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December 16, 2020

VIA eFILING

Rosemary Chiavetta, Secretary
Pennsylvania Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor
Harrisburg, PA 17120

**Re: Letter Of Notification Of PECO Energy Company, Filed Pursuant To 52 Pa. Code Chapter 57 Subchapter G, For Approval To Site And Construct 0.5 Miles Of Transmission Lines In Lower Chanceford Township, York County, Pennsylvania To Interconnect To The Transmission Grid The New 500-230 kV Furnace Run Substation Proposed By Transource Pennsylvania, LLC
Docket No. A-2020**

Dear Secretary Chiavetta:

Enclosed, for filing on behalf of PECO Energy Company is a Letter of Notification (“LON”) requesting approval for the Peach Bottom-Three Mile Island 500 Kilovolt Transmission Line Tap to Furnace Run Substation Project. This LON is filed pursuant to the Pennsylvania Public Utility Commission’s regulations at 52 Pa. Code § 57.72(d)(1). Confidential Attachment 5 to the LON has been emailed directly to Secretary Chiavetta.

Copies of this LON and a Notice of Filing have been served upon the parties as required by 52 Pa. Code § 57.74 and indicated on the enclosed Certificate of Service.

If there are any questions concerning this matter, please contact me at the address or telephone number provided above.

Respectfully submitted,



Jennedy Johnson
Enclosures

- c: Certificate of Service
Paul T. Diskin – Bureau of Technical Utility Services (via electronic mail)
Jordan Van Order – Bureau of Technical Utility Services (via electronic mail)

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

LETTER OF NOTIFICATION OF PECO	:	
ENERGY COMPANY, FILED	:	
PURSUANT TO 52 PA. CODE	:	
CHAPTER 57 SUBCHAPTER G,	:	
FOR APPROVAL TO SITE AND	:	DOCKET NO. A-2020-
CONSTRUCT 0.5 MILES OF	:	
TRANSMISSION LINES IN LOWER	:	
CHANCEFORD TOWNSHIP, YORK	:	
COUNTY, PENNSYLVANIA TO	:	
INTERCONNECT TO THE	:	
TRANSMISSION GRID THE NEW 500-	:	
230 KV FURNACE RUN SUBSTATION	:	
PROPOSED BY TRANSOURCE	:	
PENNSYLVANIA, LLC	:	

LETTER OF NOTIFICATION

TO THE PENNSYLVANIA PUBLIC UTILITY COMMISSION:

PECO Energy Company (“PECO” or “Company”) hereby files this Letter of Notification, pursuant to 52 Pa. Code § 57.72(d), to request approval of the Pennsylvania Public Utility Commission (“Commission”) to site and construct two new 500 kV connecting transmission lines approximately 0.5 miles in length in Lower Chanceford Township, York County, Pennsylvania (the “Project”). The new transmission lines will tap PECO’s existing Peach Bottom-TMI 500 kV Transmission Line in order to connect it to the new 500 kV/230 kV Furnace Run Substation that Transource Pennsylvania, LLC (“Transource”) plans to construct and operate as part of its proposed Independence Energy Connection-East Project (“IEC Project”).

PECO's exercise of the siting authority requested in this Letter of Notification is contingent upon the Commission granting Transource the siting and other authority that Transource has requested in order to construct and operate the proposed IEC Project.¹ Subject to that contingency and to the Commission's approval of this Letter of Notification, construction of the Project is scheduled to begin in June 2021 to support a projected in-service date of the IEC Project in December 31, 2022. In further support of the siting authority requested herein, PECO states as follows:

I. INTRODUCTION

1. This Letter of Notification is filed by PECO, a public utility that provides electric distribution, transmission, and default services in Pennsylvania subject to the regulatory jurisdiction of the Commission.

2. PECO's address is 2301 Market Street, Philadelphia, Pennsylvania 19103.

3. PECO's attorneys in this matter authorized to receive notices and communications on its behalf are:

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Philadelphia, PA 19103
215.841.4353
jennedy.johnson@exeloncorp.com

Kenneth M. Kulak
Morgan, Lewis & Bockius LLP
1701 Market Street

¹ See *Application of Transource Pennsylvania, LLC filed Pursuant to 52 Pa. Code Chapter 57, Subchapter G, for Approval of the Siting and Construction of the 230 kV Transmission Line Associated with the Independence Energy Connection-East Projects in Portions of York County, Pennsylvania*, Docket No. A-2017-2640195 (filed Dec. 27, 2017) ("Transource Application"). After extensive litigation, Transource entered into settlements in October 2019 with several parties to the proceeding to propose an amendment to the original Transource Application using PPL Electric Utilities' ("PPL's") existing right-of-way and transmission infrastructure in York County for the East Portion of the IEC Project. On January 29, 2020, Transource and PPL filed a Joint Amended Application pursuant to the settlement agreements. An evidentiary hearing was held on the Joint Amended Application on July 9, 2020, and the parties submitted Main Briefs and Reply Briefs on August 11, 2020 and September 25, 2020, respectively.

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PECO agrees to accept electronic service in this proceeding.

4. PECO furnishes electric service to approximately 1.6 million customers throughout its certificated service territory, which includes all or portions of five counties and encompasses approximately 2,100 square miles in southeastern Pennsylvania with a population of approximately four million people. PECO is a “public utility” and an “electric distribution company” as defined in Sections 102 and 2803 of the Pennsylvania Public Utility Code, 66 Pa. C.S. §§ 102 and 2803.

5. PECO owns 1,067 miles of transmission lines operating at 69 kV (kilovolts) or higher, 472 substations, approximately 9,000 miles of underground distribution cable, and approximately 13,000 miles of aerial distribution lines operating at less than 69 kV.

6. This Letter of Notification includes the following accompanying attachments:

- Attachment 1 Topographical Area Map
- Attachment 2 Proposed System Map
- Attachment 3 Typical 500 kV Supporting Structures
- Attachment 4 Right-of-Way Area Survey
- Confidential Attachment 5 PECO Vegetation Management Practices
- Attachment 6 Wetland Delineation Report
- Attachment 7 Pennsylvania Natural Diversity Inventory (“PNDI”) Results, ID – 671837
- Attachment 8 Letter of Notification Filing Checklist

7. This Letter of Notification and accompanying Attachments, which are incorporated herein by reference, contain all the information required by 52 Pa. Code § 57.72(d)(4).

II. THE PROJECT

A. Need For The Project

8. The Project is needed to interconnect Transource's proposed Furnace Run 500 kV/230 kV Substation to the bulk power transmission system that is under the functional control of PJM Interconnection, L.L.C. ("PJM"). As previously explained, the Furnace Run 500 kV/230 kV Substation is part of Transource's larger IEC Project. A detailed description of the IEC Project has been furnished in the original and amended Transource Application. As explained below, the IEC Project was identified by PJM through its Regional Transmission Expansion Plan ("RTEP") process as a "required" RTEP "baseline" project.

9. Pursuant to Section 215 of the Federal Power Act, the Federal Energy Regulatory Commission ("FERC") has certified the North American Electric Reliability Corporation ("NERC") as the electric reliability organization responsible for developing and enforcing mandatory transmission reliability standards, subject to FERC review and approval. Once approved by the FERC, the NERC's reliability standards are mandatory because the failure to comply with such standards can result in serious consequences for electric reliability.

10. PJM is the FERC-approved Regional Transmission Organization ("RTO") charged with ensuring the reliability of the electric transmission system under its functional control. To that end, PJM coordinates the movement of wholesale electricity in all or parts of 13 states and the District of Columbia, including most of Pennsylvania.

11. As the FERC-approved RTO, PJM plans and operates the transmission system under its functional control to ensure reliable, efficient transmission service for the entire PJM

region. PJM and its members, including PECO, prepare an annual RTEP to identify system reinforcements that are required to meet NERC reliability standards and each individual transmission owner's planning criteria. Using the RTEP process, PJM develops specific regional transmission projects and designates the appropriate transmission owner to construct those projects.

12. PJM's RTEP includes a Market Efficiency Analysis to identify congestion on electric transmission facilities that has economic or wholesale market effects and to identify potential improvements to electric transmission economic efficiencies. The electric transmission needs identified in the Market Efficiency Analysis are a function of the essential role the PJM transmission grid plays as the means for generators to participate in a competitive wholesale market to supply electric capacity and energy to serve customers' load wherever it may be located in PJM's geographic footprint.

13. When PJM's Market Efficiency Analysis identifies a need to relieve congestion on electric transmission facilities, PJM opens a Long Term Proposal Window to solicit the submittal of potential solutions (i.e., market efficiency projects) to address those needs. Projects designed to achieve such potential solutions are evaluated by PJM based on the following two criteria: (1) the project must address congestion as simulated in the Market Efficiency Analysis; and (2) the project benefits must exceed the costs by at least 25 percent. Based on that solicitation process, PJM selected Transource and Transource's IEC Project.

14. The need for the IEC Project was identified through PJM's 2014/2015 RTEP Long Term Proposal Window solicitation. The IEC Project was reviewed by PJM's

Transmission Expansion Advisory Committee in June 2016 and was added as “required” Baseline Upgrades in the 2016 RTEP.²

15. The IEC Project approved by PJM involves Transource’s construction of the new 500 kV/230 kV Furnace Run Substation and its construction or reconstruction of 230 kV transmission lines from the Furnace Run 500 kV/230 kV Substation to the existing Conastone Substation located near Norrisville, Harford County, Maryland. The IEC Project was approved by PJM in order to alleviate transmission congestion constraints and provide reliability benefits in Pennsylvania and Maryland. PECO’s existing Peach Bottom-TMI 500 kV Transmission Line will provide the 500 kV power source to the 500 kV side of the Furnace Run 500 kV/230 kV Substation. The Project for which siting authority is requested herein is required to tap the existing Peach Bottom-TMI 500 kV Transmission Line and interconnect that line with the new Furnace Run Substation. As previously noted, PJM determined that the proposed Project is a “baseline” RTEP project and, accordingly, assigned it PJM baseline RTEP upgrade IDs “b2752.2” and “b2752.3.”

B. Description Of The Proposed Project

16. The site for the proposed Furnace Run Substation is in close proximity to the existing 42-mile Peach Bottom-TMI 500 kV Transmission Line that will be split and tied into the Furnace Run Substation. Upon completion, the segment of PECO’s existing transmission line located south of the split will be designated as the Peach Bottom-Furnace Run 500 kV Transmission Line, and the segment north of the split will be designated as the TMI-Furnace Run 500 kV Transmission Line.

² The IEC Project is discussed in detail on pages 33-38 and 123 of the PJM 2016 Regional Transmission Expansion Plan Report, Book 3, issued Feb. 28, 2017, which is available at <https://www.pjm.com/-/media/library/reports-notices/2016-rtep/2016-rtep-book-3.ashx?la=en>.

17. To tie the existing 500 kV line into the new Furnace Run Substation, PECO proposes to construct two new 500 kV transmission lines that will extend approximately 0.5 miles from the Furnace Run Substation to the Peach Bottom-TMI 500 kV Transmission Line. The two new 500 kV transmission lines will parallel each other on a common new right-of-way, and will be separated by approximately 160 feet. A map of the proposed Project is provided as Attachment 2.

18. The new 500 kV transmission lines will consist of two tubular steel H-frame dead end structures with a height of approximately 90 feet, two 3-pole dead end structures, high capacity conductors, and two overhead ground wires. The new dead end structures are expected to range between 80 and 140 feet and will be installed on concrete caisson foundations. A typical H-frame and dead end structure are shown in Attachment 3.

19. The new transmission lines will be designed and constructed to operate at 500 kV. The 500 kV design will utilize six phase conductors, with two bundled conductors at each of the three-phase positions. The structures will include one optical ground wire (“OPGW”) and one Alumoweld-clad steel (“AW”) static wire. The power conductors will be 2493 thousand circular mils³ 54/37 aluminum conductor aluminum reinforced (“ACAR”) conductors. The OPGW and AW conductors will be 0.614 inches and 0.572 inches in diameter, respectively, and will provide lightning protection for the circuit. The OPGW will also provide communication with the circuit breakers that are capable of removing the lines from service should a fault be detected.

20. The minimum conductor-to-ground clearance for the proposed 500 kV lines will be 29.7 feet, which occurs at a maximum conductor temperature of 100 degrees Celsius. The

³ This wire size is the equivalent cross sectional area in thousands of circular mils. A circular mil is the area of a circle with a diameter of one thousandth (0.001) of an inch.

design minimum conductor clearances and conductor thermal ratings⁴ are set forth in the tables below.

Table 1: Conductor Clearances		
<u>Surface Underneath Conductors</u>	<u>NESC Standard Clearance</u>	<u>PECO Conductor Clearances</u>
Ground, Farmland	26.7 feet	29.7 feet
Roadways, Driveways, Parking Lots	26.7 feet	29.7 feet
Railroads, above top or rail	34.7 feet	37.7 feet
Areas not accessible by vehicles	22.7 feet	25.7 feet

Table 2: Conductor Thermal Ratings (per bundle)			
<u>Condition</u>	<u>Ambient Temperature (°C)</u>	<u>Wind Speed (ft/sec)</u>	<u>Ampacity (Amps)</u>
Summer Normal	35	0	3372
Winter Normal	10	0	4148
Summer Emergency	35	2.533	4280
Winter Emergency	10	2.533	5084

21. The total estimated cost of the Project is approximately \$12.2 million.
22. Upon Commission approval, the Project has a scheduled construction start date of June 2021 to support an in-service date of December 31, 2022.

III. HEALTH AND SAFETY

23. The proposed Project will not create any unreasonable risk of danger to the public health or safety.

⁴ The conductor thermal ratings are based on the methodology of the “IEEE-738 Standard for Calculating the Current Temperature Relationship of Bare Overhead Conductors.”

24. The design, construction and operation of the Project will meet or be better than the requirements specified in the latest revision of the National Electrical Safety Code (“NESC”) and all applicable safety standards established by the Occupational Safety and Health Administration (“OSHA”). All work shall be done in accordance with NESC, OSHA, and any applicable local, state or federal requirements.

25. Consistent with its Engineering Practice EPP-2090, PECO will construct the Project for ground clearances that are a minimum of three feet higher than the required NESC minimum ground clearance for 500 kV lines to reduce magnetic field exposure. In addition, PECO has separated the circuits 160 feet apart to minimize electromagnetic fields in the right-of-way.

IV. DESCRIPTION OF THE PROJECT AREA

26. In order to interconnect the Furnace Run Substation with the existing 500 kV system, PECO proposes to construct approximately 0.5 miles of new 500 kV transmission lines that will traverse Lower Chanceford Township in York County. A survey that identifies the location and the properties crossed by the Project is provided as Attachment 4.

27. Of the total 0.53 miles of new 500 kV transmission lines to be constructed, 280 feet will be located within an existing PECO 500 kV right-of-way and 0.49 miles will be located within a new 350-foot wide right-of-way. The two new 500 kV transmission lines will share a 350-foot wide right-of-way. The two circuits will parallel each other and will be separated by approximately 160 feet. The new 350-foot wide right-of-way is sufficient to accommodate the construction, operation, and maintenance of both new 500 kV circuits.

28. The Project area was selected based on PECO’s analysis of the environmental and land use impacts of six alternatives. PECO’s preferred route, for which siting authority is requested, would require 9.65 acres of right-of-way over land that is currently undeveloped and

composed primarily of wooded areas, except where a small portion of the line would span an agricultural field. The Project will also span Goram Road before it ends within the existing right-of-way for PECO's Peach Bottom-TMI 500 kV Transmission Line. Accordingly, vegetation will need to be removed to build the new 500 kV transmission lines and vegetation management will be required for their on-going maintenance.

29. In areas where vegetation management is required, PECO will apply its "VM-PE-01005 Transmission Vegetation Management Clearance Guidelines Procedure" and "PE-P026 Transmission Vegetation Management Annual Inspection Process" to minimize the potential impacts. Under those procedures, PECO performs vegetation management work along any right-of-way on a five-year cycle that is necessary to prevent encroachment into the minimum clearance distances specified in North American Electric Reliability Corporation Standard FAC-003-4. In addition, the Company inspects vegetation conditions on all of its transmission lines annually to mitigate hazards in between maintenance cycles. Descriptions of PECO's vegetation management practices are provided in Confidential Attachment 5 to this Letter of Notification.

30. The closest airport to the Project area is Baublitz Commercial Airport, which is located approximately 3.3 miles west of the proposed Furnace Run Substation. PECO does not anticipate any interference with airport operations because of the distance from the Project area. PECO will also file any required documentation with the Federal Aviation Administration and the Pennsylvania Department of Transportation, Bureau of Aviation.

31. The Project will not traverse or affect any unique geological, or scenic areas. However, the Project is located within one natural area identified by the Pennsylvania National Heritage Program as Supporting Landscape – Otter Creek, Sawmill Run. This area consists of

woods and seeps that provide habitat for several rare species. PECO will minimize tree clearing within the right-of-way to the extent practicable to mitigate impacts on this natural area.

32. The proposed Project will not affect any state lands, national parks, state parks, local parks, recreational areas or natural landmarks.

33. PECO conducted a review of the online Pennsylvania State Historic Preservation Office (“SHPO”) Bureau for Historic Preservation Cultural Resources Geographic Information System (“CRGIS”) database to determine if cultural resources are located in the Project vicinity. Based on this review, the Project will not cross or impact Natural Register of Historic Places (“NRHP”)-listed or eligible historic resources. A cultural resource with an unevaluated NRHP status (a stone structure) is located within 0.5 mile of the Project site but is not crossed or impacted by the project. The Company will coordinate with the Pennsylvania Historical and Museum Commission (“PHMC”) and comply with any terms and conditions required by the PHMC to avoid, minimize, and mitigate impacts to archaeological or cultural resources that may be located within the Project area.

34. The Project is not expected to have any impacts on communications towers, pipelines or other utilities.

35. PECO retained an environmental consultant to identify and delineate all wetlands and watercourses within the Project area. The Project will aerially span eight wetlands and one stream. PECO will obtain any required soil erosion and sedimentation control approvals and associated National Pollutant Discharge Elimination System (“NPDES”) construction permits from the applicable County Conservation Districts and/or the Pennsylvania Department of Environmental Protection, and will comply with any conditions placed on the permits. In addition, PECO will obtain any necessary permits from the United States Army Corps of

Engineers and will comply with all of the terms and conditions placed on those permits. A copy of the wetland and stream delineation report for the proposed Project, prepared in September 2020 by Stantec Inc. is provided as Attachment 6.

36. No 100-year floodplains are located within the Project area.

37. PECO performed a desktop review of the PNDI database (Project Search ID: PNDI-671837) to obtain information from state and federal agencies regarding endangered and threatened species in close proximity to the proposed Project. The results of this review indicated that no further review was required for consultation with the Pennsylvania Department of Conservation and Natural Resources, the Pennsylvania Fish and Boat Commission, and the Pennsylvania Game Commission. The U.S. Fish and Wildlife Service (“USFWS”) indicated that the federal threatened bog turtle (*Glyptemys muhlenbergii*) is known to exist within York County and requested Phase I bog turtle surveys. PECO retained a qualified bog turtle surveyor to conduct Phase I bog turtle surveys along the right-of-way in July 2019. No potential bog turtle habitat was identified during the Phase I surveys. PECO submitted the Phase I report to the USFWS on July 16, 2019. USFWS also commented that avoidance measures should be implemented to avoid in-stream impacts. The avoidance measures are spanning or going under the waterway and/or avoiding in-stream work, including the installation of permanent or temporary structures, between October 1 and March 31. PECO will implement the measures to avoid impacts to threatened or endangered species. Attachment 7 provides a copy of the final PNDI receipt indicating the responses from the aforementioned agencies.

V. NEGOTIATIONS WITH AFFECTED LANDOWNERS

38. The new right-of-way will traverse four private properties. As depicted on the map appended to this Application as Attachment 4, the route proposed for the Project requires

PECO to obtain rights-of-way and easements across four parcels, all of which are located in Lower Chanceford Township, York County, Pennsylvania:

- (1) Lot 77, owned by David L. Druck and Christine Y. Druck (Tax Parcel No. 34000FN0077) (the “Druck Parcel”);
- (2) Parcel formerly owned by Clarence A. Pyle, formerly part of Lot 77 (no Tax Parcel number has been assigned to this property) (the “Pyle Parcel”);
- (3) Lot 78, owned by Samuel W. Taylor and Kay L. Taylor (Tax Parcel No. 34000FN0078) (the “Taylor Parcel”);⁵ and
- (4) Lot 79, owned by William S. Harbold and Sandra A. Harbold (Tax Parcel No. 34000FN0079) (the “Harbold Parcel”).

39. PECO is currently attempting to voluntarily negotiate and obtain rights-of-way and easements needed for the proposed Project. PECO has reached an agreement to obtain the necessary right-of-way and easement over the Druck Parcel. However, as of the date of this filing, PECO has been unable to negotiate and obtain rights-of-way and easements needed for the proposed Project over the Pyle Parcel, the Taylor Parcel, and the Harbold Parcel. Accordingly, simultaneous with the filing of this Letter of Notification, PECO filed three separate Applications, pursuant to 15 Pa.C.S. 1511(c), seeking a Commission finding and determination that the service to be furnished through its proposed exercise of the power of eminent domain to acquire a right-of-way and easement over portions of the Pyle Parcel, the Taylor Parcel, and the Harbold Parcel for the construction of the connecting transmission lines associated with the

⁵ The Pyle Parcel, the Taylor Parcel, and the Harbold Parcel are shown in blue, red and green, respectively, on the map set forth in Attachment 4. The York County Tax Maps purport to show that the Pyle Parcel is part of the Taylor Parcel. However, when PECO’s surveyor plotted the legal description of the Taylor Parcel, he discovered that it does not in fact include the Pyle Parcel. PECO then engaged in a thorough search for the owner of the Pyle Parcel. PECO engaged a York County law firm to do a title abstract of the Pyle Parcel. Ultimately, PECO found no evidence that the Pyle Parcel has been conveyed to anyone since it was acquired by Clarence A. Pyle in 1918. After further extensive research, PECO identified eleven known heirs of Clarence A. Pyle, who inherited the Pyle Parcel. PECO has sent letters to each of these individuals for whom it was able to find an address. The letter offered to pay fair market value to the rightful owners of the Pyle Parcel as their interest may appear. The Company also published a notice in the York Daily Record and the York Legal Record requesting that any person with an interest in the Pyle Parcel contact PECO.

Project is necessary or proper for the service, accommodation, convenience, or safety of the public.

40. Issues related to the finding and determination requested in those condemnation Applications and the necessity for the Project are closely interrelated. Therefore, pursuant to 52 Pa. Code § 57.75(i)(1), PECO requests that the condemnation Applications be consolidated and considered together with this Letter of Notification for the Project for the purpose of conducting hearings, if necessary, and issuance of a final decision.

VI. NOTICE

41. PECO has provided information regarding the Project to representatives of Lower Chanceford Township and York County. These entities have not objected to the proposed Project to date.

42. Copies of this Letter of Notification will be served on the governmental agencies, municipalities, and other public entities in accordance with 52 Pa. Code § 57.72(d)(3).

