
	70 = Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 33.3 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	x 2 =
FAC species 5	x 3 = 15
FACU species 95	x 4 = 380
UPL species	x 5 =
Column Totals: 100 (A)	395 (B)

Prevalence Index = B/A = 3.95

Hydrophytic Vegetation Indicators:

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

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

Definitions of 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, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes ___ No X

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

SOIL Sampling Point: DP2

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

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10 YR 4/3	100					Sandy loam	
6+	2.5 YR 5/3	100					Sandy clay-loam	

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

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) **(LRR N)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1) **(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 Soils[3]:

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

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

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

Remarks:

Appendix III: Photographic Log

1 - East Front Lawn View from Adjacent Property

2 - View of Structure on Property

3 - East Back Lawn View from Adjacent Property

4 - South View Toward Water A

5 - Field with Tree Line to East-Southeast

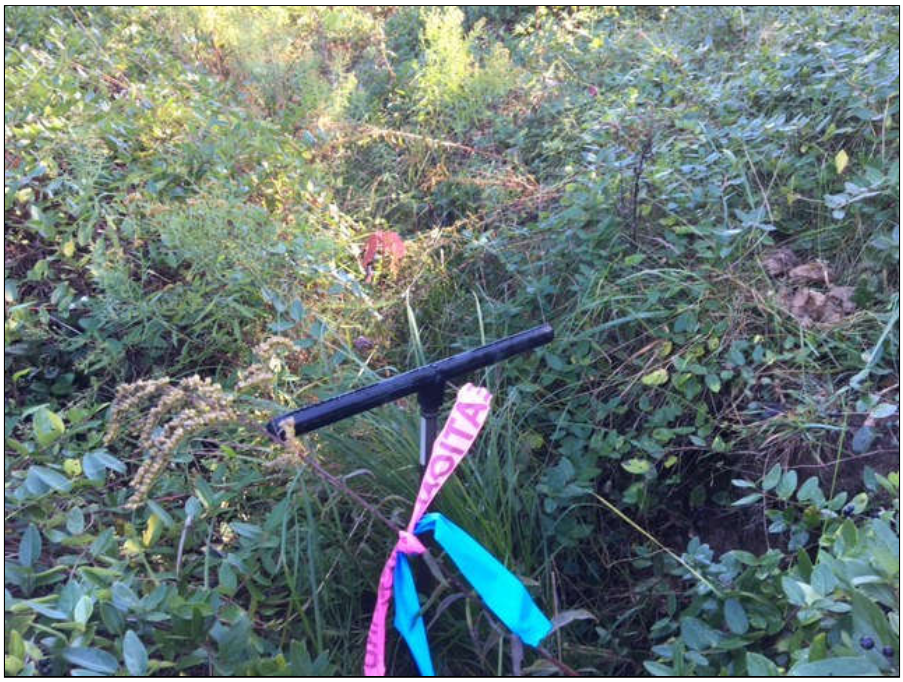
6 - View of North Property Boundary

7 - View Along Southern Property Boundary to the West

8 - Aboveground Storage Tank Near Southern Property Boundary

9 - Southern Property Boundary Tree Line

10 - View of Wetland Area



11 - Data Point 1 Location

12 - Data Point 2 Location

13 - Observed Vegetation

14 - Downstream View Across Wetland Area

15 - Water A Transition to Ephemeral Stream

16 - Water A

17 - IMG 0098

18 - Endpoint of Water A in Adjacent Property Parking Area

19 - Endpoint of Water A Toward Adjacent Property

Appendix IV: Waters of the U.S. Delineation Map

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LEGEND

- NON JURISDICTIONAL STREAM CHANNEL
- NON JURISDICTIONAL PALUSTRINE EMERGENT (PEM) WETLAND
- DP-# APPROXIMATE DATAPOINT LOCATION
- PROJECT BOUNDARY

SCALE (IN FEET)

25 50

50 0

4291 PRINCE WILLIAM PKWY

PRINCE WILLIAM COUNTY, VIRGINIA

WATERS OF THE U.S. DELINEATION MAP

MOHAMMADIA CENTER
OF NORTHERN VIRGINIA, INC.

ECS REVISIONS
REVISED 3/26/18

ENGINEER	DRAFTING
AMM	ECM

SCALE	1" - 50'
PROJECT NO.	47:4936
SHEET	1 OF 1
DATE	11/17/2017

I:_e-projects\4900-4999\4936 Prince William Pkwy Nat Res\drafting\WOUS Delineation Map.dwg