43. Copies of this Letter of Notification will be served on all record owners of land subject to the right-of-way and easement in accordance with 52 Pa. Code § 57.72(d)(3) and the known heirs of Clarence A. Pyle who inherited the Pyle Parcel. In addition, PECO will publish a notice of filing in the York Daily Record and the York Legal Record. Should the Commission conclude that further notice of this Letter of Notification is appropriate, PECO will provide such additional notice as directed by the Commission.

VII. LETTER OF NOTIFICATION

44. PECO is proceeding by means of a Letter of Notification, instead of a full Application, pursuant to the Commission's regulations at 52 Pa. Code § 57.72(d)(1)(vi).⁶

⁶ A copy of the checklist developed by the Commission's Bureau of Technical Services with references to this Letter of Notification is provided as Attachment 8.

45. The proposed Project qualifies for use of a Letter of Notification because the new 500 kV transmission lines will be less than two miles.

46. This Letter of Notification is filed on the date set forth below. As provided in 52 Pa. Code § 57.72(d)(5), the Commission will review and, by order, approve or disapprove this Letter of Notification. If the Commission approves this Letter of Notification the proposed Project will be constructed as proposed herein without the formal application process set forth at 52 Pa. Code §§ 57.71 et seq.

VIII. CONCLUSION

WHEREFORE, PECO Energy Company respectfully requests Pennsylvania Public Utility Commission approval to site and construct approximately 0.5 miles of 500 kV transmission lines in Lower Chanceford Township, York County, Pennsylvania as explained above and in the Attachments hereto.

Respectfully submitted,



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Dated: December 16, 2020

Counsel for PECO Energy Company

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**LETTER OF NOTIFICATION OF PECO :
ENERGY COMPANY, FILED :
PURSUANT TO 52 PA. CODE :
CHAPTER 57 SUBCHAPTER G, :
FOR APPROVAL TO SITE AND : DOCKET NO. A-2020-_____**
**CONSTRUCT 0.5 MILES OF :
TRANSMISSION LINES IN LOWER :
CHANCEFORD TOWNSHIP, YORK :
COUNTY, PENNSYLVANIA TO :
INTERCONNECT TO THE :
TRANSMISSION GRID THE NEW 500- :
230 KV FURNACE RUN SUBSTATION :
PROPOSED BY TRANSOURCE :
PENNSYLVANIA, LLC :**

VERIFICATION

I, Brian D. Crowe, Vice President, Transmission & Substations, of PECO Energy Company, hereby state that the facts set forth in the above-captioned Letter of Notification are true and correct to the best of my knowledge, information and belief, and that I expect to be able to prove the same at a hearing if held in this matter. I understand that the statements herein are made subject to the penalties of 18 Pa.C.S. § 4904 (relating to unsworn falsification to authorities).

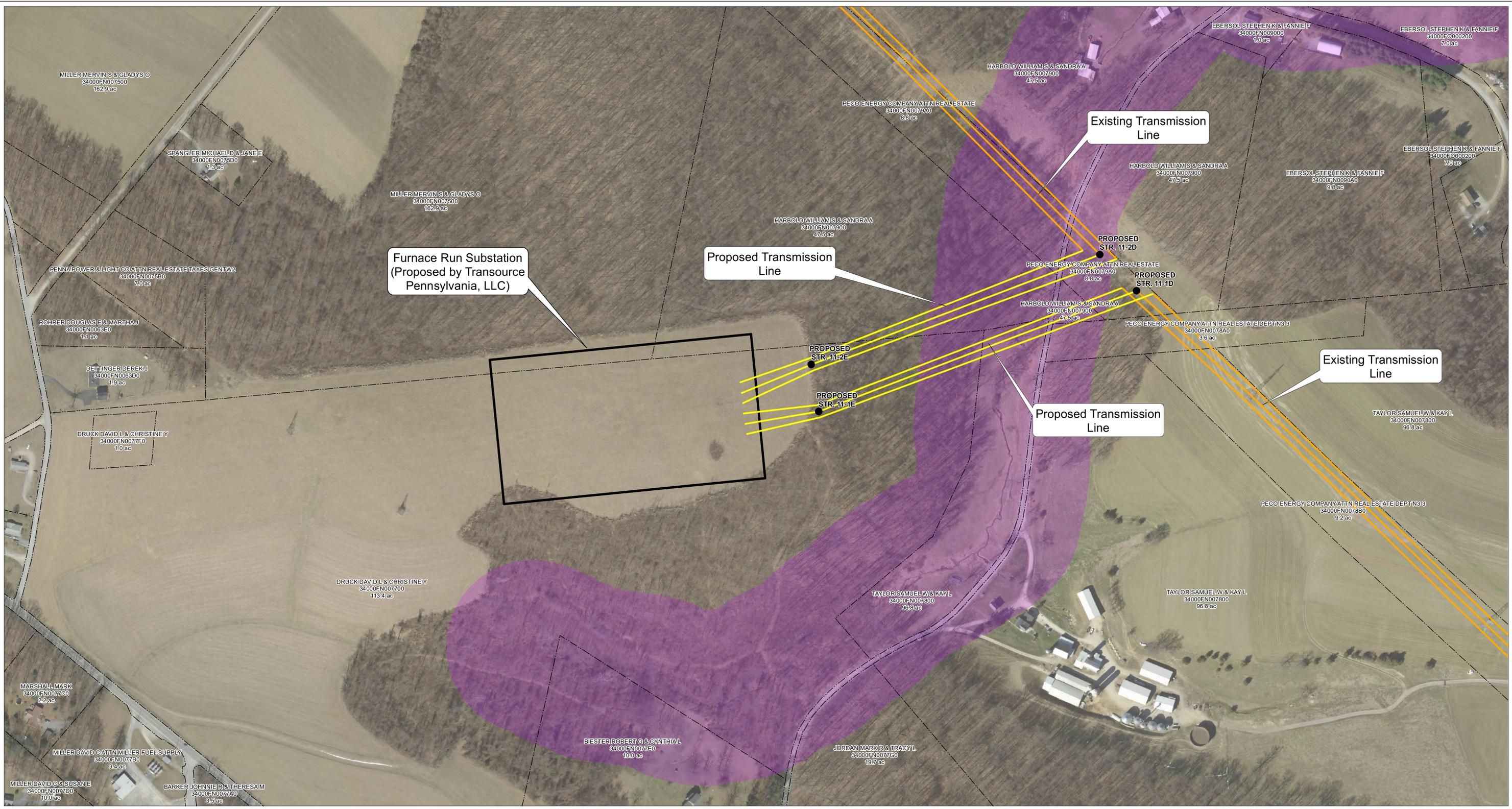


Brian D. Crowe
Vice President, Transmission & Stations

Dated: December 16, 2020

ATTACHMENT 1

ATTACHMENT 2



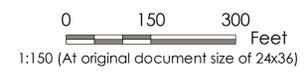
- Legend**
- Proposed Transmission Pole
 - Proposed Transmission Line
 - Existing Transmission Line
 - ▭ Furnace Run Substation (Proposed by Transource Pennsylvania, LLC)
 - Natural Heritage Areas: Supporting Landscape

Sources:

- Parcel Boundaries: York County Assessment, YCPC

Notes

1. Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
2. Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community



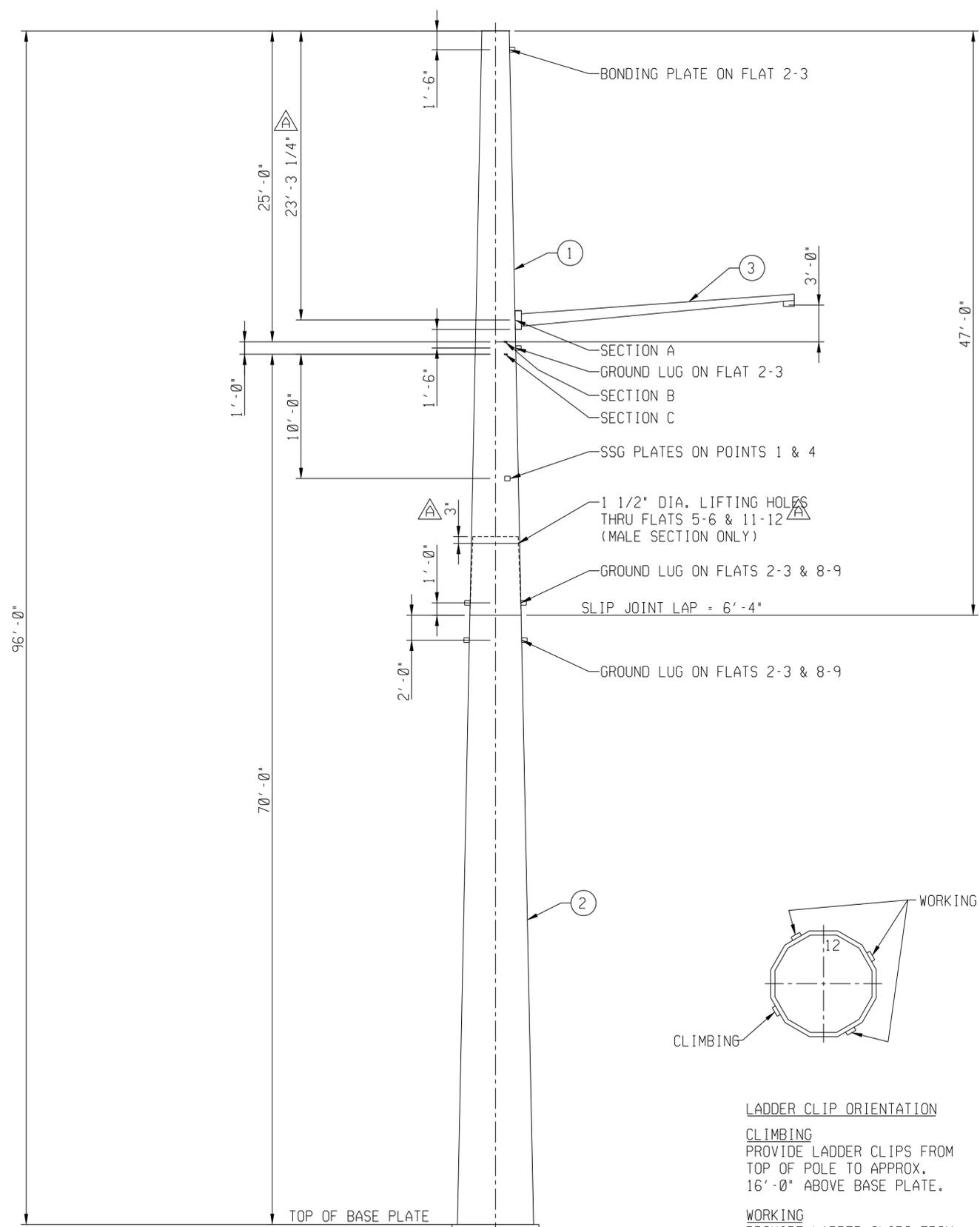
Project Location 213403067
 Lower Chanceford Township,
 York County, PA
 Prepared by GWC on 10/5/2020
 Technical Review by MN on 10/5/2020
 Independent Review by DN on 10/5/2020

Client/Project
 Furnace Run –
 PECO 500 kV Interconnection Project

Attachment No.
 2
Title
 Aerial Project Map

Disclaimer: Stantec assumes no responsibility for data supplied in electronic format. The recipient accepts full responsibility for verifying the accuracy and completeness of the data. The recipient releases Stantec, its officers, employees, consultants and agents, from any and all claims arising in any way from the content or provision of the data.

ATTACHMENT 3

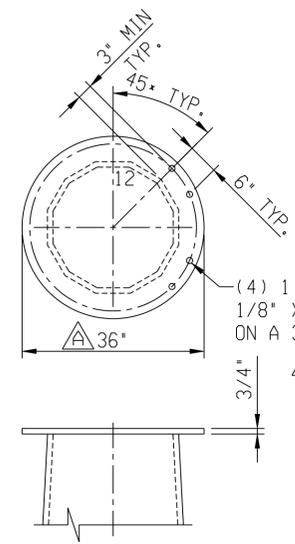


MAJOR COMPONENT INFORMATION				
ITEM	MARK	QTY.	DESCRIPTION	WT. EACH
1	3004	1	SHAFT ASSEMBLY, 47'-0" LONG	8,500
2	3005	1	SHAFT ASSEMBLY, 55'-4" LONG	27,200
3	A D	1	ARM ASSEMBLY	650
TOTAL WEIGHT				36,350

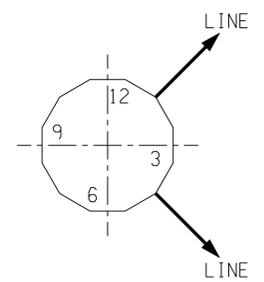
STRUCTURE INFORMATION	
BILLABLE	REV73AAT
POLE NO.	7-3A, 7-4C
HGT. ABOVE GRND. LINE	96'-0"
TOP DIA.	26 7/16"
GRND. LINE DIA.	73 25/32"
TAPER	0.50000 IN./FT.

FASTENER INFORMATION		
MARK	QTY.	DESCRIPTION
72940	8	NUT, 1" DIA.
78266	8	BOLT, 1" DIA. X 4", (8/ARM)

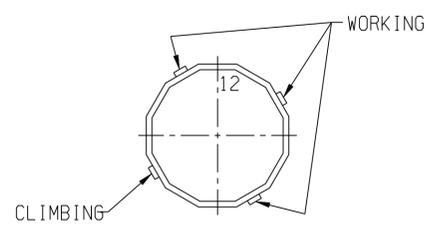
SHAFT INFORMATION	
ITEM 1, SHAFT ASSEMBLY	
TUBE SECTION 1:	
LENGTH @ THICKNESS	27'-0" @ 11/32"
TOP DIA / BOTTOM DIA	26 7/16" / 39 15/16"
TUBE SECTION 2:	
LENGTH @ THICKNESS	20'-0" @ 15/32"
TOP DIA / BOTTOM DIA	40 7/32" / 50 7/32"
ITEM 2, SHAFT ASSEMBLY	
TUBE SECTION 3:	
LENGTH @ THICKNESS	20'-0" @ 9/16"
TOP DIA / BOTTOM DIA	45 31/32" / 55 31/32"
TUBE SECTION 4:	
LENGTH @ THICKNESS	20'-0" @ 5/8"
TOP DIA / BOTTOM DIA	56 1/8" / 66 1/8"
TUBE SECTION 5:	
LENGTH @ THICKNESS	15'-4" @ 5/8"
TOP DIA / BOTTOM DIA	66 1/8" / 73 25/32"
ITEM 3, ARM ASSEMBLY	
LENGTH @ THICKNESS	22'-3" @ 7/32"
SMALL DIA / LARGE DIA	6" / 12"



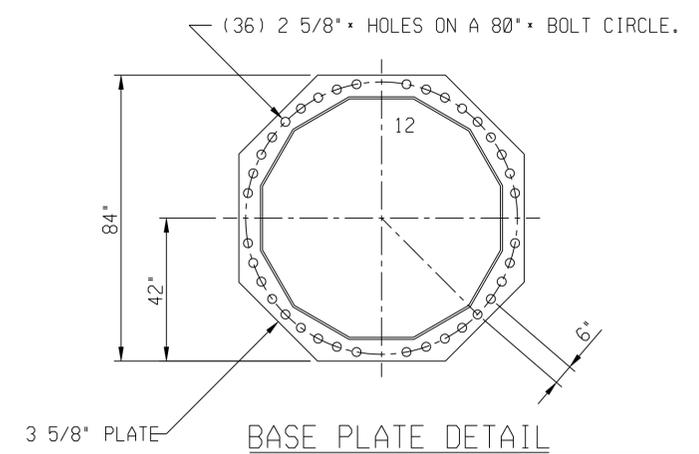
CAP PLATE DETAIL



POLE ORIENTATION



LADDER CLIP ORIENTATION
CLIMBING
 PROVIDE LADDER CLIPS FROM TOP OF POLE TO APPROX. 16'-0" ABOVE BASE PLATE.
WORKING
 PROVIDE LADDER CLIPS FROM TOP OF POLE TO APPROX. 10'-0" BELOW TOP OF POLE AND FROM APPROX. 20'-0" BELOW TOP OF POLE TO 35'-0" BELOW TOP OF POLE.



BASE PLATE DETAIL

CUSTOMER: SEE SHEET 14362B002 FOR DETAILS

REV.	DESCRIPTION	DRFT/DATE	ENGINEER
A	REVISED DIMENSION AND ARM LETTER ADDED LIFTING HOLES	RC/02-25-02	ED ANTAR

CUSTOMER: PECO ENERGY COMPANY
CUSTOMER P.O. NO:1039006
JOB NO: 14362
DRAWN/DATE: RC/02-08-02
CHECKED/DATE: MF/02-14-02
ENGINEER: ED ANTAR

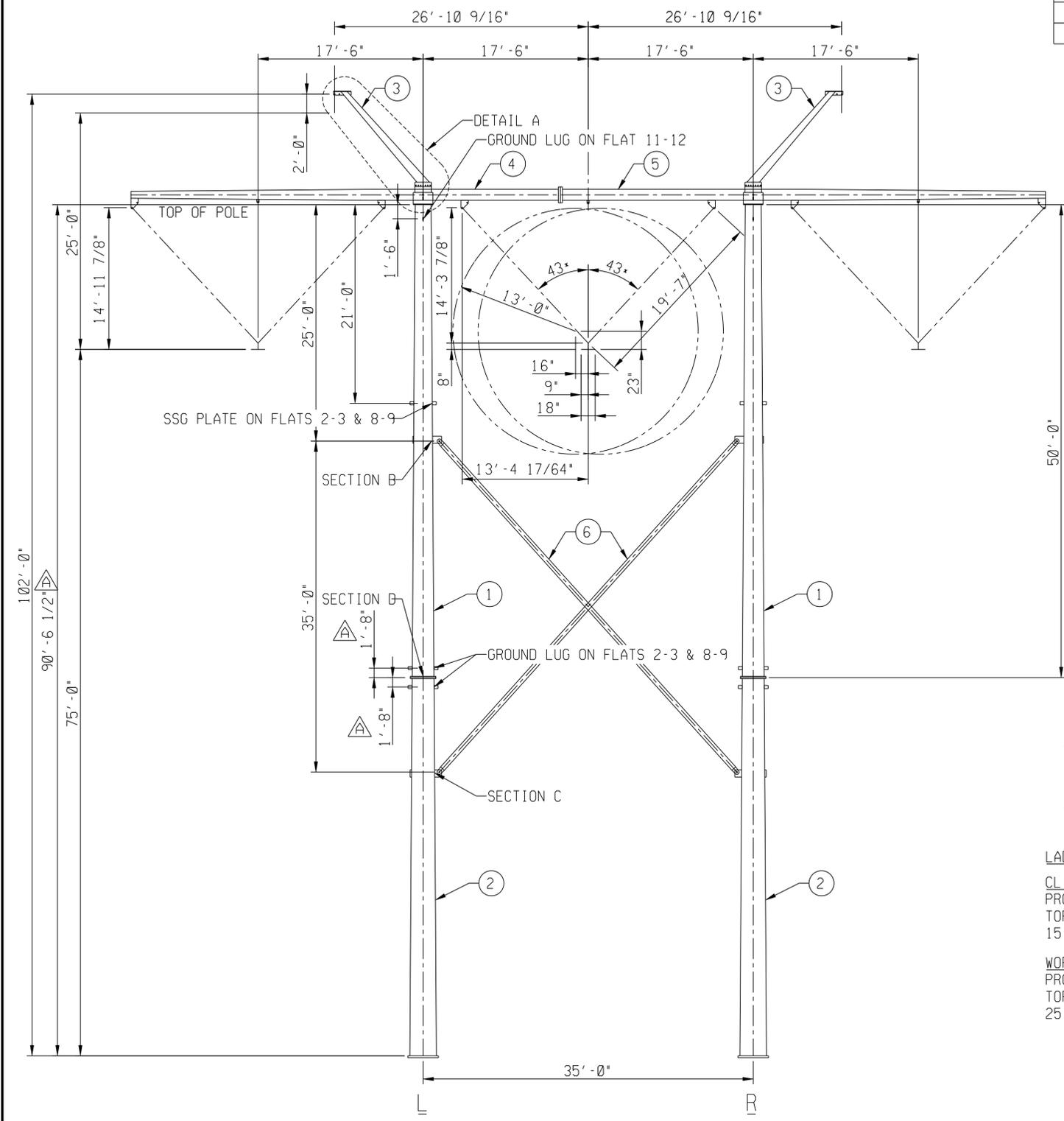
Thomas&Betts COPYRIGHT 2002
STEEL STRUCTURES GROUP
 96'-0" DEADEND LOOP - ROCK SPRINGS
 POLE NO. 7-3A, 7-4C
 STRUCTURE ERECTION 14362B001

PLOT DATE: 04-03-02

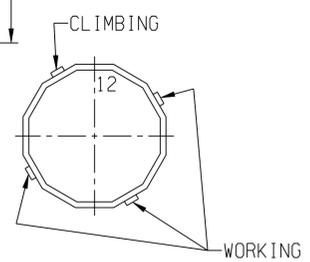
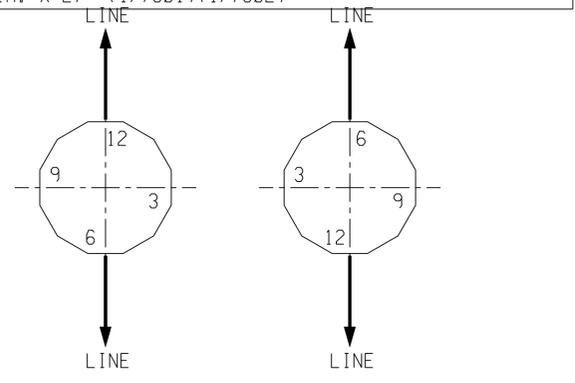
MAJOR COMPONENT INFORMATION				
ITEM	MARK	QTY.	DESCRIPTION	WT. EACH
1	3001	2	SHAFT ASSEMBLY, 50'-0" LONG	4,200
2	3002	2	SHAFT ASSEMBLY, 40'-6 1/2" LONG	5,300
3	A	2	ARM ASSEMBLY	450
4	7601	1	CROSSARM ASSEMBLY	4,300
5	7602	1	CROSSARM ASSEMBLY	4,500
6	3201	2	CROSSBRACING ASSEMBLY	650
TOTAL WEIGHT				30,000

STRUCTURE INFORMATION	
BILLABLE	ST75ALAT
POLE NO.	7-5AL, 7-5AR
HGT. ABOVE GRND. LINE	90'-6 1/2" ^A
TOP DIA.	21"
GRND. LINE DIA.	35 3/32" ^A
TAPER	0.15500 IN./FT.

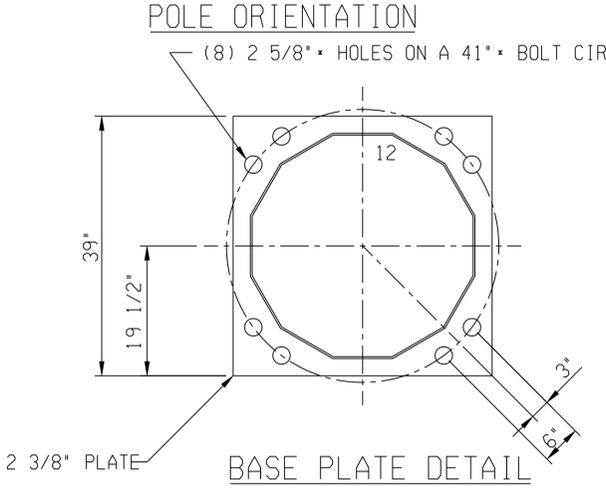
SHAFT INFORMATION	
ITEM 1, SHAFT ASSEMBLY	
TUBE SECTION 1:	
LENGTH @ THICKNESS	35'-0" @ 1/4"
TOP DIA / BOTTOM DIA	21" / 26 13/32"
TUBE SECTION 2:	
LENGTH @ THICKNESS	14'-10 1/2" @ 1/4"
TOP DIA / BOTTOM DIA	26 13/32" / 28 23/32"
ITEM 2, SHAFT ASSEMBLY	
TUBE SECTION 3:	
LENGTH @ THICKNESS	40'-5" @ 9/32"
TOP DIA / BOTTOM DIA	28 27/32" / 35 3/32" ^A
ITEM 3, ARM ASSEMBLY	
LENGTH @ THICKNESS	9'-4 1/16" @ 1/4"
SMALL DIA / LARGE DIA	6" / 12"
ITEM 4, CROSSARM ASSEMBLY	
TUBE SECTION 1:	
LENGTH @ THICKNESS	25'-8 5/8" @ 11/32"
SMALL DIA / LARGE DIA	15" / 21"
TUBE SECTION 2:	
LENGTH @ THICKNESS	20'-10 1/8" @ 13/32"
SMALL DIA / LARGE DIA	21 1/8" / 21 1/8"
ITEM 5, CROSSARM ASSEMBLY	
TUBE SECTION 1:	
LENGTH @ THICKNESS	24'-4 13/32" @ 13/32"
SMALL DIA / LARGE DIA	21 1/8" / 21 1/8"
TUBE SECTION 2:	
LENGTH @ THICKNESS	25'-8 5/8" @ 11/32"
SMALL DIA / LARGE DIA	15" / 21"
ITEM 6, CROSSBRACING ASSEMBLY	
LENGTH @ THICKNESS	46'-1 1/2" @ 3/16"
SMALL DIA / LARGE DIA	7" / 7"



FASTENER INFORMATION		
MARK	QTY.	DESCRIPTION
70678	4	NUT, 1 1/2" DIA.
70860	26	STEPBOLT, 3/4" DIA. X 6 3/4"
72938	2	NUT, 1 3/4" DIA.
72940	75	NUT, 1" DIA.
74269	2	FLATWASHER, 1" DIA. (2/74936)
74936	1	BOLT, 1" DIA. X 15", (1/CENTER 3201)
74937	14	BOLT, 1" DIA. X 19, (7/ARM A)
76571	4	BOLT, 1 1/2" DIA. X 4" (2/3201)
78271	40	BOLT, 1" DIA. X 5 1/4" (20/POLE FLANGE CONNECTION)
78274	20	BOLT, 1" DIA. X 6" (20/CROSSARM FLANGE CONNECTION)
74567	2	BOLT, 1 3/4" DIA. X 27" (1/7601)(1/7602)



LADDER CLIP ORIENTATION
CLIMBING
 PROVIDE LADDER CLIPS FROM TOP OF POLE TO APPROX. 15'-0" ABOVE BASE PLATE.
WORKING
 PROVIDE LADDER CLIPS FROM TOP OF POLE TO APPROX. 25'-0" BELOW TOP OF POLE.



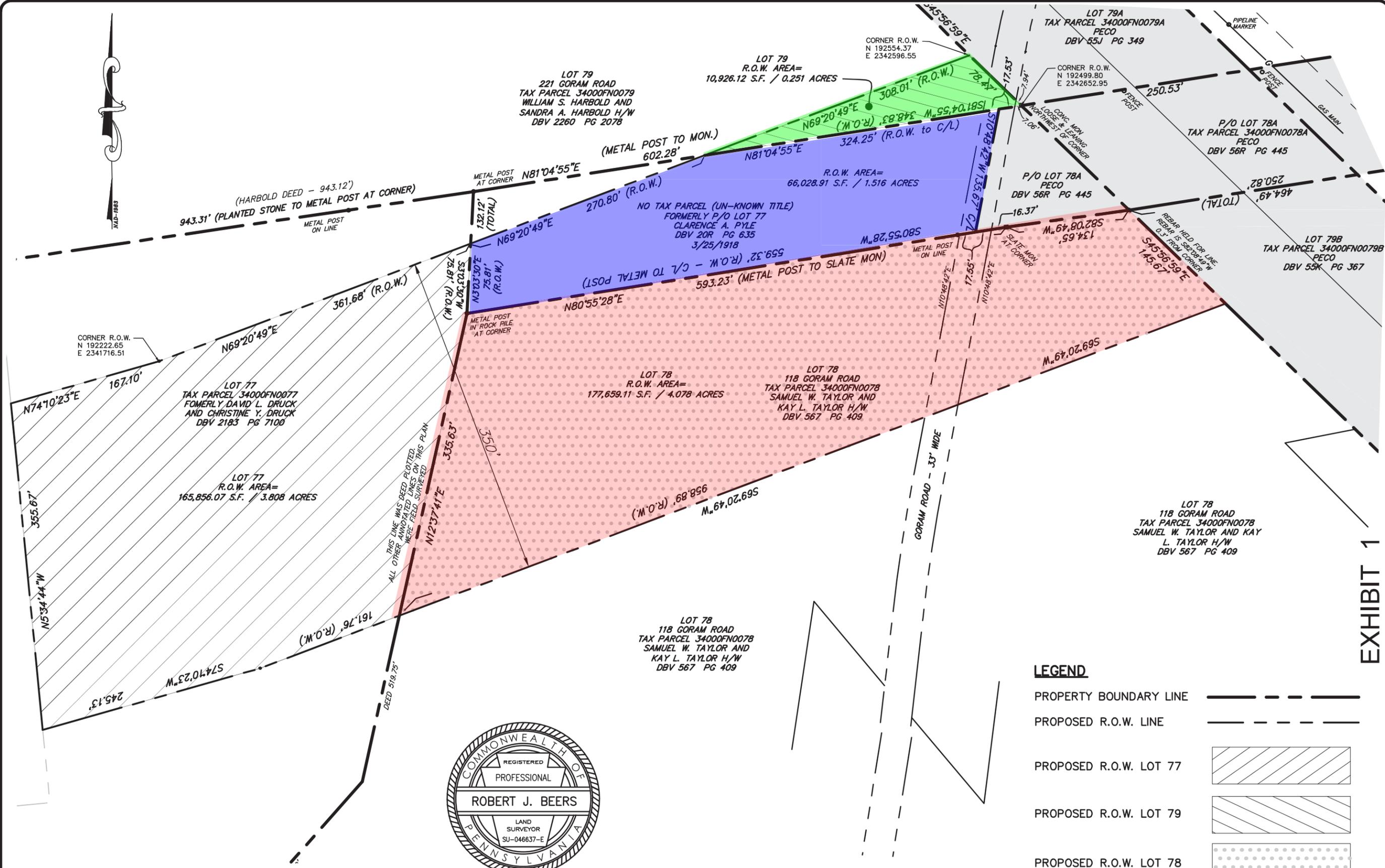
CUSTOMER: SEE SHEET 14362B008, B009 FOR DETAILS

REVISION	DESCRIPTION	DRFT/DATE	ENGINEER	ED AN TAR
A	REVISED DIMENSIONS & TUBE LENGTHS	RC/02-25-02	CHECKED/DATE	MF/02-14-02

Thomas & Betts COPYRIGHT 2002
STEEL STRUCTURES GROUP
 90'-6 1/2" SUSPENSION H-FRAME
^A LOOP - ROCK SPRINGS
 POLE NO. 7-5AL, 7-5AR
 STRUCTURE ERECTION 14362B007

PLOT DATE: 04-03-02

ATTACHMENT 4



CORNER R.O.W.
N 192222.65
E 2341716.51

LOT 77
TAX PARCEL 34000FN0077
FORMERLY DAVID L. DRUCK
AND CHRISTINE Y. DRUCK
DBV 2183 PG 7100

LOT 77
R.O.W. AREA=
165,856.07 S.F. // 3.808 ACRES

LOT 78
R.O.W. AREA=
177,659.11 S.F. // 4.078 ACRES

LOT 78
118 GORAM ROAD
TAX PARCEL 34000FN0078
SAMUEL W. TAYLOR AND
KAY L. TAYLOR H/W
DBV 567 PG 409

LOT 78
118 GORAM ROAD
TAX PARCEL 34000FN0078
SAMUEL W. TAYLOR AND
KAY L. TAYLOR H/W
DBV 567 PG 409



Robert J. Beers
ROBERT J. BEERS, P.L.S.

2020/10/27
DATE

SU-046637-E
LICENSE NO.

LEGEND

- PROPERTY BOUNDARY LINE
- PROPOSED R.O.W. LINE
- PROPOSED R.O.W. LOT 77
- PROPOSED R.O.W. LOT 79
- PROPOSED R.O.W. LOT 78
- EXISTING PECO R.O.W.

EXHIBIT 1

FURNACE RUN PECO 500 KV INTERCONNECTION PROJECT
TAX PARCELS 34000FN0077, 34000FN0078 & 34000FN0079
GORAM ROAD, LOWER CHANCEFORD TOWNSHIP
YORK COUNTY, PENNSYLVANIA

DATE: 10/27/2020	DSGNL:
SCALE: 1"=100'	CHK: RJB
DRAWN: RJB	APPRD:
JOB: 1015319.000	P. MGR: RJB
COPYRIGHT 2020	

SHEET: 1 OF 1

EXH-1

610.398.0904
barryisett.com

BARRY ISETT & Associates
INC. ENGINEERING, PLANNING AND CONSTRUCTION

DATE:	
REVISIONS:	

ATTACHMENT 5

**Attachment 5 contains confidential information and was filed in
accordance with 52 Pa. Code 1.32(b)(4)**

ATTACHMENT 6

**PECO ENERGY COMPANY,
Furnace Run Interconnection 500kV
Transmission Line Project
Waters of the US DELINEATION REPORT**

Prepared for:
PECO Energy Company (PECO)



Prepared by:
Stantec Consulting Services, Inc.
400 Davis Drive, Suite 400
Plymouth Meeting, PA 19462

September 15, 2020
Revision: 0

**PECO ENERGY COMPANY,
FURNACE RUN INTERCONNECTION 500KV TRANSMISSION LINE PROJECT
WATERS OF THE US DELINEATION REPORT**

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Acronyms List

Abbreviation	Definition
CWA	Clean Water Act
DCNR	Pennsylvania Department of Conservation and Natural Resources
DEC	DuBois Environmental Consultants
FEMA	Federal Emergency Management Agency
Ft	Foot/feet
GIS	Global Information System
GPS	Global Positioning Systems
HUC	Hydrologic Unit Code
NHD	National Hydrography Dataset
NRCS	Natural Resources Conservation Services
NWI	National Wetlands Inventory
OHWM	Ordinary High Water Mark
PADEP	Pennsylvania Department of Environmental Protection
PFBC	Pennsylvania Fish and Boat Commission
PECO	PECO Energy Company
PNHP	Pennsylvania Natural Heritage Program
PNDI	Pennsylvania National Diversity Index
ROW	Right-of-Way
TOB	Top of Bank
US	United States of America
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
WOUS	Waters of the United States

**PECO ENERGY COMPANY,
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WATERS OF THE US DELINEATION REPORT**

1.0 Introduction

Stantec Consulting Services, Inc. (Stantec) has prepared this Waters of the United States (WOUS) delineation report on behalf of PECO Energy Company (PECO) for the Furnace Run Interconnection 500kV Transmission Line Project (Project), located in Lower Chanceford Township, York County, Pennsylvania. The proposed Project includes the installation of a 500kV Transmission Line Tap between the existing Furnace Run 5007 right-of-way (ROW) and the proposed Furnace Run substation associated with the Independence Energy Connection East (IEC East) Project proposed by Transource, L.L.C. (Transource). The proposed PECO 500kV line will begin at the new Furnace Run substation (39.852774, -76.422242) and will continue approximately 1,450 feet to the east, where it will connect to the existing PECO Furnace 5007 transmission line between Poles 11-1 and 11-2. The Project area will intersect Goram Road between Delta Road and Bare Road. The proposed ROW will be approximately 350 feet in width and the new cables will be supported by steel monopoles. On March 26, 2019 and July 1, 2019, Stantec performed WOUS delineation within the Project area.



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2.0 Wetlands

2.1.1 Federal Wetland Definition

On April 21, 2020, the U.S. Environmental Protection Agency (EPA) and the Department of the Army (Army) published the Navigable Waters Protection Rule in the *Federal Register* to finalize a revised definition of “Waters of the United States” under the Clean Water Act. For the first time, the agencies have streamlined the definition so that it includes four (4) simple categories of jurisdictional waters, provides clear exclusions for many water features that traditionally have not been regulated, and defines terms in the regulatory text that have never been defined before. Congress, in the Clean Water Act, explicitly directed the Agencies to protect “navigable waters.” The Navigable Waters Protection Rule regulates the nation’s navigable waters and the core tributary systems that provide perennial or intermittent flow into them. This final rule became effective on June 22, 2020. The revised definition identifies four (4) clear categories of waters that are federally regulated under the Clean Water Act: (i) the territorial seas and traditional navigable waters, like the Atlantic Ocean and the Mississippi River; (ii) perennial and intermittent tributaries, (iii) certain lakes, ponds, and impoundments; and (iv) wetlands that are adjacent to jurisdictional waters.

These four (4) categories protect the nation’s navigable waters and the core tributary systems that flow into those waters.

Wetlands are defined by the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the definition of wetlands is:

Wetlands are those areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

This definition addresses three (3) characteristics of wetlands: (i) hydrophytic vegetation, (ii) hydric soils, and (iii) wetland hydrology.

2.1.2 State Wetland Definition

For freshwater wetlands, the Pennsylvania Department of Environmental Protection (PADEP) has adopted the definitions found in the *1987 Corps of Engineers Wetlands Delineation Manual*.

Wetlands are those areas that are inundated or saturated by surface or groundwater at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas.

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2.1.3 Wetland Classification

Wetlands were classified according to *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). In this classification system, wetland habitats are divided into five major systems including: (i) marine, (ii) estuarine, (iii) lacustrine, (iv) palustrine, and (v) riverine. Each of these systems is further divided into subsystems, classes, and subclasses.

The *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region Version 2.0 (Regional Supplement)* as defined by the USACE will be utilized to help determine hydrology and soils determinations for this region. The National Wetland Plant List (NWPL): 2016 Update of Wetland Ratings will be used to determine wetland indicator status ratings and their rating categories, as described in the National List of Plant Species that Occur in Wetlands (Reed 1988).

2.2 WATERBODIES

2.2.1 Waterbodies Definition

Waterbodies include ephemeral, intermittent, and perennial streams, ditches, and open water bodies. Ditches were classified as waterbodies when there were obvious signs of water movement at some point through the year and showed evidence of bed/banks, flow, scour, and/or ordinary high watermark (OHWM).

2.2.2 Waterbodies Classification

Streams

Flow regime for streams was defined as ephemeral, intermittent, or perennial. Ephemeral streams are defined as those features with an obvious bed and bank that are inundated following spring thaw and after periods of rainfall. Otherwise, ephemeral streams remain dry. Intermittent streams are defined as those features with an obvious bed and bank and are likely to have some water present throughout the growing season (typically a minimum of three months within a year). These features will typically show evidence of sorting or stratification of materials. Perennial streams have an obvious bed and bank and have continuous presence of water as well as evidence of aquatic life (fauna and flora). Ephemeral streams, swales, gullies, and rills are no longer considered jurisdictional features.

Ditches

The term ditch means a constructed or excavated channel used to convey water and are not considered jurisdictional features.

Open Water Bodies (Lakes and Ponds, and Impoundments)

The term lakes and ponds, and impoundments of jurisdictional waters means standing bodies of open water that contribute surface water flow to jurisdictional waters in a typical year. A lake,



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pond, or impoundment of a jurisdictional water does not lose its jurisdictional status if it contributes surface water flow to a downstream jurisdictional water in a typical year through a channelized non-jurisdictional surface water feature, through a culvert, dike, spillway, or similar artificial feature, or through a debris pile, boulder field, or similar natural feature. A lake or pond, or impoundment of a jurisdictional waters is also jurisdictional if it is inundated by flooding from a jurisdictional feature in a typical year.

Artificial lakes and ponds, including water storage reservoirs and farm, irrigation, stock watering, and log cleaning ponds, constructed or excavated in upland or in non-jurisdictional waters, so long as those artificial lakes and ponds are not impoundments of jurisdictional waters are not jurisdictional features.



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3.0 Methods

3.1 DESKTOP REVIEW

Prior to completing a site visit, Stantec conducted a desktop survey of the Project area to ascertain the potential for observing regulated resources and WOUS in the Project area. Desktop studies do not provide adequate information to make regulatory determinations, but they can provide valuable information on a given site. The U.S. Geological Survey (USGS) topographic and National Hydrography Data (NHD), the U.S. Fish and Wildlife Service's (USFWS) National Wetlands Inventory (NWI) map, U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil survey, Pennsylvania Natural Heritage Program's (PNHP) eMap PA webmap service, Federal Emergency Management Agency (FEMA), and aerial photography were reviewed to assess the likelihood of occurrence and probable location of wetlands and waterways within the proposed Project area.

3.2 ON-SITE IDENTIFICATION

Following this background review, Stantec performed a wetland delineation in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement*. Wetland boundaries were surveyed by Barry Isett & Associates.

The objectives of this effort were to: (i) characterize the vegetation, (ii) classify the soils, (iii) inspect hydrology, and (iv) based on these data, assess whether potential WOUS were present at the proposed construction locations. Wetland determination data forms were completed at sample point locations within each wetland identified and within adjacent upland communities.

3.2.1 Vegetation Methodology

A thorough walk-over reconnaissance of the entire site was conducted on July 1, 2019, and a vegetation inventory (Appendix B) was compiled as an initial guide to locating wetlands. The vegetation in the field is identified and evaluated for potential wetland vegetation indicators specific to the *Regional Supplement* as defined by the USACE. Scientific names and wetland indicator statuses for the vegetation identified conform to those listed in the National Wetland Plant List (NWPL): 2016 Update of Wetland Ratings.

Wetland indicator status ratings and their rating categories, as described in the National List of Plant Species that Occur in Wetlands (Reed 1988).



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Table 1: Wetland Indicator Status Definitions

Indicator status (abbreviation)	% Occurrence in Wetlands
Obligate (OBL). Occur almost always under natural conditions in wetlands	99%
Facultative Wetland (FACW). Usually occur in wetlands but occasionally found in non-wetlands	67-99%
Facultative (FAC). Equally likely to occur in wetlands and non-wetlands.	34-66%
Facultative Upland (FACU). Usually occur in non-wetlands but occasionally found in wetlands.	1-33%
Upland (UPL). Occur almost always under natural conditions in non-wetlands in the region specified.	1%

In addition, unofficial statuses that were deemed applicable to this delineation include the following.

- Not Listed (NL) – This was applied to vascular plants that are not listed as hydrophytes in any region, and therefore are not included on the NWPL. These species are entered as UPL plants on wetland determination data forms.
- Not Applicable (NA) – This was applied to plants that were not identified to species level, as well as to those species that are non-vascular or parasitic and by definition not included on the NWPL.

Hydrophytic (wetland) vegetation communities were determined to be present when: 1) all of the dominant species were FACW and/or OBL (Rapid Test for Hydrophytic Vegetation); 2) greater than 50 percent of the dominant species' indicator statuses were FAC, FACW, or OBL (Dominance Test); and/or 3) when the calculated prevalence indices were equal to or less than 3.0.

3.2.2 Soils

The NRCS Soil Surveys for York County and Web Soil Survey were consulted to assess soil types within the Project location during the background research of the Project. Hydric soils indicators established in the *Manual, Regional Supplement, and Field Indicators of Hydric Soils in the United States, Version 7.0* (USDA-NRCS, 2010) were used to determine the presence of characteristic soil morphologies resulting from prolonged saturation and/or inundation.

In the field, soils were sampled using an open-face handheld soil auger to a depth of at least twelve inches or a layer of refusal was encountered. The soil color was described using a *Munsell Soil-Color Chart* which characterizes the soil color based on the hue, value, and the chroma of the soil horizon. Each distinct soil horizon was described, including the soil texture, the presence, percentage, and type of redoximorphic features, and the depth of the soil horizon. The

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descriptions of the soil profiles are listed on the Wetland Determination Data Forms for each sampling plot.

3.2.3 Hydrology

The presence, potential presence, or absence of wetland hydrology was determined in accordance with the indicators presented in the Corps *Regional Supplement*. These indicators are categorized into 17 primary and 12 secondary indicators within the four groups outlined on the data sheets.

The hydrology evaluation for wetlands was conducted by visual clues of primary and secondary wetland hydrological indicators including surface water, high water table, soil saturation, water marks, drift lines, sediment deposits, algal mat, iron deposits, inundation, water stained leaves, aquatic fauna, true aquatic plants, hydrogen sulfide odor, oxidized rhizospheres, presence of reduced iron, recent iron reduction in filled soils, thin muck surface, and others. Secondary indicators include surface soil cracks, sparsely vegetated concave surface, drainage patterns, moss trim lines, dry season water table, crayfish burrows, saturation visible on aerials imagery, stunted or stressed plants, geomorphic position, shallow aquitard, microtopographic relief, FAC neutral test and others.

3.3 POST FIELD REVIEW

Upon completion of the site reconnaissance at the Project location, data collected is post-processed into a report deliverable format. The post-processing of the data includes the wetland survey. Photographs and field notes taken at the Project location are downloaded and scanned and saved in Project folders on internal servers.



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4.0 Background Research

4.1 USGS AND NHD

A review of the USGS NHD Bureau of Topographic and Geologic Survey GIS data and the USGS StreamStats web-based mapping service depicts Furnace Run waterway flowing from south to north, parallel and west of Goram Road crossing the proposed ROW. The drainage area of Furnace Run at its intersection with the Project area is approximately 307 acres.

USGS data for the Project area and surroundings is shown on Figure 1 provided in Appendix A.

4.2 NWI MAPS

A review of the NWI maps was conducted for the entire Project area. Furnace Run is mapped through the Project area as a linear wetland and labeled as both a 0.54-acre PEM5A and a 0.47 acre PFO1A in different locations. The formal classification by NWI using the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et. al. 1979) of PEM5A is P- Palustrine, EM- Emergent, 5- *Phragmites australis*, and A- Temporarily Flooded. The formal classification of PFO1A is P- Palustrine, FO- Forested, 1- Broad Leaved Deciduous, and A- Temporarily Flooded.

NWI data for the Project area and surroundings is shown on Figure 2 provided in Appendix A.

4.3 NRCS SOILS

Based upon a review of the NRCS Web Soil Survey mapping tool, the Project area, and surrounding existing transmission line ROW corridor is comprised of five (5) soil map units summarized in the table below.

According to the Web Soil Survey, the parent material of the mapped soils consists of channery silt loam derived from weathered mica schist, sedimentary and metamorphic rock. The NRCS soils map units of the Project area and surroundings is shown on Figure 2 provided in Appendix A.

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Table 2: Soil Mapping Unit

Map Unit Symbol	Map Unit Name	Approximate Acres within PECO ROW	Hydrologic Soil Group	NRCS Listed Hydric Soil (Yes or No)
Cm	Codorus silt loam	1.7	C	No
GbB	Glenelg Channery loam, 3 to 8 percent slopes	0.3	B	No
MOC	Mt. Airy and Manor soils, 8 to 15 percent slopes	2.3	C	No
MOD	Mt. Airy and Manor soils, 15 to 25 percent slopes	4.2	C	No
MRF	Mt. Airy and Manor soils, 25 to 60 percent slopes, extremely stony	5.8	C	No

4.4 PNHP MAPS

A review of the PNHP maps was conducted for the entire Project area. The PNHP designates areas containing one or more plants or animals of concern at state or federal levels, exemplary natural communities, or exceptional native diversity as Natural Heritage Areas (NHAs). NHAs include both the immediate habitat and surrounding lands important in the support of these biological elements. The areas are mapped according to their sensitivity to human activities, they are given one of two designations:

- Core Habitat – areas delineate essential habitat that cannot absorb significant levels of activity without substantial impact to the elements of concern.
- Supporting Landscape – areas maintain vital ecological processes or secondary habitat that may be able to accommodate some types of low-impact activities.

Within the Project area, Furnace Run is mapped as a perennial tributary to Sawmill Run and crosses the PECO Project ROW. Furnace Run is designated as a Cold Water Fishes (CWF), migratory fishes (MF) waterway within the Muddy Run-Susquehanna River watershed and can support natural trout reproduction, Chapter 93 Designated Stream. Three wetlands were depicted in the Project area; one PFO1A that is approximately 0.6 acres, a second PFO1A that is approximately 0.5 acres and one PEM5A that is approximately 0.5 acres. Portions of the Project area are mapped as a part of the Otter Creek, Sawmill Run NHA Supporting Landscape Area. Another NHA lies approximately one mile southwest of the Project area; North Branch Muddy Creek NHA Core Habitat Area. The

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Project area also lies approximately 0.5 miles southwest of the 16,048-acre, Lower Susquehanna River Gorge Conowingo/Muddy Run Important Bird Area (IBA# 57).

4.5 FEMA

FEMA Flood Insurance Rate Map (FIRM) panel 42133C0510F (revised December 16, 2015) was reviewed for the Project area. According to FIRM panel 42133C0510F which covers the entire Project area, the area is designated as Zone X, an area of minimal flood hazard. A 50-foot wide floodway from the Furnace Run top of bank (TOB) is assumed for this waterway per Chapter 105 of the PA Code (§105.1):

In an area where no FEMA maps or studies have defined the boundary of the 100-year frequency floodway, it is assumed, absent evidence to the contrary, that the floodway extends from the stream to 50 feet from the top of the bank of the stream.

FEMA data for the Project area and surroundings is shown on Figure 2 provided in Appendix A.

4.6 AERIAL PHOTOGRAPHY

Aerial photography from Google Earth was reviewed for the Project site and surrounding areas. The proposed PECO Project ROW transverses through an agriculture field and partially forested land and crosses Goram Rd. The agriculture field appears to have been developed between 2012 and 2013 from a review of the historic aerial photography on Google Earth. Prior to this the field was forested. The surrounding area is more agriculture fields, forested lands as well as a few residential properties and local roadways. Other than the creation of the agriculture field the Project ROW and surrounding area has remained largely unchanged since 1992.

4.7 OTHER HABITAT/SITE INFORMATION

4.7.1 Pennsylvania Title 25 Chapter 105 Water Quality Standards

As stated above, portions of the Project will be within the regulatory floodway of Furnace Run. Furnace Run is designated in Title 25 Chapter 93 of the Pennsylvania Code (PA Code) as a CWF - MF waterway within the Muddy Run-Susquehanna River. The USGS Hydrologic Unit Code (HUC) 12 watershed code of HUC 12 - 020503061708, which is within the larger Susquehanna River Basin (Title 25 Chapter 93.9o, Drainage List O).

4.7.2 Pennsylvania Natural Diversity Index

A Pennsylvania Natural Diversity Inventory (PNDI) review (Project Search ID: PNDI-671837) was conducted for the Project area. The Pennsylvania Game Commission (PGC), the Pennsylvania Fish and Boat Commission (PFBC) and Pennsylvania Department of Conservation and Natural Resources (DCNR) stated that no further coordination is necessary. However, the PNDI search did yield potential impacts to the bog turtle (*Glyptemys muhlenbergii*) under jurisdiction of the United

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States Fish and Wildlife Service (USFWS). The USFWS requested that a Phase 1 Bog Turtle Habitat Assessment Survey be conducted on all wetlands withing 300 feet of the Project area.

See appendix D for a copy of DuBois Phase 1 Bog Turtle Habitat Assessment Survey. DuBois did not identify any bog turtle habitat as part of their survey.

A review of the PNDI database and York County Natural Areas Inventory identified the Natural Heritage Area: Supporting Landscape – Otter Creek, Sawmill Run, boundary within the Project area. According to the York County Inventory Report, the natural community and rare species at this site can be best protected by minimizing deforestation. While implementation of the recommendations is at the discretion of the landowners, cooperative efforts to protect these natural features are greatly encouraged.

4.7.3 Bald Eagle Nesting Sites

A search of the USFWS Pennsylvania Bald Eagle Nesting Sites Database did not identify any known Bald Eagle Nests within the Project area. The closest mapped nesting location (EO ID:22009) is located approximately 2.5 miles northeast of the Project area on Bair Island, along the western shore of the Susquehanna River.



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5.0 Field Results

On March 26, 2019 and July 1, 2019, Stantec personnel conducted surveys of the Project area to determine the presence or absence of regulated resources, including wetlands, streams, and potential threatened and endangered species habitat.

5.1 WETLANDS

Eight (8) jurisdictional wetlands were identified and delineated within the Project area and existing PECO ROW during the July 1, 2019 field survey. One regulated waterway, Furnace Run was identified and delineated within the Project area and ROW. Most of the wetlands delineated within the Project area and existing PECO ROW were palustrine emergent (PEM), however, the surrounding upland areas were forested. All the wetlands were located base of slope and adjacent to and directly associated with Furnace Run. Almost all the wetlands were dominated with skunk cabbage (*Symplocarpus foetidus*).

The eight (8) wetland areas which were delineated during the field survey are summarized below and the Wetland Determination Data Form for each respective wetland area are provided in Appendix B. Representative photographs were taken of the delineated wetland areas and are included in Appendix C. The location of each photo, direction the photo was taken, and location of the wetland in relation to the Project area is shown on Figure 3 provided in Appendix A. A summary of the wetland areas is provided in the table below.



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Table 3. Wetland Summary

Identifier	Delineated Acres	NWI Classification	Comments
Wetland 1	0.003	PEM	<p>Wetland 1 is located south and beyond the 350-foot work area from the ROW. This wetland is a very small, depressed area adjacent to and west of Furnace Run. Wetland 1 is located in a meadow south of the proposed ROW.</p> <p>The dominant vegetation is reed canary grass (<i>Phalaris arundinacea</i>, FACW), jewelweed (<i>Impatiens capensis</i>, FACW) and arrow tear thumb (<i>Polygonum sagittatum</i>, OBL). Soils consist of a brown (7.5YR 5/2) sandy silt loam material. Indicators of wetland hydrology include a high-water table, saturation and oxidized rhizospheres.</p>
Wetland 2	0.016	PEM	<p>Wetland 2 is a small seep area east of Furnace Run. This wetland is fed by stormwaters/drainage waters from Goram Road. The dominant vegetation is skunk cabbage (<i>Symplocarpus foetidus</i>, OBL), japanese stiltgrass (<i>Microstegium vinimeum</i>, FAC) and jewelweed (<i>Impatiens capensis</i>, FACW). Wetland 2 is located south of the proposed ROW. Soils consist of a brown (7.5YR 5/2) silt material horizon with oxidized mottling along roots. Indicators of wetland hydrology include surface water, a high water table, saturation and water-stained leaves.</p>

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Identifier	Delineated Acres	NWI Classification	Comments
Wetland 3	0.012	PEM	Wetland 3 is directly associated with Furnace Run. This wetland is located on a point bar, on an inside bend of Furnace Run. The point bar is an area of deposited sediment which are flooded during high flow events. Wetland 3 is located west of Furnace Run and south of the proposed ROW. The dominant vegetation consists of Pennsylvania smartweed (<i>Polygonum pennsylvanicum</i> , FACW). Soils consist of brown (7.5YR 5/2) gravelly loam. Indicators of wetland hydrology include a high-water table, saturation and drainage patterns.
Wetland 4	0.090	PEM/PFO	Wetland 4 is located within the proposed Project area, west of Furnace Run. The dominant vegetation within Wetland 4 consists of tulip poplar (<i>Liriodendron tulipifera</i> , FACU), northern spicebush (<i>Lindera benzoin</i> , FAC) and skunk cabbage (<i>Symplocarpus foetidus</i> , OBL). Soils consist of black (7.5YR 2.5/1) organic silt loam. Indicators of wetland hydrology include surface water, a high-water table, saturation and geomorphic position.
Wetland 5	0.031	PEM	Wetland 5 is located along the northern portion of the Project area, east of Furnace Run. The wetland is located at the toe of Goram Road and adjacent to Furnace Run. The dominant vegetation within Wetland 5 consists of skunk cabbage (<i>Symplocarpus foetidus</i> , OBL). Soils consist of black (7.5YR 2.5/1) organic silt loam. Indicators of wetland hydrology include a high-water table, saturation, drainage patterns and geomorphic position.

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Identifier	Delineated Acres	NWI Classification	Comments
Wetland 6	0.129	PEM/PFO	Wetland 6 is located north of the proposed work area and within the existing PECO ROW. This wetland is located at the toe of slope and west of Furnace Run. The dominant vegetation within Wetland 6 consists of tulip poplar (<i>Liriodendron tulipifera</i> , FACU), northern spicebush (<i>Lindera benzoin</i> , FAC) and skunk cabbage (<i>Symplocarpus foetidus</i> , OBL). Soils consist of black (7.5YR 2.5/1) organic silt loam. Indicators of wetland hydrology include surface water, a high-water table, saturation and geomorphic position.
Wetland 7	0.009	PEM/PFO	Wetland 7 is located north of the proposed work area and within the existing PECO ROW. This wetland is located at the toe of slope and west of Furnace Run. The dominant vegetation within Wetland 7 consists of tulip poplar (<i>Liriodendron tulipifera</i> , FACU) and skunk cabbage (<i>Symplocarpus foetidus</i> , OBL). Soils consist of black (7.5YR 2.5/1) organic silt loam. Indicators of wetland hydrology include surface water, a high-water table, saturation and geomorphic position.
Wetland 8	0.011	PEM	Wetland 8 is located within the proposed work area. This wetland is associated with a drainage pipe from Goram Road and adjacent to and east of Furnace Run. The dominant vegetation within Wetland 8 consists of skunk cabbage (<i>Symplocarpus foetidus</i> , OBL). Soils consist of black (7.5YR 2.5/1) organic silt loam. Indicators of wetland hydrology include surface water, a high-water table, saturation, drainage patterns and geomorphic position.

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5.2 WATERBODIES

Aside from Furnace Run, no waterbodies (i.e. lakes, ponds, or similar features) were observed or delineated within the Project area or the immediate vicinity during the field survey.

5.3 STREAMS

The field survey confirmed the location of Furnace Run a perennial watercourse through the project area. Within the Project area, the ordinary high-water mark (OHWM) of the Furnace Run is approximately 12 to 15 feet wide, and the top of bank (TOB) width is approximately 30 to 40 feet wide. The streambed substrate consists of cobble, gravel and sand. Flow depths were observed during the March 2019 site visit to be approximately two (2) to four (4) inches. The limits of Furnace Run within the Project area were delineated and surveyed during field reconnaissance activities.

5.4 UPLAND SUMMARY

Upland vegetation, soil, and hydrology data was collected adjacent to each delineated wetland area, however, in some instances an upland data plot was shared between two wetland areas. The upland areas within and surrounding the Project area mainly consist of forested uplands dominated with tulip poplar (*Liriodendron tulipifera*, FACU), northern spicebush (*Lindera benzoin*, FAC) and American witch hazel (*Hamamelis virginiana*, FACU). See vegetation list and data sheets for a full list of vegetation species observed within the proposed work area.

The upper soil horizon, generally between the ground surface to a depth of eight to ten-inches, consisted of a gravelly (channery) silt loam, ranging in color from light brown (7.5YR 6/4), to dark brown (7.5YR 4/3)

The Wetland Determination Data Forms completed for upland areas adjacent to the delineated wetlands and a list of the vegetation observed in both the upland and wetland areas within the ROW and the surrounding area is provided in Appendix B.

5.5 THREATENED AND ENDANGERED SPECIES HABITAT ASSESSMENTS AND EVALUATIONS

Due to USFWS PNDI review and recommendations and having jurisdictional wetlands within 300 feet of the Project area, Stantec retained Bryon DuBois of DuBois Environmental Consultants, LLC (DEC) to conduct a Phase 1 Bog Turtle Habitat Evaluation (Phase 1). Based on the results of the Phase 1 survey conducted July 1, 2019, Mr. Dubois concluded the following:

The results of the Phase 1 bog turtle habitat suitability assessment conclude that the two (2) referenced wetland locations within the project boundary do not contain the necessary hydrology, soils, and/or vegetation to support the bog turtle, and this area is not suitable bog turtle habitat.

Please see the Phase I survey report provided in Appendix D for more information.

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6.0 References

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Appendix A Figures

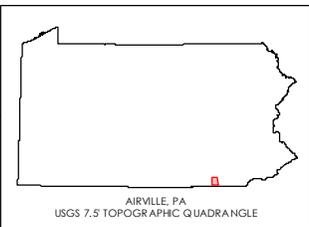
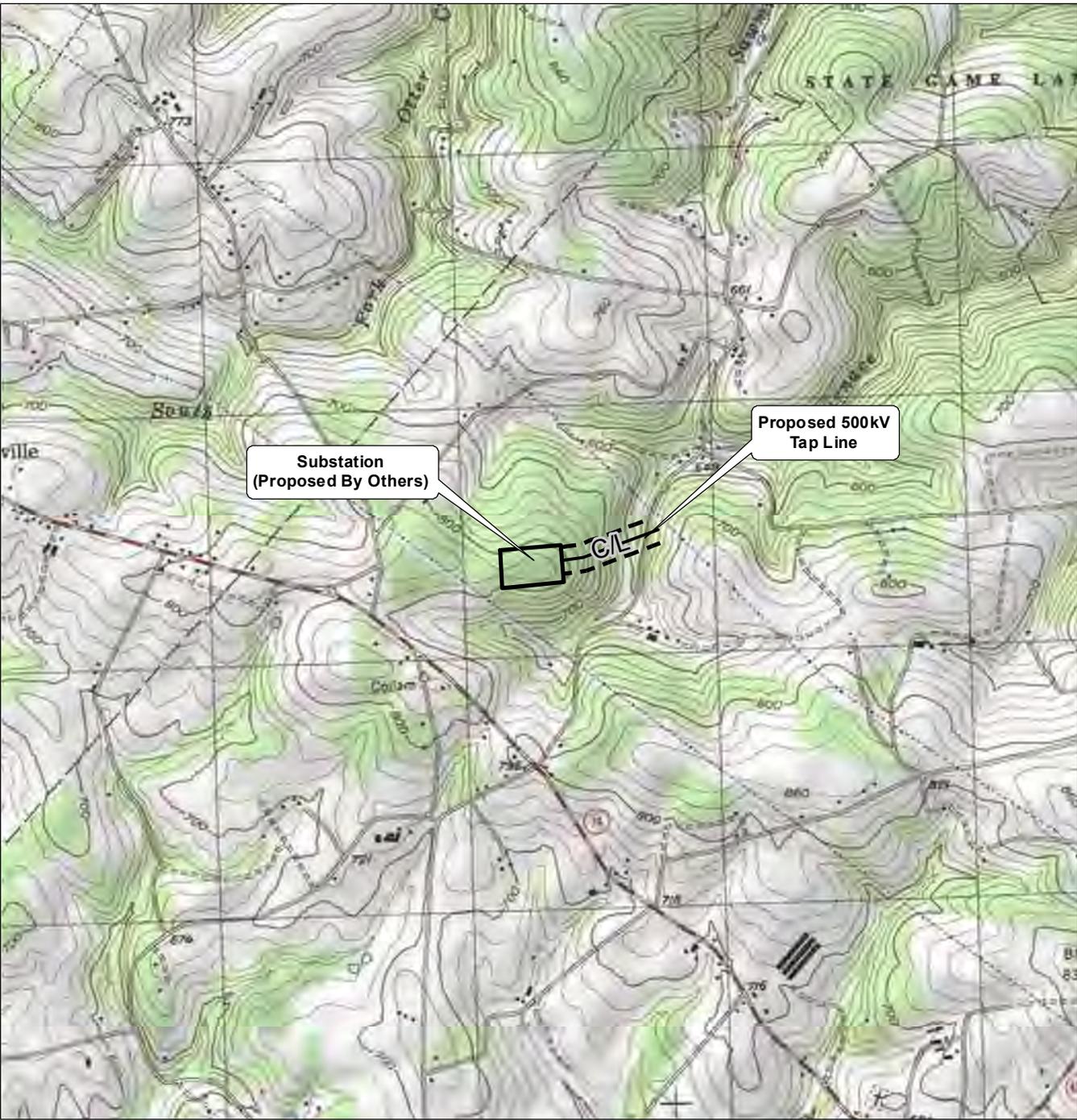


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FIGURE 1. PROJECT LOCATION MAP



FA:2134.ctb\va\213403067\03_data\figs\ca08\fig\mxd\fig_1_furnacesubstlocation_ems1_0_0.mxd Revised: 2019/09/21 By: g5.um



Legend
 Furnace Substation (Proposed by Others)



Project Location: 213403067
 Lower Chancetford Township, York County, PA
 Prepared by GWC on 4/1/2019
 Technical Review by MN on 7/19/2019
 Independent Review by DN on 7/19/2019

Client/Project:
 PECO Energy Company
 Furnace Run Interconnection
 500kV Transmission Line

Figure No.
 1

Title
 Site Location Map

- Notes**
1. Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
 2. Source: Stantec
 3. Service Layer Credits: Copyright © 2013 National Geographic Society, icubed

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FIGURE 2 – RESOURCES MAP



Figure No.

2

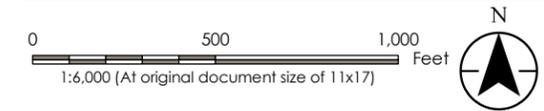
Title

Resources Map

Client/Project
 PECO Energy Company
 Furnace Run Interconnection
 500kV Transmission Line

Project Location
 Lower Chanceford Township,
 York County, PA

213403067
 Prepared by GWC on 6/27/2019
 Technical Review by MN on 7/19/2019
 Independent Review by DN on 7/19/2019



Legend

- Surveyed Parcel Boundary
- 300-foot Buffer
- NHD Stream
- NWI Wetland
- FEMA 100 Year Floodplain
- Soil Boundary

Sources:

- Stantec field visit on March 26, 2019
- FEMA Flood Panel 42133C0510F (Revised December 16, 2015)
- USFWS National Wetlands Inventory (NWI) Maps (Accessed October 31, 2017)
- Soil Survey Geographic (SSURGO) database for Bucks County, PA (Published December 13, 2013)
- National Hydrography Dataset (NHD) Bureau of Topographic and Geologic Survey (Published March 8, 2007)



Notes

1. Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
2. Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community
 PEMA Orthoimagery 2018 - York County



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FIGURE 3. FIELD DATA MAP



Figure No.

3

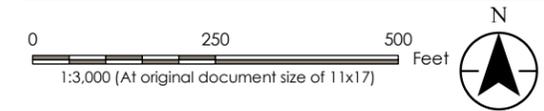
Title

Field Data Map

Client/Project
 PECO Energy Company
 Furnace Run Interconnection
 500kV Transmission Line

Project Location
 Lower Chanceford Township,
 York County, PA

213403067
 Prepared by GWC on 7/12/2019
 Technical Review by MN on 7/19/2019
 Independent Review by DN on 7/19/2019



Legend

- Photo Location & Direction
- Proposed Pole Location
- 300-foot Buffer
- Field Surveyed Parcel Boundary
- Stream Continuation
- Stream Flow Direction
- Field Surveyed Stream
- Field Surveyed Wetland Boundary
- Field Surveyed Wetland Area

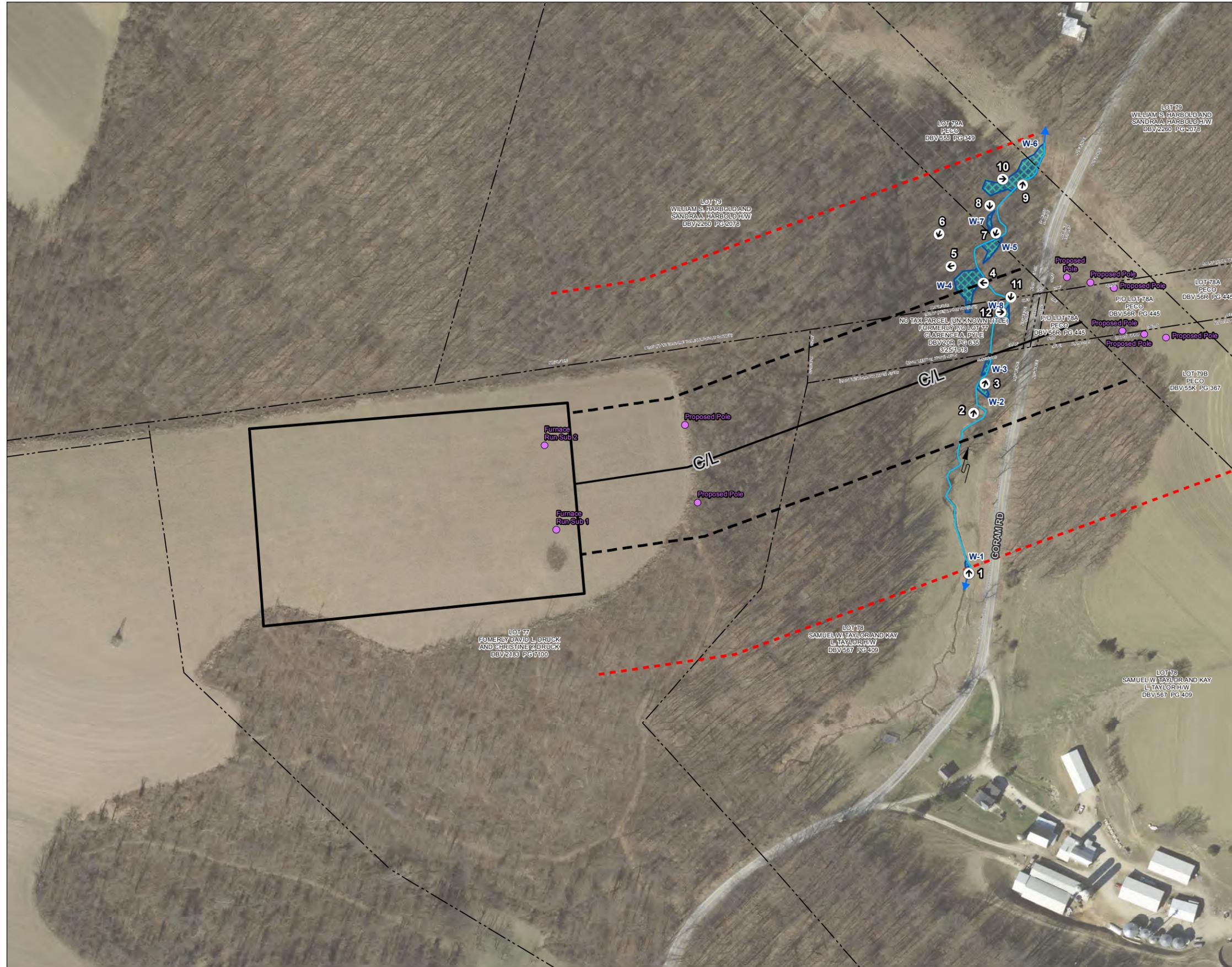
Sources:

- Stantec field visit on July 1, 2019



Notes

1. Coordinate System: NAD 1983 StatePlane Pennsylvania South FIPS 3702 Feet
2. Service Layer Credits: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community
 PEMA Orthoimagery 2018 - York County



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Appendix B

Vegetation List

Wetland Determination Data Forms



WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PECO Furnace Run City/County: York Sampling Date: 7-1-2019
 Applicant/Owner: PECO Energy Company State: PA Sampling Point: W1 wet
 Investigator(s): DPage Section, Township, Range: Lower Chanceford Township
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): _____
 Subregion (LRR or MLRA): MLRA 148 in LRR S Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Cm - Codorus Silt Loam NWI classification: PEM

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <table style="width:100%;"> <tr> <td><input type="checkbox"/> Surface Water (A1)</td> <td><input type="checkbox"/> True Aquatic Plants (B14)</td> </tr> <tr> <td><input type="checkbox"/> High Water Table (A2)</td> <td><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td><input type="checkbox"/> Saturation (A3)</td> <td><input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td><input type="checkbox"/> Water Marks (B1)</td> <td><input checked="" type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td><input type="checkbox"/> Sediment Deposits (B2)</td> <td><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td><input type="checkbox"/> Drift Deposits (B3)</td> <td><input type="checkbox"/> Thin Muck Surface (C7)</td> </tr> <tr> <td><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td><input type="checkbox"/> Iron Deposits (B5)</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Water-Stained Leaves (B9)</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Aquatic Fauna (B13)</td> <td></td> </tr> </table>	<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Saturation (A3)	<input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Water Marks (B1)	<input checked="" type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Aquatic Fauna (B13)		<p><u>Secondary Indicators (minimum of two required)</u></p> <table style="width:100%;"> <tr><td><input type="checkbox"/> Surface Soil Cracks (B6)</td></tr> <tr><td><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td></tr> <tr><td><input type="checkbox"/> Drainage Patterns (B10)</td></tr> <tr><td><input type="checkbox"/> Moss Trim Lines (B16)</td></tr> <tr><td><input type="checkbox"/> Dry-Season Water Table (C2)</td></tr> <tr><td><input type="checkbox"/> Crayfish Burrows (C8)</td></tr> <tr><td><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td></tr> <tr><td><input type="checkbox"/> Stunted or Stressed Plants (D1)</td></tr> <tr><td><input checked="" type="checkbox"/> Geomorphic Position (D2)</td></tr> <tr><td><input type="checkbox"/> Shallow Aquitard (D3)</td></tr> <tr><td><input checked="" type="checkbox"/> Microtopographic Relief (D4)</td></tr> <tr><td><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</td></tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Moss Trim Lines (B16)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input checked="" type="checkbox"/> Microtopographic Relief (D4)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
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<input checked="" type="checkbox"/> FAC-Neutral Test (D5)																																			

<p>Field Observations:</p> Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): <u>>10</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>10</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: W1 wet

	Absolute % Cover	Dominant Species?	Indicator Status																																	
Tree Stratum (Plot size: _____)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																																
1. _____	_____	_____	_____																																	
2. _____	_____	_____	_____																																	
3. _____	_____	_____	_____																																	
4. _____	_____	_____	_____																																	
5. _____	_____	_____	_____																																	
6. _____	_____	_____	_____																																	
7. _____	_____	_____	_____																																	
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____																																				
Sapling/Shrub Stratum (Plot size: _____)																																				
1. _____	_____	_____	_____																																	
2. _____	_____	_____	_____																																	
3. _____	_____	_____	_____																																	
4. _____	_____	_____	_____																																	
5. _____	_____	_____	_____																																	
6. _____	_____	_____	_____																																	
7. _____	_____	_____	_____																																	
8. _____	_____	_____	_____																																	
9. _____	_____	_____	_____																																	
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____																																				
Herb Stratum (Plot size: <u>5</u> _____)				Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%; text-align: right;">Total % Cover of:</td> <td style="width:30%;"></td> <td style="width:10%; text-align: center;">Multiply by:</td> <td style="width:30%;"></td> </tr> <tr> <td>OBL species</td> <td><u>15</u></td> <td>x 1 =</td> <td><u>15</u></td> </tr> <tr> <td>FACW species</td> <td><u>83</u></td> <td>x 2 =</td> <td><u>166</u></td> </tr> <tr> <td>FAC species</td> <td><u>2</u></td> <td>x 3 =</td> <td><u>6</u></td> </tr> <tr> <td>FACU species</td> <td>_____</td> <td>x 4 =</td> <td>_____</td> </tr> <tr> <td>UPL species</td> <td>_____</td> <td>x 5 =</td> <td>_____</td> </tr> <tr> <td>Column Totals:</td> <td><u>100</u> (A)</td> <td></td> <td><u>187</u> (B)</td> </tr> <tr> <td colspan="4" style="text-align: center;">Prevalence Index = B/A = <u>1.87</u></td> </tr> </table> Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	Total % Cover of:		Multiply by:		OBL species	<u>15</u>	x 1 =	<u>15</u>	FACW species	<u>83</u>	x 2 =	<u>166</u>	FAC species	<u>2</u>	x 3 =	<u>6</u>	FACU species	_____	x 4 =	_____	UPL species	_____	x 5 =	_____	Column Totals:	<u>100</u> (A)		<u>187</u> (B)	Prevalence Index = B/A = <u>1.87</u>			
Total % Cover of:		Multiply by:																																		
OBL species	<u>15</u>	x 1 =	<u>15</u>																																	
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Column Totals:	<u>100</u> (A)		<u>187</u> (B)																																	
Prevalence Index = B/A = <u>1.87</u>																																				
1. Phalaris arundinacea	60	Y	FACW																																	
2. Impatiens capensis	20	Y	FACW																																	
3. Polygonum sagittatum	15		OBL																																	
4. Polygonum pensylvanicum	3		FACW																																	
5. Microstegium vimineum	2		FAC																																	
6. _____	_____	_____	_____																																	
7. _____	_____	_____	_____																																	
8. _____	_____	_____	_____																																	
9. _____	_____	_____	_____																																	
10. _____	_____	_____	_____																																	
11. _____	_____	_____	_____																																	
_____ = Total Cover 50% of total cover: <u>50</u> 20% of total cover: <u>20</u>																																				
Woody Vine Stratum (Plot size: _____)																																				
1. _____	_____	_____	_____																																	
2. _____	_____	_____	_____																																	
3. _____	_____	_____	_____																																	
4. _____	_____	_____	_____																																	
5. _____	_____	_____	_____																																	
_____ = Total Cover 50% of total cover: _____ 20% of total cover: _____																																				
Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.																																				
				Hydrophytic Vegetation Present? Yes <u>X</u> No _____																																
Remarks: (Include photo numbers here or on a separate sheet.)																																				

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	7.5 YR4/3	100					sandy loam	
2-10+	7.5YR 5/2	75	7.5 YR 6/6	25			sandy silt loam	

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

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input checked="" type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	<p>Indicators for Problematic Hydric Soils³:</p> <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

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

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PECO Furnace Run City/County: York Sampling Date: 7-1-2019
 Applicant/Owner: PECO Energy Company State: PA Sampling Point: W1 up
 Investigator(s): DPage Section, Township, Range: Lower Chanceford Township
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): none Slope (%): _____
 Subregion (LRR or MLRA): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: Cm - Codorus Silt Loam NWI classification: _____

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
---	--

Remarks:

HYDROLOGY

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

Remarks:

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

Sampling Point: W1 up

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	<u>0</u> = Total Cover			Prevalence Index worksheet:
50% of total cover: _____	20% of total cover: _____			Total % Cover of: _____ Multiply by:
				OBL species _____ x 1 = _____
				FACW species <u>100</u> x 2 = <u>200</u>
				FAC species _____ x 3 = _____
				FACU species _____ x 4 = _____
				UPL species _____ x 5 = _____
				Column Totals: <u>100</u> (A) <u>200</u> (B)
				Prevalence Index = B/A = <u>2</u>
Sapling/Shrub Stratum (Plot size: _____)				Hydrophytic Vegetation Indicators:
1. _____	_____	_____	_____	<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
2. _____	_____	_____	_____	<input type="checkbox"/> 2 - Dominance Test is >50%
3. _____	_____	_____	_____	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹
4. _____	_____	_____	_____	<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
5. _____	_____	_____	_____	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
6. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
	<u>0</u> = Total Cover			Definitions of Four Vegetation Strata:
50% of total cover: _____	20% of total cover: _____			Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
				Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
				Woody vine – All woody vines greater than 3.28 ft in height.
Herb Stratum (Plot size: <u>5</u> _____)				
1. Phalaris arundinacea	100	Y	FACW	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. M	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	<u>100</u> = Total Cover			
50% of total cover: <u>50</u>	20% of total cover: <u>20</u>			
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>0</u> = Total Cover			
50% of total cover: _____	20% of total cover: _____			
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PECO Furnace Run City/County: York Sampling Date: 7-1-2019
 Applicant/Owner: PECO Energy Company State: PA Sampling Point: W2 wet
 Investigator(s): DPage Section, Township, Range: Lower Chanceford Township
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): <10
 Subregion (LRR or MLRA): MLRA 148 in LRR S Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: MRF Mt Airy and Manor NWI classification: PEM

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>6</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
--	---

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

Remarks:

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

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: <u>30</u>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>2</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
_____ = Total Cover					
50% of total cover: _____ 20% of total cover: _____					
Sapling/Shrub Stratum (Plot size: <u>30</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>30</u> x 1 = <u>30</u> FACW species <u>20</u> x 2 = <u>40</u> FAC species <u>20</u> x 3 = <u>60</u> FACU species <u>10</u> x 4 = <u>40</u> UPL species _____ x 5 = _____ Column Totals: <u>80</u> (A) <u>170</u> (B) Prevalence Index = B/A = <u>2.1</u>	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
_____ = Total Cover					
50% of total cover: _____ 20% of total cover: _____					
Herb Stratum (Plot size: <u>10</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
1. <u>Symplocarpus foetidus</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>		
2. <u>Microstegium vimineum</u>	<u>20</u>	<u>Y</u>	<u>FAC</u>		
3. <u>Impatiens capensis</u>	<u>10</u>	_____	<u>FACW</u>		
4. <u>Glechoma hederacea</u>	<u>10</u>	_____	<u>FACU</u>		
5. <u>Pilea pumila</u>	<u>5</u>	_____	<u>FACW</u>		
6. <u>Polygonum pensylvanicum</u>	<u>5</u>	_____	<u>FACW</u>		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
<u>80</u> = Total Cover					
50% of total cover: <u>40</u> 20% of total cover: <u>16</u>					
Woody Vine Stratum (Plot size: _____)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height. Hydrophytic Vegetation Present? Yes <u>X</u> No _____	
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
<u>0</u> = Total Cover					
50% of total cover: _____ 20% of total cover: _____					
Remarks: (Include photo numbers here or on a separate sheet.)					

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PECO Furnace Run City/County: York Sampling Date: 7-1-2019
 Applicant/Owner: PECO Energy Company State: PA Sampling Point: W2 up
 Investigator(s): DPage Section, Township, Range: Lower Chanceford Township
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 35+
 Subregion (LRR or MLRA): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: MRF Mt Airy and Manor NWI classification: _____

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

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks:	

HYDROLOGY

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

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

Sampling Point: W2 up

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30</u>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>8</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>38</u> (A/B)
1. <u>Liriodendron tulipifera</u>	<u>95</u>	<u>Y</u>	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>95</u> = Total Cover 50% of total cover: _____ 20% of total cover: _____				
Sapling/Shrub Stratum (Plot size: <u>30</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>130</u> x 4 = <u>520</u> UPL species _____ x 5 = _____ Column Totals: <u>155</u> (A) <u>585</u> (B) Prevalence Index = B/A = <u>3.7</u>
1. <u>Acer sacchaum</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Hamamelis virginiana</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
<u>20</u> = Total Cover 50% of total cover: <u>10</u> 20% of total cover: _____				
Herb Stratum (Plot size: <u>10</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
1. <u>Alliaria petiolata</u>	<u>10</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Aplectrum hyemale</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	
3. <u>Pilea pumila</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>30</u> = Total Cover 50% of total cover: <u>15</u> 20% of total cover: <u>6</u>				
Woody Vine Stratum (Plot size: <u>30</u>)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1. <u>Parthenocissus quinquefolia</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
2. <u>Toxicodendron radicans</u>	<u>5</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>10</u> = Total Cover 50% of total cover: <u>5</u> 20% of total cover: _____				
Hydrophytic Vegetation Present? Yes _____ No <u>X</u>				
Remarks: (Include photo numbers here or on a separate sheet.)				

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PECO Furnace Run City/County: York Sampling Date: 7-1-2019
 Applicant/Owner: PECO Energy Company State: PA Sampling Point: W3 wet
 Investigator(s): DPage Section, Township, Range: Lower Chanceford Township
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): <10
 Subregion (LRR or MLRA): MLRA 148 in LRR S Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: MRF Mt Airy and Manor NWI classification: PEM

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"><input type="checkbox"/> Surface Water (A1)</td> <td style="width:50%; border: none;"><input type="checkbox"/> True Aquatic Plants (B14)</td> </tr> <tr> <td style="border: none;"><input checked="" type="checkbox"/> High Water Table (A2)</td> <td style="border: none;"><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td style="border: none;"><input checked="" type="checkbox"/> Saturation (A3)</td> <td style="border: none;"><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water Marks (B1)</td> <td style="border: none;"><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td style="border: none;"><input checked="" type="checkbox"/> Sediment Deposits (B2)</td> <td style="border: none;"><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Drift Deposits (B3)</td> <td style="border: none;"><input type="checkbox"/> Thin Muck Surface (C7)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td style="border: none;"><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Iron Deposits (B5)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water-Stained Leaves (B9)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Aquatic Fauna (B13)</td> <td></td> </tr> </table>	<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input checked="" type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <table style="width:100%; border: none;"> <tr><td style="border: none;"><input type="checkbox"/> Surface Soil Cracks (B6)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td></tr> <tr><td style="border: none;"><input checked="" type="checkbox"/> Drainage Patterns (B10)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Moss Trim Lines (B16)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Dry-Season Water Table (C2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Crayfish Burrows (C8)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Stunted or Stressed Plants (D1)</td></tr> <tr><td style="border: none;"><input checked="" type="checkbox"/> Geomorphic Position (D2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Shallow Aquitard (D3)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Microtopographic Relief (D4)</td></tr> <tr><td style="border: none;"><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</td></tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Moss Trim Lines (B16)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> Microtopographic Relief (D4)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)																																		
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)																																		
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)																																		
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)																																		
<input checked="" type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)																																		
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)																																		
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)																																		
<input type="checkbox"/> Iron Deposits (B5)																																			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)																																			
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<input type="checkbox"/> Microtopographic Relief (D4)																																			
<input checked="" type="checkbox"/> FAC-Neutral Test (D5)																																			

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>3</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30</u>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Sapling/Shrub Stratum (Plot size: <u>30</u>)				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species <u>85</u> x 2 = <u>170</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: <u>90</u> (A) <u>185</u> (B) Prevalence Index = B/A = <u>2.1</u>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Herb Stratum (Plot size: <u>10</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
1. <u>Polygonum pensylvanicum</u>	<u>85</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Microstegium vimineum</u>	<u>5</u>	_____	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
<u>90</u> = Total Cover				
50% of total cover: <u>40.5</u> 20% of total cover: <u>18</u>				
Woody Vine Stratum (Plot size: _____)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Hydrophytic Vegetation Present? Yes <u>X</u> No _____				
Remarks: (Include photo numbers here or on a separate sheet.)				

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PECO Furnace Run City/County: York Sampling Date: 7-1-2019
 Applicant/Owner: PECO Energy Company State: PA Sampling Point: W4 wet
 Investigator(s): DPage Section, Township, Range: Lower Chanceford Township
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): <10
 Subregion (LRR or MLRA): MLRA 148 in LRR S Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: MRF Mt Airy and Manor NWI classification: PEM

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes <u>X</u> No _____ Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): _____ Saturation Present? Yes <u>X</u> No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30</u>)				
1. <u>Liriodendron tulipifera</u>	<u>50</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66</u> (A/B)
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
50 = Total Cover				
50% of total cover: <u>25</u>		20% of total cover: <u>10</u>		
Sapling/Shrub Stratum (Plot size: <u>30</u>)				
1. <u>Lindera benzoin</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>95</u> x 1 = <u>95</u> FACW species _____ x 2 = _____ FAC species <u>25</u> x 3 = <u>75</u> FACU species <u>50</u> x 4 = <u>200</u> UPL species _____ x 5 = _____ Column Totals: <u>170</u> (A) <u>370</u> (B) Prevalence Index = B/A = <u>2.2</u>
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
15 = Total Cover				
50% of total cover: <u>7.5</u>		20% of total cover: <u>3</u>		
Herb Stratum (Plot size: <u>30</u>)				
1. <u>Symplocarpus foetidus</u>	<u>95</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
95 = Total Cover				
50% of total cover: <u>47.5</u>		20% of total cover: <u>19</u>		
Woody Vine Stratum (Plot size: _____)				
1. _____				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
2. _____				
3. _____				
4. _____				
5. _____				
0 = Total Cover				
50% of total cover: _____		20% of total cover: _____		
Hydrophytic Vegetation Present? Yes <u>X</u> No _____				

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

trees and shrubs we canopy only, not growing within the wetland

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PECO Furnace Run City/County: York Sampling Date: 7-1-2019
 Applicant/Owner: PECO Energy Company State: PA Sampling Point: W4 up
 Investigator(s): DPage Section, Township, Range: Lower Chanceford Township
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 35+
 Subregion (LRR or MLRA): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: MRF Mt Airy and Manor NWI classification: _____

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

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks:	

HYDROLOGY

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

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

Sampling Point: W4 up

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				
1. <u>Liriodendron tulipifera</u>	<u>100</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
_____ = Total Cover				
50% of total cover: _____	20% of total cover: _____			
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>Lindera benzoin</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>105</u> x 4 = <u>420</u> UPL species _____ x 5 = _____ Column Totals: <u>115</u> (A) <u>450</u> (B) Prevalence Index = B/A = <u>3.9</u>
2. <u>Hamamelis virginiana</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
_____ = Total Cover				
50% of total cover: <u>7.5</u>	20% of total cover: <u>3</u>			
Herb Stratum (Plot size: _____)				
1. _____				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
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. _____				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
50% of total cover: _____	20% of total cover: _____			
Hydrophytic Vegetation Present? Yes _____ No <u>X</u>				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

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	7.5 YR6/4	85					channery silt loam	

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

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	<p>Indicators for Problematic Hydric Soils³:</p> <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PECO Furnace Run City/County: York Sampling Date: 7-1-2019
 Applicant/Owner: PECO Energy Company State: PA Sampling Point: W5 wet
 Investigator(s): DPage Section, Township, Range: Lower Chanceford Township
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): <10
 Subregion (LRR or MLRA): MLRA 148 in LRR S Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: MRF Mt Airy and Manor NWI classification: PEM

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <table style="width:100%; border: none;"> <tr> <td style="width:50%; border: none;"><input type="checkbox"/> Surface Water (A1)</td> <td style="width:50%; border: none;"><input type="checkbox"/> True Aquatic Plants (B14)</td> </tr> <tr> <td style="border: none;"><input checked="" type="checkbox"/> High Water Table (A2)</td> <td style="border: none;"><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td style="border: none;"><input checked="" type="checkbox"/> Saturation (A3)</td> <td style="border: none;"><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water Marks (B1)</td> <td style="border: none;"><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td style="border: none;"><input checked="" type="checkbox"/> Sediment Deposits (B2)</td> <td style="border: none;"><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Drift Deposits (B3)</td> <td style="border: none;"><input type="checkbox"/> Thin Muck Surface (C7)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td style="border: none;"><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Iron Deposits (B5)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Water-Stained Leaves (B9)</td> <td></td> </tr> <tr> <td style="border: none;"><input type="checkbox"/> Aquatic Fauna (B13)</td> <td></td> </tr> </table>	<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)	<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input checked="" type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Iron Deposits (B5)		<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)		<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Aquatic Fauna (B13)		Secondary Indicators (minimum of two required) <table style="width:100%; border: none;"> <tr><td style="border: none;"><input type="checkbox"/> Surface Soil Cracks (B6)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td></tr> <tr><td style="border: none;"><input checked="" type="checkbox"/> Drainage Patterns (B10)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Moss Trim Lines (B16)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Dry-Season Water Table (C2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Crayfish Burrows (C8)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Stunted or Stressed Plants (D1)</td></tr> <tr><td style="border: none;"><input checked="" type="checkbox"/> Geomorphic Position (D2)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Shallow Aquitard (D3)</td></tr> <tr><td style="border: none;"><input type="checkbox"/> Microtopographic Relief (D4)</td></tr> <tr><td style="border: none;"><input checked="" type="checkbox"/> FAC-Neutral Test (D5)</td></tr> </table>	<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<input checked="" type="checkbox"/> Drainage Patterns (B10)	<input type="checkbox"/> Moss Trim Lines (B16)	<input type="checkbox"/> Dry-Season Water Table (C2)	<input type="checkbox"/> Crayfish Burrows (C8)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)	<input type="checkbox"/> Stunted or Stressed Plants (D1)	<input checked="" type="checkbox"/> Geomorphic Position (D2)	<input type="checkbox"/> Shallow Aquitard (D3)	<input type="checkbox"/> Microtopographic Relief (D4)	<input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> True Aquatic Plants (B14)																																		
<input checked="" type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)																																		
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)																																		
<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Presence of Reduced Iron (C4)																																		
<input checked="" type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)																																		
<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Thin Muck Surface (C7)																																		
<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Other (Explain in Remarks)																																		
<input type="checkbox"/> Iron Deposits (B5)																																			
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)																																			
<input type="checkbox"/> Water-Stained Leaves (B9)																																			
<input type="checkbox"/> Aquatic Fauna (B13)																																			
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<input type="checkbox"/> Shallow Aquitard (D3)																																			
<input type="checkbox"/> Microtopographic Relief (D4)																																			
<input checked="" type="checkbox"/> FAC-Neutral Test (D5)																																			

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>6</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

	Absolute % Cover	Dominant Species?	Indicator Status																													
Tree Stratum (Plot size: <u>30</u>)				Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)																												
1. _____	_____	_____	_____																													
2. _____	_____	_____	_____																													
3. _____	_____	_____	_____																													
4. _____	_____	_____	_____																													
5. _____	_____	_____	_____																													
6. _____	_____	_____	_____																													
7. _____	_____	_____	_____																													
_____ = Total Cover																																
50% of total cover: _____ 20% of total cover: _____																																
Sapling/Shrub Stratum (Plot size: <u>30</u>)				Prevalence Index worksheet: <table style="width:100%; border-collapse: collapse;"> <tr> <td style="width:30%;"></td> <td style="width:20%;">Total % Cover of:</td> <td style="width:20%;"></td> <td style="width:20%;">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td><u>30</u></td> <td>x 1 =</td> <td><u>30</u></td> </tr> <tr> <td>FACW species</td> <td><u>30</u></td> <td>x 2 =</td> <td><u>60</u></td> </tr> <tr> <td>FAC species</td> <td><u>10</u></td> <td>x 3 =</td> <td><u>30</u></td> </tr> <tr> <td>FACU species</td> <td><u>10</u></td> <td>x 4 =</td> <td><u>40</u></td> </tr> <tr> <td>UPL species</td> <td>_____</td> <td>x 5 =</td> <td>_____</td> </tr> <tr> <td>Column Totals:</td> <td><u>80</u></td> <td>(A)</td> <td><u>160</u> (B)</td> </tr> </table> Prevalence Index = B/A = <u>2.0</u>		Total % Cover of:		Multiply by:	OBL species	<u>30</u>	x 1 =	<u>30</u>	FACW species	<u>30</u>	x 2 =	<u>60</u>	FAC species	<u>10</u>	x 3 =	<u>30</u>	FACU species	<u>10</u>	x 4 =	<u>40</u>	UPL species	_____	x 5 =	_____	Column Totals:	<u>80</u>	(A)	<u>160</u> (B)
	Total % Cover of:		Multiply by:																													
OBL species	<u>30</u>	x 1 =	<u>30</u>																													
FACW species	<u>30</u>	x 2 =	<u>60</u>																													
FAC species	<u>10</u>	x 3 =	<u>30</u>																													
FACU species	<u>10</u>	x 4 =	<u>40</u>																													
UPL species	_____	x 5 =	_____																													
Column Totals:	<u>80</u>	(A)	<u>160</u> (B)																													
1. _____	_____	_____	_____																													
2. _____	_____	_____	_____																													
3. _____	_____	_____	_____																													
4. _____	_____	_____	_____																													
5. _____	_____	_____	_____																													
6. _____	_____	_____	_____																													
7. _____	_____	_____	_____																													
8. _____	_____	_____	_____																													
9. _____	_____	_____	_____																													
_____ = Total Cover																																
50% of total cover: _____ 20% of total cover: _____																																
Herb Stratum (Plot size: <u>10</u>)				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)																												
1. <u>Symplocarpus foetidus</u>	<u>30</u>	<u>Y</u>	<u>OBL</u>																													
2. <u>Microstegium vimineum</u>	<u>10</u>	_____	<u>FAC</u>																													
3. <u>Impatiens capensis</u>	<u>10</u>	_____	<u>FACW</u>																													
4. <u>Alliaria petiolata</u>	<u>10</u>	_____	<u>FACU</u>																													
5. <u>Pilea pumila</u>	<u>10</u>	_____	<u>FACW</u>																													
6. <u>Polygonum pensylvanicum</u>	<u>10</u>	_____	<u>FACW</u>																													
7. _____	_____	_____	_____																													
8. _____	_____	_____	_____																													
9. _____	_____	_____	_____																													
10. _____	_____	_____	_____																													
11. _____	_____	_____	_____																													
<u>80</u> = Total Cover																																
50% of total cover: <u>40</u> 20% of total cover: <u>16</u>																																
Woody Vine Stratum (Plot size: _____)				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.																												
1. _____	_____	_____	_____																													
2. _____	_____	_____	_____																													
3. _____	_____	_____	_____																													
4. _____	_____	_____	_____																													
5. _____	_____	_____	_____																													
<u>0</u> = Total Cover																																
50% of total cover: _____ 20% of total cover: _____																																
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes <u>X</u> No _____																												

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PECO Furnace Run City/County: York Sampling Date: 7-1-2019
 Applicant/Owner: PECO Energy Company State: PA Sampling Point: W6 wet
 Investigator(s): DPage Section, Township, Range: Lower Chanceford Township
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): <10
 Subregion (LRR or MLRA): MLRA 148 in LRR S Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: MRF Mt Airy and Manor NWI classification: PEM

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>X</u>
Remarks: wetland extends into gas ROW with no forested canopy	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>4</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>2</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: <u>30</u>)					
1. <u>Liriodendron tulipifera</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66</u> (A/B)	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
50% of total cover: <u>20</u>	<u>40</u>	= Total Cover			Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>65</u> x 1 = <u>65</u> FACW species _____ x 2 = _____ FAC species <u>15</u> x 3 = <u>45</u> FACU species <u>40</u> x 4 = <u>160</u> UPL species _____ x 5 = _____ Column Totals: <u>120</u> (A) <u>270</u> (B) Prevalence Index = B/A = <u>2.25</u>
20% of total cover: <u>8</u>					
Sapling/Shrub Stratum (Plot size: <u>30</u>)					
1. <u>Lindera benzoin</u>	<u>15</u>	<u>Y</u>	<u>FAC</u>		
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
50% of total cover: <u>7.5</u>	<u>15</u>	= Total Cover			
20% of total cover: <u>3</u>					
Herb Stratum (Plot size: <u>30</u>)					
1. <u>Symplocarpus foetidus</u>	<u>65</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
2. _____					
3. _____					
4. _____					
5. _____					
6. _____					
7. _____					
8. _____					
9. _____					
10. _____					
11. _____					
50% of total cover: <u>32.5</u>	<u>65</u>	= Total Cover			
20% of total cover: <u>13</u>					
Woody Vine Stratum (Plot size: _____)					
1. _____				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.	
2. _____					
3. _____					
4. _____					
5. _____					
50% of total cover: _____	<u>0</u>	= Total Cover			
20% of total cover: _____					
Hydrophytic Vegetation Present? Yes <u>X</u> No _____					

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

trees and shrubs we canopy only, not growing within the wetland approximately 35 bare ground

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PECO Furnace Run City/County: York Sampling Date: 7-1-2019
 Applicant/Owner: PECO Energy Company State: PA Sampling Point: W6 up
 Investigator(s): DPage Section, Township, Range: Lower Chanceford Township
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): convex Slope (%): 35+
 Subregion (LRR or MLRA): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: MRF Mt Airy and Manor NWI classification: _____

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

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks:	

HYDROLOGY

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

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

Sampling Point: W6 up

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: _____)				
1. <u>Liriodendron tulipifera</u>	<u>100</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>33</u> (A/B)
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
Sapling/Shrub Stratum (Plot size: _____)				
1. <u>Lindera benzoin</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species <u>10</u> x 3 = <u>30</u> FACU species <u>105</u> x 4 = <u>420</u> UPL species _____ x 5 = _____ Column Totals: <u>115</u> (A) <u>450</u> (B) Prevalence Index = B/A = <u>3.9</u>
2. <u>Hamamelis virginiana</u>	<u>5</u>	<u>Y</u>	<u>FACU</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
_____ = Total Cover				
50% of total cover: <u>7.5</u> 20% of total cover: <u>3</u>				
Herb Stratum (Plot size: _____)				
1. _____				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
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. _____				Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
2. _____				
3. _____				
4. _____				
5. _____				
_____ = Total Cover				
50% of total cover: _____ 20% of total cover: _____				
				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-6	7.5 YR6/4	85					channery silt loam	

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

<p>Hydric Soil Indicators:</p> <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) <input type="checkbox"/> 2 cm Muck (A10) (LRR N) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) <input type="checkbox"/> Sandy Gleyed Matrix (S4) <input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Dark Surface (S7) <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	<p>Indicators for Problematic Hydric Soils³:</p> <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) <input type="checkbox"/> Very Shallow Dark Surface (TF12) <input type="checkbox"/> Other (Explain in Remarks)
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³Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

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

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PECO Furnace Run City/County: York Sampling Date: 7-1-2019
 Applicant/Owner: PECO Energy Company State: PA Sampling Point: W7 wet
 Investigator(s): DPage Section, Township, Range: Lower Chanceford Township
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): <10
 Subregion (LRR or MLRA): MLRA 148 in LRR S Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: MRF Mt Airy and Manor NWI classification: PEM

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>X</u>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u>	<u>Secondary Indicators (minimum of two required)</u>
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)	

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>4</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>2</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>10</u>)				
1. <u>Liriodendron tulipifera</u>	<u>35</u>	<u>Y</u>	<u>FACU</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>35</u> = Total Cover				
50% of total cover: <u>17.5</u>		20% of total cover: <u>7</u>		
Sapling/Shrub Stratum (Plot size: <u>10</u>)				
1. <u>Lindera benzoin</u>	<u>10</u>	<u>Y</u>	<u>FAC</u>	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>60</u> x 1 = <u>60</u> FACW species <u>25</u> x 2 = <u>50</u> FAC species <u>20</u> x 3 = <u>60</u> FACU species <u>35</u> x 4 = <u>140</u> UPL species _____ x 5 = _____ Column Totals: <u>140</u> (A) <u>310</u> (B) Prevalence Index = B/A = <u>2.2.1</u>
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
<u>10</u> = Total Cover				
50% of total cover: <u>5</u>		20% of total cover: <u>2</u>		
Herb Stratum (Plot size: <u>10</u>)				
1. <u>Symplocarpus foetidus</u>	<u>60</u>	<u>Y</u>	<u>OBL</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
2. <u>Polygonum pensylvanicum</u>	<u>15</u>	_____	<u>FACW</u>	
3. <u>Microstegium vimineum</u>	<u>10</u>	_____	<u>FAC</u>	
4. <u>Pilea pumila</u>	<u>5</u>	_____	<u>FACW</u>	
5. <u>Arisaema triphyllum</u>	<u>5</u>	_____	<u>FACW</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>95</u> = Total Cover				
50% of total cover: <u>47.5</u>		20% of total cover: <u>19</u>		
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
<u>0</u> = Total Cover				
50% of total cover: _____		20% of total cover: _____		
Remarks: (Include photo numbers here or on a separate sheet.) trees and shrubs we canopy only, not growing within the wetland				

Hydrophytic Vegetation Present? Yes X No _____

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PECO Furnace Run City/County: York Sampling Date: 7-1-2019
 Applicant/Owner: PECO Energy Company State: PA Sampling Point: W8 wet
 Investigator(s): DPage Section, Township, Range: Lower Chanceford Township
 Landform (hillslope, terrace, etc.): terrace Local relief (concave, convex, none): concave Slope (%): <10
 Subregion (LRR or MLRA): MLRA 148 in LRR S Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: MRF Mt Airy and Manor NWI classification: PEM

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

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply)	Secondary Indicators (minimum of two required)
<input type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Other (Explain in Remarks)	

Field Observations: Surface Water Present? Yes _____ No <u>X</u> Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>8</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
---	---

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

Remarks:

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

	Absolute % Cover	Dominant Species?	Indicator Status		
Tree Stratum (Plot size: <u>30</u>)					
1. _____	_____	_____	_____	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>1</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)	
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
_____ = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species <u>60</u> x 1 = <u>60</u> FACW species <u>10</u> x 2 = <u>20</u> FAC species <u>5</u> x 3 = <u>15</u> FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: <u>75</u> (A) <u>95</u> (B) Prevalence Index = B/A = <u>1.3</u>	
50% of total cover: _____		20% of total cover: _____			
Sapling/Shrub Stratum (Plot size: <u>30</u>)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
_____ = Total Cover				Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)	
50% of total cover: _____		20% of total cover: _____			
Herb Stratum (Plot size: <u>10</u>)					
1. <u>Symplocarpus foetidus</u>	<u>60</u>	<u>Y</u>	<u>OBL</u>		¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. Definitions of Four Vegetation Strata: Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall. Woody vine – All woody vines greater than 3.28 ft in height.
2. <u>Microstegium vimineum</u>	<u>5</u>	_____	<u>FAC</u>		
3. <u>Impatiens capensis</u>	<u>5</u>	_____	<u>FACW</u>		
4. <u>Polygonum pensylvanicum</u>	<u>5</u>	_____	<u>FACW</u>		
5. _____	_____	_____	_____		
6. _____	_____	_____	_____		
7. _____	_____	_____	_____		
8. _____	_____	_____	_____		
9. _____	_____	_____	_____		
10. _____	_____	_____	_____		
11. _____	_____	_____	_____		
<u>75</u> = Total Cover					
50% of total cover: <u>37.5</u>		20% of total cover: <u>15</u>			
Woody Vine Stratum (Plot size: _____)					
1. _____	_____	_____	_____		
2. _____	_____	_____	_____		
3. _____	_____	_____	_____		
4. _____	_____	_____	_____		
5. _____	_____	_____	_____		
<u>0</u> = Total Cover				Hydrophytic Vegetation Present? Yes <u>X</u> No _____	
50% of total cover: _____		20% of total cover: _____			
Remarks: (Include photo numbers here or on a separate sheet.)					

**PECO ENERGY COMPANY,
FURNACE RUN INTERCONNECTION 500KV TRANSMISSION LINE PROJECT
WATERS OF THE US DELINEATION REPORT**

Appendix C

Site Photographs



Photographic Log – July 1, 2019
PECO Furnace Run Interconnection 500kV Transmission Line
Lower Chanceford Township, York County, Pennsylvania

PHOTO 1



View facing north from the edge of the 300-foot buffer of the Project area of Furnace Run and the reed canary dominated meadow.

PHOTO 2



View facing north of Furnace Run within the proposed ROW.

Photographic Log – July 1, 2019
PECO Furnace Run Interconnection 500kV Transmission Line
Lower Chanceford Township, York County, Pennsylvania

PHOTO 3



View facing north of identified Wetland 3 formed on a sand/gravel bar of Furnace Run. Wetland is dominated with Pennsylvania smartweed (*Polygonum pensylvanicum*).

PHOTO 4



View facing west of the identified Wetland 4. Wetland is dominated with skunk cabbage (*Symplocarpus foetidus*), tulip poplar (*Liriodendron tulipifera*, FACU), and northern spicebush (*Lindera benzoin*, FAC).

Photographic Log – July 1, 2019
PECO Furnace Run Interconnection 500kV Transmission Line
Lower Chanceford Township, York County, Pennsylvania

PHOTO 5



View facing west of the upland forest. Upland forest is dominated with tulip poplar (*Liriodendron tulipifera*), spicebush (*Lindera benzoin*) and witchhazel (*Hamamelis virginiana*).

PHOTO 6



View facing southwest of the upland forest.

Photographic Log – July 1, 2019
PECO Furnace Run Interconnection 500kV Transmission Line
Lower Chanceford Township, York County, Pennsylvania

PHOTO 7



View facing south of identified Wetland 5. This small wetland is dominated with skunk cabbage (*Symplocarpus foetidus*).

PHOTO 8



View facing of south of identified Wetland 7. Wetland is dominated with skunk cabbage (*Symplocarpus foetidus*), tulip poplar (*Liriodendron tulipifera*, FACU), and northern spicebush (*Lindera benzoin*, FAC).

Photographic Log – July 1, 2019
PECO Furnace Run Interconnection 500kV Transmission Line
Lower Chanceford Township, York County, Pennsylvania

PHOTO 9



View facing north of Wetland 6. Wetland is dominated with skunk cabbage (*Symplocarpus foetidus*), tulip poplar (*Liriodendron tulipifera*, FACU), and northern spicebush (*Lindera benzoin*, FAC).

PHOTO 10



View facing east of saturated bare ground within Wetland 6.

Photographic Log – July 1, 2019
PECO Furnace Run Interconnection 500kV Transmission Line
Lower Chanceford Township, York County, Pennsylvania

PHOTO 11



View facing south of Wetland 8. Wetland is at base from Goram Road and Furnace Run.

PHOTO 12



View facing west of forested upland between Wetland 8 and Goram Road.

**PECO ENERGY COMPANY,
FURNACE RUN INTERCONNECTION 500KV TRANSMISSION LINE PROJECT
WATERS OF THE US DELINEATION REPORT**

Appendix D

DuBois Environmental Consultants

Bog Turtle Phase 1 Report



D1264.022
July 16, 2019

BOG TURTLE
(Glyptemys muhlenbergii)
PHASE 1 HABITAT SUITABILITY ASSESSMENT

FOR

FURNACE RUN INTERCONNECTION 500KV TRANSMISSION LINE
LOWER CHANCEFORD TOWNSHIP,
YORK COUNTY, PENNSYLVANIA

PREPARED FOR:

STANTEC
400 DAVIS DRIVE SUITE 400
PLYMOUTH MEETING, PA 19462

PREPARED BY:



DUBOIS ENVIRONMENTAL CONSULTANTS, LLC
190 NORTH MAIN STREET
MANAHAWKIN, NJ 08050



BRYON DUBOIS
SENIOR BIOLOGIST

Bog Turtle Phase 1 Habitat Suitability Assessment

Furnace Run Interconnection 500kV Transmission Line Project
 Lower Chanceford Township, Chester County, PA

July 16, 2019
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FIGURES

Figure 1	Pennsylvania Road Map
Figure 2	Airville USGS Quadrangle Map
Figure 3	Habitat Suitability Assessment Map

APPENDICES

Appendix A	Site Photographs
Appendix B	Bog Turtle Habitat Evaluation Field Forms
Appendix C	Statement of Qualifications
Appendix D	PNDI #671837

Bog Turtle Phase 1 Habitat Suitability Assessment

Furnace Run Interconnection 500kV Transmission Line Project
Lower Chanceford Township, Chester County, PA

July 16, 2019
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1.0 Introduction

This report documents the results and conclusions of a Phase 1 Bog Turtle (*Glyptemys muhlenbergii*) Habitat Suitability Assessment conducted for the Furnace Run Interconnection 500kV Transmission Line Project performed by DuBois Environmental Consultants (DEC) for Stantec, on behalf of PECO. The project is located within Lower Chanceford Township, York County, PA.

DuBois Environmental Consultants (DEC) was retained in June of 2019 by Stantec to perform a Phase I bog turtle (*Glyptemys muhlenbergii*) habitat suitability assessment for approximately less than acre of land to the west of Goram Road in Lower Chanceford York County, PA. DEC followed United States Fish and Wildlife Service (USFWS) guidelines and assessed all wetlands in and within 300 feet of the project area for bog turtle habitat suitability.

Mr. Bryon DuBois from DEC conducted the habitat assessment on July 1, 2019. Mr. DuBois is a USFWS – Recognized Qualified Bog Turtle Surveyor in New Jersey, Pennsylvania, New York, Maryland and Delaware. The habitat assessment was conducted using the USFWS Guidelines for Bog Turtle Surveys, Bog Turtle Northern Population Recovery Plan, dated May 15, 2001 and revised October 26, 2018. Three criteria were assessed on the subject property to determine habitat suitability: hydrology, soils, and vegetation.

2.0 Location

The site is situated in the middle of Goram Road, Burns Road, and Delta Road (refer to *Figure 1: Pennsylvania Road Map*). The site is located on the Airville U.S.G.S. Quadrangle with state plane coordinates (feet) of E(x) 2,342,176 N(y) 192,269 at the approximate center of the site (refer to *Figure 2: Airville USGS Quadrangle Map*). The site is located in the Lower Susquehanna River HUC 8 watershed and the Muddy Run-Susquehanna River HUC12 watershed. The site consists of a PECO right-of-way (ROW) that is forested and is intersected by the Furnace Run.

3.0 Species Description and Life History

Bog Turtle (*Glyptemys muhlenbergii*), Federally Threatened, State Endangered

Bog turtles are one of the smallest turtles native to the United States. The bog turtle has an average adult size of approximately 3.5 inches (8.9 cm) and a record length of 4.5 inches (11.4 cm). The carapace (i.e., top shell) is light brown to mahogany to black with a lighter center or, often, a yellowish or reddish sunburst pattern on each scute. The midline of the carapace is weakly keeled. Carapacial growth annuli may or may not be present, on account of the turtle's burrowing habits which may cause the shell to have a smooth appearance. The carapace of a bog turtle is flat at hatching and becomes more domed with age. The plastron (i.e., bottom shell) is brown to black with small areas of a lighter hue. The bog turtle's main identification is a large patch of orange, red or yellow on the temporal region of the head often extending onto the neck. Occasionally, the patch is split into two parts. The dark limbs are usually suffused with red, orange, or yellow mottling. The male bog turtle has a concave plastron while that of the female is flat or convex. The male also has a thicker tail than the female (USFWS 2001; Schwartz and Golden 2002; Natureserve 2011).

The bog turtle has been reported from twelve (12) eastern states, with a discontinuous and localized distribution from western Massachusetts and Connecticut, southward through New York, New Jersey, Pennsylvania, Delaware and Maryland, and then southward in the Appalachian Mountains from

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southwestern Virginia, North Carolina, Tennessee and South Carolina to northern Georgia (USFWS 2001). Eastern Pennsylvania has long been considered a stronghold for the bog turtle, particularly within the Delaware and Susquehanna watersheds. In Pennsylvania, the bog turtle is known to currently occur within Adams, Berks, Bucks, Chester, Cumberland, Delaware, Franklin, Lancaster, Lebanon, Lehigh, Monroe, Montgomery, Northampton, and York counties (USFWS 2001).

Bog turtles inhabit a variety of wetland types throughout their range, but generally these are small, open-canopy, herbaceous sedge meadows and fens bordered by more thickly vegetated and wooded areas. The habitat is best described as open wet meadows, shallow water marshes, spring seeps, open floodplain wetlands, bogs and fens. Most of these habitats are in flat or gently rolling hills and valleys. Throughout the bog turtle's northern range, seepage or spring-fed emergent wetlands associated with streams are the primary habitat. These are often at or near the headwaters of streams or small tributaries. The habitats are often elongated or strip-like transitional zones between drier upland areas and more thickly vegetated, wetter, wooded swamp or marsh. Although bog turtles are dependent upon suitable open-canopy sedge meadows and fens for many of their ecological requirements such as foraging, reproduction, and thermoregulation, they also utilize more densely vegetated areas for hibernation.

Wetland plants that are known bog turtle habitat indicators include tussock sedge (*Carex stricta*), rushes (*Juncus* spp.), jewelweed (*Impatiens pallida*), skunk cabbage (*Symplocarpus foetidus*), sphagnum (*Sphagnum* spp.) and various mature grasses such as rice-cut grass (*Leersia oryzoides*) and panic grass (*Panicum* spp.). More recently, bog turtles have been found in early to mid-successional maple forests, common reed grass (*Phragmites australis*) stands and groves of narrow-leaved cattail (*Typha angustifolia*). An essential component is an open or semi-open canopy that allows sunlight to reach the herbaceous vegetation. Bog turtles spend a significant amount of time in the spring, summer and fall basking in the sun. Bog turtle habitat typically contains a bottom substrate of soft muck or mucky-like soils which are soft enough for burrowing.

The single unifying characteristic of pure bog turtle habitat is often described as "early successional." Factors that can create such an early successional bog or emergent wetland habitat are somewhat limited. Mutualists (beneficial relationships) to a colony of bog turtles may include beavers, cows and other livestock that graze on herbaceous vegetation. Disturbance factors such as fire and large wind storms can also clear out older vegetation and allow for successional growth. Without these types of disturbances, bog turtle habitat typically continues through natural succession resulting in a wooded wetland with an overstory that no longer provides adequate solar radiation for thermo-regulation; egg incubation; etc (USFWS 2001).

Cold temperatures for one to two consecutive weeks during late October to late November compel bog turtles to retreat to their wintering sites. They will hibernate within subterranean burrows, where springs ensure that water will flow during the winter, preventing the turtles from freezing. Cavities underneath vegetated hummocks are characteristic hibernation areas, however muskrat and meadow vole burrows, sedge clumps and rivulets under soft mud have also been reported (Ernst et al. 1989). Alder (*Alnus* spp.), red maple (*Acer rubrum*), gray birch (*Betula populifolia*) and tamarack (*Larix laricina*) hummocks supporting bog turtle hibernacula have been reported (Klemens 1993a). Hibernating turtles may be found under water in soft mud, in crevices between rocks or between tangled roots.

As daytime air temperatures warm during March or April, bog turtles emerge from hibernation and bask atop sedge tussocks and sphagnum hummocks. Basking increases their body temperature and stimulates the urges for foraging and mating. Bog turtles will forage upon invertebrates, including insects and their larvae, crayfish, mollusks, worms, snails and slugs. Seeds, berries, amphibians and carrion are also eaten.

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Mating activity typically occurs in May and early June. From mid-June to early July, females seek open areas with raised hummocks to deposit their eggs, which is typically a clutch of three to four tiny, white oblong eggs. The elevated sites offer a drier microhabitat for the developing embryos and the eggs will hatch within 48 to 58 days (Liguori and Tesauro 2003).

4.0 Habitat Assessment Methodology

Mr. Bryon DuBois of DEC conducted a Phase I bog turtle habitat assessment on the project site on July 1, 2019. Mr. DuBois is a USFWS – Recognized Qualified Bog Turtle Surveyor in New Jersey, Pennsylvania, New York, Maryland and Delaware. The habitat assessment was conducted using the USFWS Guidelines for Bog Turtle Surveys, Bog Turtle Northern Population Recovery Plan, dated May 15, 2001 and revised October 26, 2018.

Phase I bog turtle habitat assessments are conducted to determine whether or not wetland areas contain potential bog turtle habitat. Three criteria were assessed within the project site to determine habitat suitability: hydrology, soils, and vegetation. Bog turtle wetlands are typically spring-fed with shallow surface water or saturated soils present year-round. Wetlands are typically interspersed with dry and wet pockets and there is often subsurface flow. Shallow rivulets (less than 4 inches deep) or pseudo-rivulets are often present. Bottom substrates may be mineral or organic, however permanently saturated soils are needed to support soft, mucky conditions. Suitable soils are those in which one will typically sink past their ankles. Emergent wetlands containing low grasses and sedges, often with a scrub-shrub wetland component are characteristic vegetation community types. Some forested wetland habitats are suitable given hydrology, soils and/or historic land use (USFWS 2006).

5.0 Phase 1 Habitat Evaluation Results

DEC evaluated the hydrology, soils and vegetation at the wetland complex within the project site. Below are the results of the Phase I bog turtle habitat suitability assessment for each wetland area. Refer to Appendix B for bog turtle habitat evaluation field forms specific to each stream channel area. Refer to *Figure 3: Bog Turtle Habitat Suitability Map* for a depiction of the areas described below.

5.1 Wetland Area A

Wetland A is associated with the Furnace Run and consists of wetlands W-4, W-5, W-6, W-7, and W-8. This wetland area consists of approximately 0.3 acres of palustrine forested wetlands. The hydrologic features present include the surface water associated with Furnace Run and saturated soils that likely saturated year-round. Vegetation within this wetland area includes alder-leaved buckthorn (*Rhamnus alnifolia*), dogwood species (*Cornus spp.*), multiflora rose (*Rosa multiflora*), spicebush (*Lindera benzoin*), Eastern red cedar (*Juniperus virginiana*), red maple (*Acer rubrum*), viburnum species (*Viburnum spp.*), tulip poplar (*Liriodendron tulipifera*), and pignut hickory (*Carya glabra*). The soils with this wetland area were primarily non-mucky. It is this firm's determination that wetland area A is not suitable bog turtle habitat.

5.1 Wetland Area B

Wetland B is associated with the Furnace Run and consists of wetlands W-1, W-2, and W-3. This wetland area consists of approximately 0.1 acres of palustrine emergent wetlands. The hydrologic features within present include the surface water associated with Furnace Run and saturated soils that likely saturated year-round. Vegetation within this wetland area includes dogwood species (*Cornus spp.*), mile-a-minute

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(*Persicaria perfoliata*), reed canary grass (*Phalaris arundinacea*), sensitive fern (*Onoclea sensibilis*), and tearthumb (*Persicaria sagittate*). The soils with this wetland area were primarily non-mucky. It is this firm's determination that wetland area B is not suitable bog turtle habitat.

6.0 Conclusion

DEC evaluated all wetlands in and within 300 feet of the survey location area in Lower Chanceford Township, Chester County, PA. The Phase I bog turtle habitat assessment applies to the identified wetland areas in the vicinity of the project area and does not apply to wetlands outside of the survey location. The habitat assessment was conducted using the USFWS Guidelines for Bog Turtle Surveys, Bog Turtle Northern Population Recovery Plan, dated May 15, 2001 and revised April 2006.

The results of the Phase I bog turtle habitat suitability assessment conclude that the two (2) referenced wetland locations within the project boundary **do not** contain the necessary hydrology, soils and/or vegetation to support the bog turtle, and this area is **not suitable** bog turtle habitat.

Bog Turtle Phase 1 Habitat Suitability Assessment

Furnace Run Interconnection 500kV Transmission Line Project
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7.0 References

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Louis Berger. New Highland – Kinzer Wetland Delineation. ArcGIS Map Viewer.

Natureserve Explorer. 2011. *Glyptemys muhlenbergii*. Accessed July 2019. Available Online at <http://www.natureserve.org/>.

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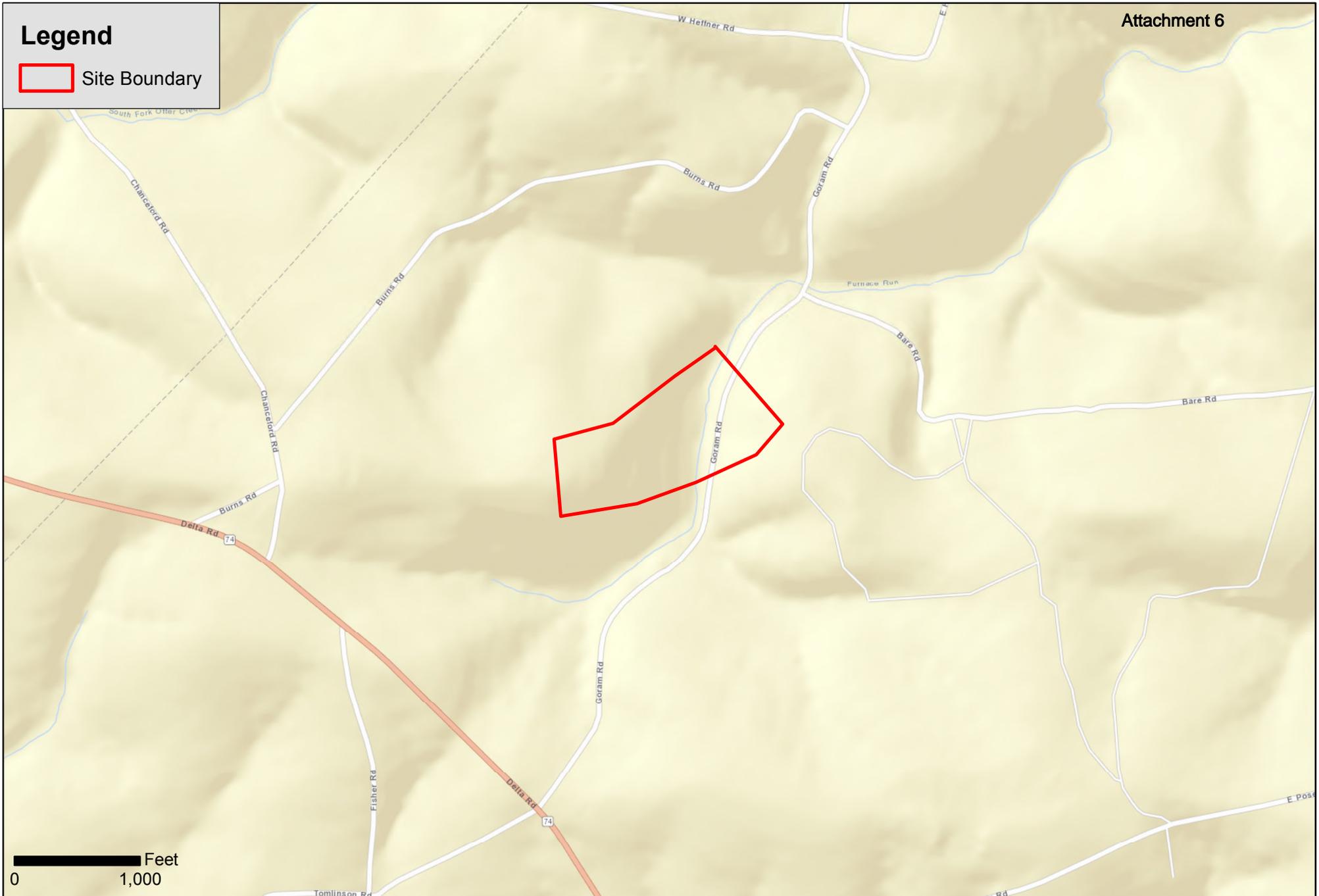
United States Fish and Wildlife Service. 2001. Bog Turtle (*Clemmys muhlenbergii*), Northern Population, Recovery Plan. Hadley, Massachusetts. 103 pp. Revised October 26, 2018.

United States Fish and Wildlife Service. 2006. Guidelines for Bog Turtle Surveys. Revision to Bog Turtle (*Clemmys muhlenbergii*), Northern Population, Recovery Plan. Hadley, Massachusetts. 103 pp.

FIGURES

Legend

 Site Boundary



New Jersey Road Map

Furnace Run Interconnection 500kV Transmission Line Project
Lower Chanceford Township, York County, PA



Sheet No. 1 of 1

Job No.: D1264.022

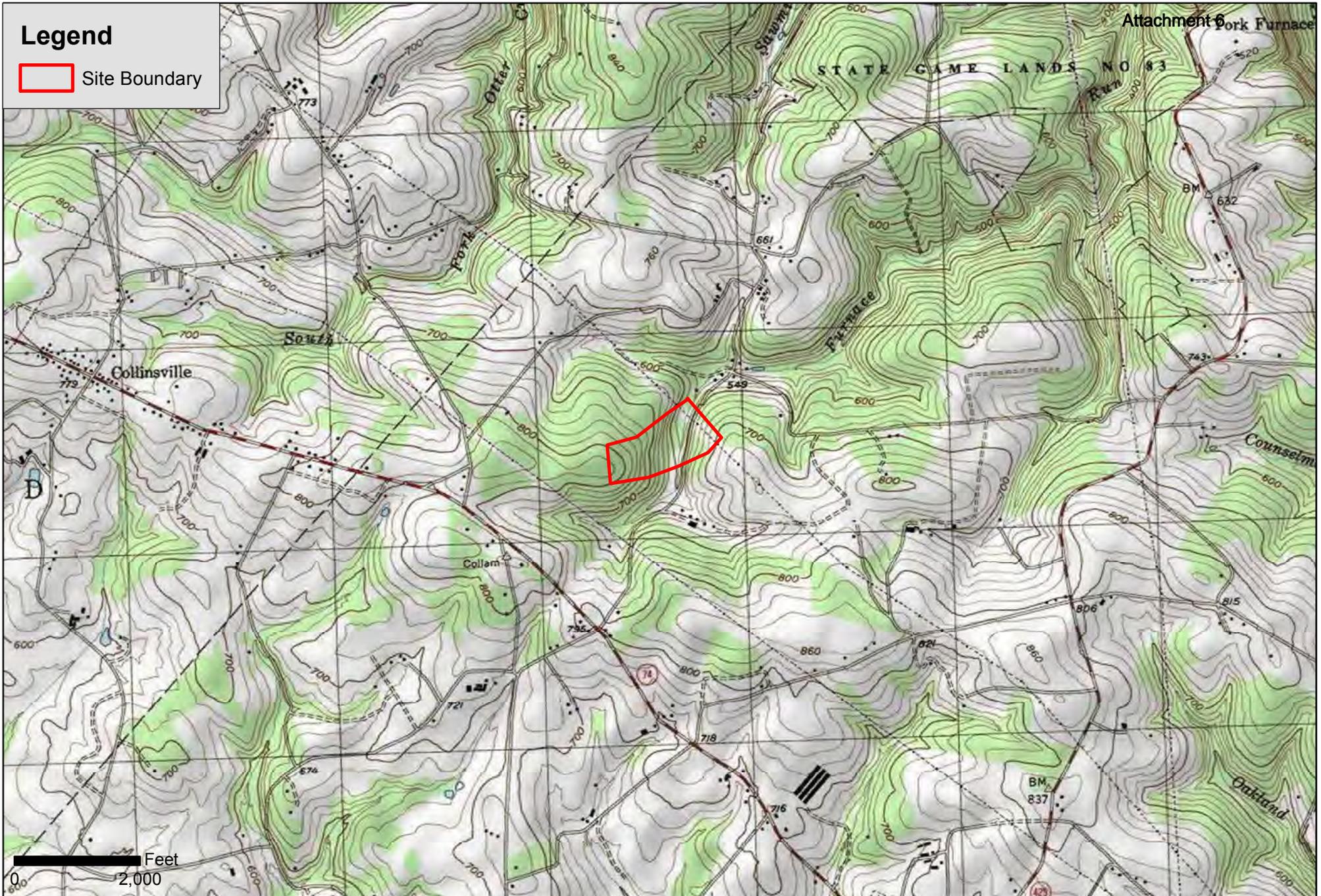
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Date: 7/16/2019

Drawn By: CP

Legend

 Site Boundary



Airville USGS Quadrangle Map

Furnace Run Interconnection 500kV Transmission Line Project
Lower Chanceford Township, York County, PA

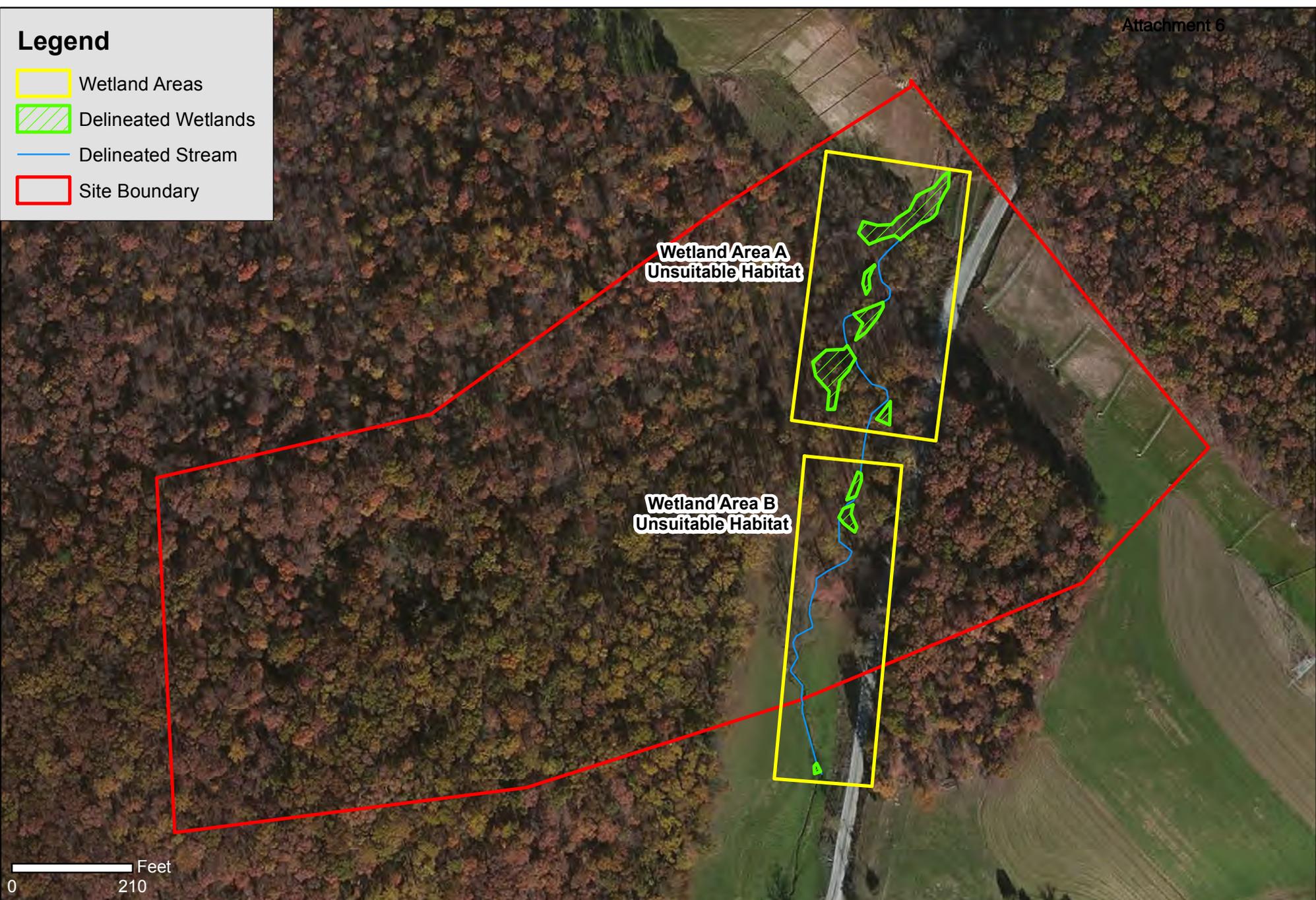


Sheet No. 1 of 1

Job No.: D1264.022
Scale: 1 in = 2,000 ft
Date: 7/16/2019
Drawn By: CP

Legend

-  Wetland Areas
-  Delineated Wetlands
-  Delineated Stream
-  Site Boundary



**Wetland Area A
Unsuitable Habitat**

**Wetland Area B
Unsuitable Habitat**

0 Feet 210



Habitat Suitability Assessment Map

Furnace Run Interconnection 500kV Transmission Line Project
Lower Chanceford Township, York County, PA



Sheet No. 1 of 1

Job No.: D1264.022
Scale: 1 in = 219 ft
Date: 7/22/2019
Drawn By: CP

APPENDIX A

SITE PHOTOGRAPHS

Site Photographs
Furnace Run Interconnection 500kV Transmission Line
Lower Chanceford Township, York County, NJ

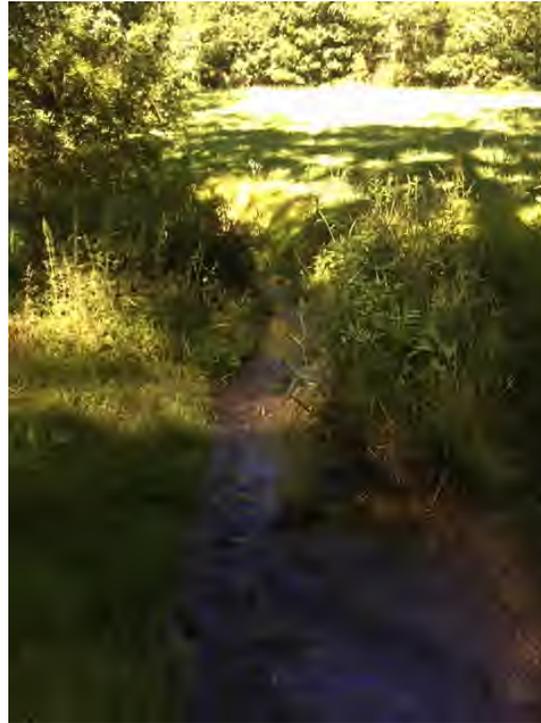


Photo 1: Representative view of Furnace Run in the palustrine emergent wetlands.

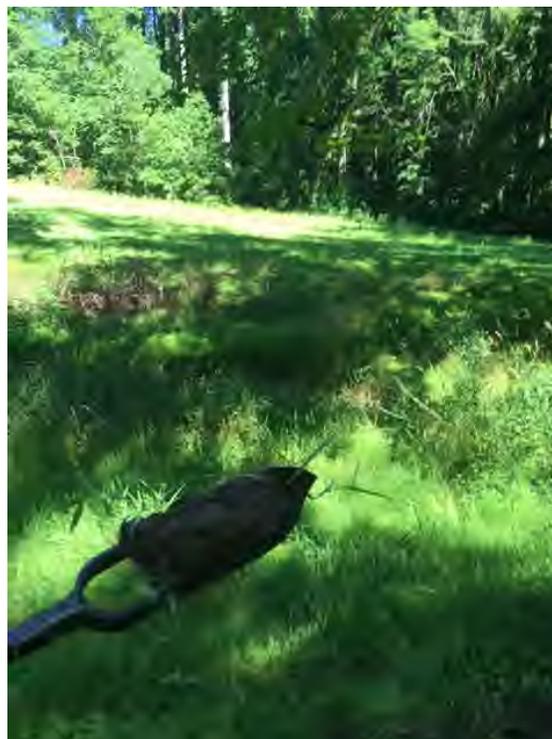


Photo 2: Representative view of the mineral, non-mucky soils in the palustrine emergent wetlands.

Site Photographs
Furnace Run Interconnection 500kV Transmission Line
Lower Chanceford Township, York County, NJ



Photo 3: Representative view of the palustrine emergent wetlands.

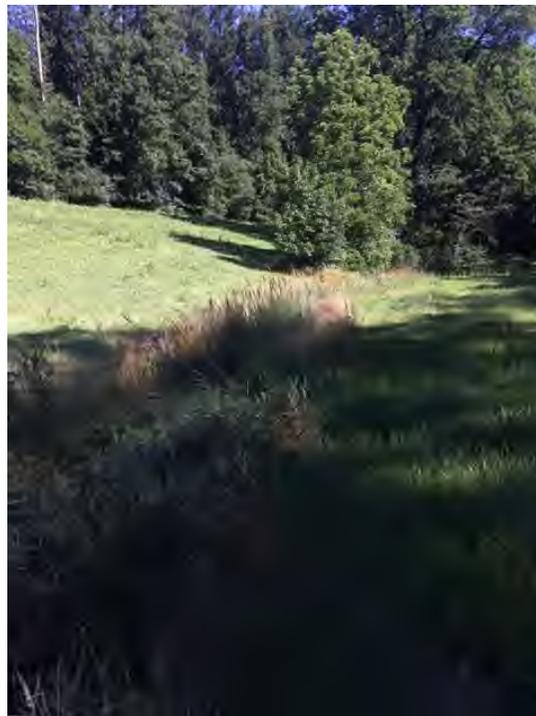


Photo 4: Additional view of the palustrine emergent wetlands.

Site Photographs
Furnace Run Interconnection 500kV Transmission Line
Lower Chanceford Township, York County, NJ

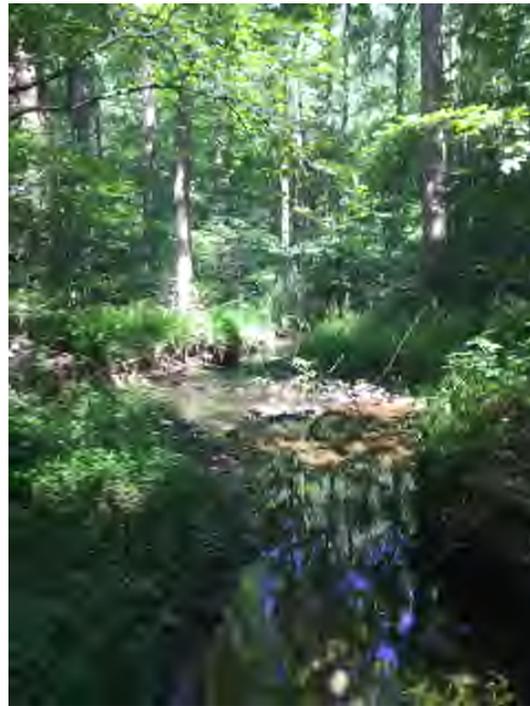


Photo 5: Representative view of Furnace Run in the palustrine forested wetlands.



Photo 6: Representative view of vegetation within the palustrine forested wetlands.

Site Photographs
Furnace Run Interconnection 500kV Transmission Line
Lower Chanceford Township, York County, NJ

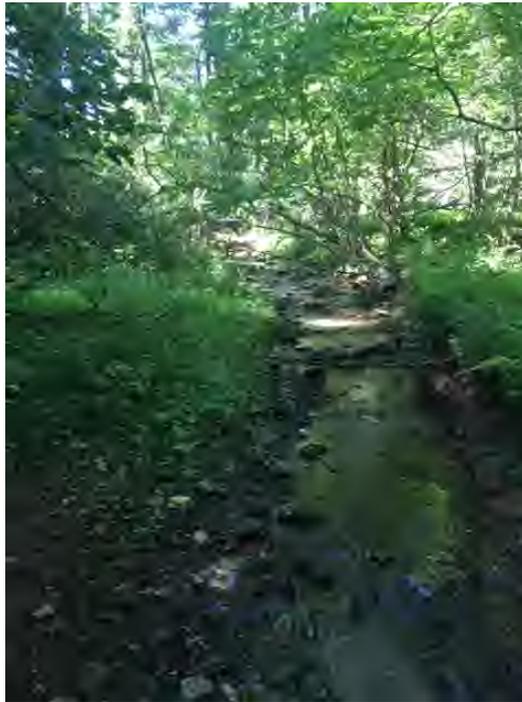


Photo 7: Additional view of Furnace run in the palustrine forested wetlands.



Photo 8: Representative view of the palustrine forested wetlands.

Site Photographs
Furnace Run Interconnection 500kV Transmission Line
Lower Chanceford Township, York County, NJ



Photo 9: Representative view of the upland farm fields.



Photo 10: Additional view of the upland area on site.

Site Photographs
Furnace Run Interconnection 500kV Transmission Line
Lower Chanceford Township, York County, NJ



Photo 11: Additional view of the upland farm fields.



Photo 12: Additional view of the upland farm fields.

APPENDIX B

Bog Turtle Phase I Data Sheets

**Phase 1 Bog Turtle Habitat Survey Data Form
For the Northern Population Range**

Wetland ID: _____

(Revised October 23, 2018)

General Info

Property/Project Name _____ County _____

Entity Requesting Phase 1 Survey (landowner, developer, agency): _____

Township/Municipality: _____

Lead Surveyor: _____ Affiliation: _____

Other Assistants Present: _____

Date/Condition

Date of Survey: _____ Time In: _____ Time Out: _____ Air Temp. _____ F ° C°

Last Precipitation: __ < 24 hours __ 1-7 days __ > 1 week __ unknown Drought conditions? __ YES __ NO __ Unknown

Drought Index*¹ (Circle): D0 D1 D2 D3 D4 Notes (e.g., details about drought, flood, abnormally dry, seasonal conditions):Wetland ID: _____ Wetland Size: _____ acres, if known # Wetlands w/in Project Area²: _____

If estimating wetland size: __ < 0.1 acre __ 0.1-0.5 acre __ 1-2 acres __ 2-4 acres __ 5+ acres __ 10+ acres

% Canopy Cover*³ __ 0% __ ≤ 5 __ 6-20 __ 21-40 __ 41-60 __ > 60

Hydrology and Soils (check all that apply):

 Springs/Seeps Springhouse Trib/Stream Pond Stormwater Iron Bacteria Rivulets (how many _____) (_____ inches deep) Subsurface Tunnel/Rivulets Tire Ruts (_____ inches deep) Saturated soils present? If yes, year-round? Likely Unlikely Unknown Yes No water visible on surface? Small Puddles/Depressions (_____ inches deep) Yes No Are there any signs of disturbance to hydrology (e.g., drainage ditches, tile drainages, berms, culverts, fill material, ponds, roads, beaver impoundment, evidence of flooding)? If yes, describe (if possible, include how recent disturbance is*):

Wetland Info

For ditches that may be present, is there bog turtle habitat? If yes, describe:

 Yes No Are there any signs of disturbance to vegetation (e.g., mowing, pasturing, burning)? If yes, describe (if possible, include level of disturbance*):

Soil types present*:

¹ (*) Denotes reference to the **Supplemental Information** document that provides more details on this particular question.² Each wetland must have a separate Phase 1 habitat assessment data form completed.³ Determine percent cover of abundant species for the wetland, not by wetland type. Abundant species are those that are

PEM Portion of Wetland: Approx. Acre(s) _____ Mucky soils depth (inches) _____

PSS Portion of Wetland: Approx. Acre(s) _____ Mucky soils depth (inches) _____

PFO Portion of Wetland: Approx. Acre(s) _____ Mucky soils depth (inches) _____

PO Portion of Wetland: Approx. Acre(s) _____

CIRCLE all vegetation* from list below that is dominant \geq 20% for each wetland type listed above. Also, CIRCLE calciphiles⁴ present even if not a dominant species.

Wetland Type/Vegetation

Sphagnum Moss	Grass-of-Parnassus	Rice Cutgrass	Tussock Sedge	Shrubby Cinquefoil	Red Maple
Arrowhead	Japanese Stiltgrass	Rough-leaved Goldenrod	White Turtlehead	Spicebush	Viburnum Spp.
Carpetgrass	Jewelweed	Sensitive Fern	Woolly-fruited Sedge	Swamp Rose	
Cattail	Mile-A-Minute	Skunk Cabbage	Yellow Sedge	Alder Spp.	
Cinnamon Fern	Porcupine Sedge	Smooth Sawgrass	Alder-leaved Buckthorn	American Elm	
Common Boneset	Purple Loosestrife	Sweetflag	Dogwood Spp.	Eastern Red Cedar	
Common Reed	Reed Canary Grass	Tearthumb Spp.	Multiflora Rose	Poison Sumac	

Notes on additional plant species (Are there other sedges/rushes/other species dominant that are not on the list above?):

Describe surrounding landscape (e.g., wetlands, forest, subdivision, agricultural field, fallow field, etc.):

Landscape Info

How much of this wetland is located **off-site** (i.e., outside the property boundaries or right-of-way)?

- None of it – the entire wetland is within the property boundaries
 Some of it – _____ Acres or _____% of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the **off-site portion** was surveyed (on foot)?

- None of it All of it Part of it (_____ acres or _____% of the off-site portion)

Is there potential bog turtle habitat **off-site**? Yes No Unknown If yes, how did you conclude this?

Species

Were any bog turtles observed? Yes No If yes, how many? _____

*Note that you must be permitted by the state you are conducting the survey in to handle bog turtles.

Other herps observed? Yes No If yes, which ones?

*Report bog turtle observations to your local FWS Field Office and state wildlife office within 48 hrs.

Lead Surveyor Opinion

- Yes No Unsure The **hydrology** criterion for bog turtle habitat is met.
 Yes No Unsure The **soils** criterion for bog turtle habitat is met.
 Yes No Unsure The **vegetation** criterion for bog turtle habitat is met.
 Yes No Unsure This wetland has potential bog turtle habitat (fair to good quality).
 Yes No Unsure This wetland has potential bog turtle habitat (low to very low quality).
 Yes No Unsure This wetland does **NOT** have potential bog turtle habitat.

Notes (How did you reach this opinion?):

Lead Surveyor – please sign below certifying to the best of your knowledge that all of the information provided herein is accurate and complete.

Signature _____ Date _____

most prominent in the wetland and have the highest percent of coverage compared to other species.

⁴ Pertinent to bog turtle sites found in Connecticut, Massachusetts, New Jersey, New York, and Pennsylvania. See Supplemental Information – Suitable Vegetation section.

**Phase 1 Bog Turtle Habitat Survey Data Form
For the Northern Population Range**

Wetland ID: _____

(Revised October 23, 2018)

General Info

Property/Project Name _____ County _____

Entity Requesting Phase 1 Survey (landowner, developer, agency): _____

Township/Municipality: _____

Lead Surveyor: _____ Affiliation: _____

Other Assistants Present: _____

Date/Condition

Date of Survey: _____ Time In: _____ Time Out: _____ Air Temp. _____ F ° C°

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% Canopy Cover*³ ___ 0% ___ ≤ 5 ___ 6-20 ___ 21-40 ___ 41-60 ___ > 60

Hydrology and Soils (check all that apply):

___ Springs/Seeps ___ Springhouse ___ Trib/Stream ___ Pond ___ Stormwater ___ Iron Bacteria

___ Rivulets (how many _____) (_____ inches deep) ___ Subsurface Tunnel/Rivulets ___ Tire Ruts (_____ inches deep)

___ Saturated soils present? If yes, year-round? ___ Likely ___ Unlikely ___ Unknown

___ Yes ___ No water visible on surface? ___ Small Puddles/Depressions (_____ inches deep)

___ Yes ___ No Are there any signs of disturbance to hydrology (e.g., drainage ditches, tile drainages, berms, culverts, fill material, ponds, roads, beaver impoundment, evidence of flooding)? If yes, describe (if possible, include how recent disturbance is*):

Wetland Info

For ditches that may be present, is there bog turtle habitat? If yes, describe:

___ Yes ___ No Are there any signs of disturbance to vegetation (e.g., mowing, pasturing, burning)? If yes, describe (if possible, include level of disturbance*):

Soil types present*:

¹ (*) Denotes reference to the **Supplemental Information** document that provides more details on this particular question.² Each wetland must have a separate Phase 1 habitat assessment data form completed.³ Determine percent cover of abundant species for the wetland, not by wetland type. Abundant species are those that are

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PFO Portion of Wetland: Approx. Acre(s) _____ Mucky soils depth (inches) _____

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Cattail	Mile-A-Minute	Skunk Cabbage	Yellow Sedge	Alder Spp.	
Cinnamon Fern	Porcupine Sedge	Smooth Sawgrass	Alder-leaved Buckthorn	American Elm	
Common Boneset	Purple Loosestrife	Sweetflag	Dogwood Spp.	Eastern Red Cedar	
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- Some of it – _____ Acres or _____% of the wetland appears to be located off-site

If part of this wetland continues off-site, how much of the **off-site portion** was surveyed (on foot)?

- None of it
- All of it
- Part of it (_____ acres or _____% of the off-site portion)

Is there potential bog turtle habitat **off-site**? Yes No Unknown If yes, how did you conclude this?

Species

Were any bog turtles observed? Yes No If yes, how many? _____

*Note that you must be permitted by the state you are conducting the survey in to handle bog turtles.

Other herps observed? Yes No If yes, which ones?

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- Yes No Unsure The **hydrology** criterion for bog turtle habitat is met.
- Yes No Unsure The **soils** criterion for bog turtle habitat is met.
- Yes No Unsure The **vegetation** criterion for bog turtle habitat is met.
- Yes No Unsure This wetland has potential bog turtle habitat (fair to good quality).
- Yes No Unsure This wetland has potential bog turtle habitat (low to very low quality).
- Yes No Unsure This wetland does **NOT** have potential bog turtle habitat.

Notes (How did you reach this opinion?):

Lead Surveyor – please sign below certifying to the best of your knowledge that all of the information provided herein is accurate and complete.

Signature _____ Date _____

most prominent in the wetland and have the highest percent of coverage compared to other species.

⁴ Pertinent to bog turtle sites found in Connecticut, Massachusetts, New Jersey, New York, and Pennsylvania. See Supplemental Information – Suitable Vegetation section.

APPENDIX C

STATEMENT OF QUALIFICATIONS

Bryon DuBois
Principal Senior Biologist
bdubois@denviro.com



190 North Main Street
Manahawkin, NJ 08050
609-488-2857

<p><u>Education:</u></p> <p>B.S. Biology & Ecology, West Chester University, 1993</p> <p><u>Professional Affiliations:</u></p> <p>NJ Department of Environmental Protection Wetland Mitigation Council 2003 – 2013; 2016 - Present</p> <p>New Jersey Builders Association 1999 – Present</p> <p>Shore Builders Association 2001 – 2013</p> <p>Builders League of South Jersey 2013 - Present</p> <p>Member: Society of Wetland Scientists 1997 – Present</p> <p>Member: The Ecological Society of America 1998 – Present</p> <p>Member: New Jersey Division of Fish, Game and Wildlife Conservation Corps. 2000 – Present</p> <p>Member: Pine Beach Environmental Commission 1995 – 2003</p> <p>Association of N.J. Environmental Commission (ANJEC) 1995 – 2010</p> <p>N.J. Concrete & Aggregate Society 2003 – 2013</p> <p>Southern Ocean County Chamber of Commerce 2014 - Present</p>	<p>Fields of Competence:</p> <p>A resident of Ocean County, Mr. Bryon DuBois has over 25 years' experience in the fields of regulatory compliance, ecology, biology, wetland science, wildlife management, hydrology and habitat restoration. He has managed numerous large scale projects through the approval process in New Jersey, Pennsylvania, Maryland and Delaware. Mr. DuBois is highly respected by the regulatory agencies in N.J. and surrounding states. He has made positive contributions to policies effecting protected species (both state and federal), wetland mitigation, regulation and coastal zone policies through NJDEP, PADEP, MDDNR, DEDNR and ACOE. These contributions have also been through invited participation and professional guidance provided in regulatory agency stakeholder processes.</p> <p>Professional Experience:</p> <p>After seven (7) early years in the consulting business Mr. Bryon DuBois created an environmental consulting firm in 2000 that focused on ecological and environmental issues that the regulated community was facing. Mr. DuBois has applied logical and objective solutions to some of the most difficult environmental projects and has constantly found a balance between environmentalists and developers alike. Mr. DuBois operates the firm and ensures successful completion of projects through management and coordination of numerous employees. Mr. DuBois operates the firm to promote the client's interest while providing the regulatory agencies with the documentation they require for approvals. The end result is typically a project or product that is both environmentally sound and in the best interest of the client.</p> <p>Mr. DuBois has been requested to present topics related to environmental regulations at the Atlantic City Builders Convention, the Eastern Region Airports Conference in Hershey, Pennsylvania, the U.S. Fish and Wildlife Bog Turtle Convention, the N.J. Pinelands Commission, the Louisiana Fish and Game and dozens of planning boards in towns across N.J. and P.A. His diverse experience has made him a respectable candidate to speak publicly on projects that require many different issues from ecology to water quality.</p> <p>Mr. DuBois began designing and managing the construction of wetland mitigation projects tailored to a specific habitat type or land use in 1998. Over the years his projects were approved and exceeded the standard requirements without increasing costs for the client. These mitigation projects helped Mr. DuBois become nominated to the State of New Jersey's Wetland Mitigation Council in 2003 by the Governor of New Jersey. Mr. DuBois has reviewed and received approval for numerous mitigation related projects and banks in New Jersey, Pennsylvania and Maryland.</p> <p>From 2003 to the present-day Mr. DuBois has successfully managed, designed and received approval for projects ranging from airports to industrial centers, wastewater management facilities and large commercial areas along with thousands of residential dwellings. This has involved performing numerous long term studies on several influential species such as Bog Turtles, Pine Snakes, and Indiana Bats along with assessments of habitat and creation of mitigation measures. Mr. DuBois has held over 320 scientific collecting permits for surveys performed within the Mid-Atlantic States, many of which involve a telemetry component.</p> <p>Mr. DuBois also has extensive experience coordinating with various utility companies to provide wetland, ecological surveys and monitoring services necessary to support utility line improvement and upgrade projects, which also involves regulatory agency coordination through implementation of both Pennsylvania Fish and Boat Commission and New Jersey Department of Environmental Protection standards</p>
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Bryon DuBois
Principal Senior Biologist
bdubois@denviro.com



190 North Main Street
Manahawkin, NJ 08050
609-488-2857

Certifications:

Professional Wetland Scientist
Society of Wetland Scientist

Certified Sr. Ecologist, The
Ecological Society of America

Recognized Qualified Bog
Turtle Surveyor – N.J., N.Y.,
P.A., D.E., M.D.

Recognized Qualified Indiana
and Northern Long Eared Bat
Surveyor – N.J., N.Y., P.A.

Certified Subsurface Evaluator
NJDEP# 0001940

Recognized Qualified Delmarva
Fox Squirrel Surveyor – M.D.,
D.E.

Pennsylvania Qualified
Herpetologist for Various
Species

The projects of relevance presented below have been successfully completed through the management and coordination of Mr. DuBois with the client and regulatory agencies.

Projects of Relevance:

NEW JERSEY:

- *NJ DOT Permitting and Threatened and Endangered Species*
 - o Route 206 – Taylor, Wiseman, Taylor and NJDOT, Atlantic County, NJ
 - o Route 46 - Taylor, Wiseman & Taylor and NJDOT, Warren County, NJ
- *Ecological Monitoring, Threatened/Endangered Species Studies & Wetlands Assessments*
 - o A.C. Electric Co. South Jersey Multiple Transmission Line Upgrades
 - BL England Transmission Line Upgrade, Atlantic, Burlington & Salem Counties
 - Cove Road Transmission Line Upgrade, Cape May County
 - Orchard to Lewis Transmission Line Upgrades, Atlantic County
 - Oyster-Creek Cardiff Transmission Line Wetland Mitigation, Ocean County
- *Threatened/Endangered Species Studies & Permitting- Pinelands*
 - o NJNG Southern Reliability Line – Townships of Manchester, Jackson, Lakehurst, Plumsted, Chesterfield, and North Hanover, Ocean and Burlington Counties, NJ
 - o Clayton Companies - Shulton Property, Glidden Sand Mine & Woodmansie Sand Mine – Ocean and Burlington Counties, NJ
 - o Cutt Brothers Farm Service Restoration project- Burlington County
- *Federal Involvement/Federal Oversight*
 - o Swamp Pink Monitoring at Various Sites – Atlantic, Warren Counties, NJ
 - o Various Distribution Center Applications; Bat Studies – Warran Township, Montville Township, Morris Co, NJ, Mt. Pocono, Northampton Co, PA.
 - o Bear Creek Construction Monitoring- Burlington County, NJ.
- *Wetland Mitigation Approvals/Monitoring*
 - o GEHR Mitigation Bank - Evergreen Environmental, Gloucester County, NJ
 - o MBB Mitigation Bank - Evergreen Environmental
 - o Bell Labs –Riparian Mitigation - Toll Brothers, Inc. Monmouth County, NJ
 - o Bamm Hollow – Wetland Mitigation - Toll Brothers, Inc., Monmouth County, NJ

PENNSYLVANIA:

- *Threatened/Endangered Species Studies*
 - o Westtown Lake Turtle Relocation, Westtown School, Chester County, PA
 - o Haverford College Red Bellied Turtle Relocation, Delaware County, PA
- *Threatened/Endangered Species Studies & ACOE Permitting*
 - o Scudder Falls Bridge Replacement, Michael Baker Inc., Yardley, PA
- *Permitting and Jurisdictional Determinations*
 - o Brookdale – 1200 Acre wetland delineation, SK Design Group, Monroe County PA
 - o Shartlesville – 520-acre wetland delineation in Burkes County, PA
 - o 2016 PPL Reliability Project – Surveyed approximately 100 Miles of PPL Right of way throughout Lancaster, Lebanon and Berks County.

DELAWARE:

- *Threatened/Endangered Species Studies, Permitting & Wetlands*
 - o DPL - Church to Wye Mills Transmission Line Upgrade, Kent County, DE
 - o DPL - MD Transmission Line Upgrades from 2009-2014 Kent County to Sussex County DE

MARYLAND:

- *Threatened/Endangered Species Studies, Permitting & Wetlands*
 - o Pepco – Bald Eagle Hazing and Nest Construction, Brandywine MD.
 - o Kent County Wetland Mitigation Project, Delineation and Assessment

APPENDIX D

Pennsylvania Natural Diversity Inventory

1. PROJECT INFORMATION

Project Name: **PECO Furnace Run Interconnection 500kV Transmission Line**

Date of Review: **8/21/2019 08:02:41 AM**

Project Category: **Energy Storage, Production, and Transfer, Energy Transfer, Power/electric line - New (new location for above/under-ground line)**

Project Area: **28.15 acres**

County(s): **York**

Township/Municipality(s): **LOWER CHANCEFORD**

ZIP Code: **17309**

Quadrangle Name(s): **AIRVILLE**

Watersheds HUC 8: **Lower Susquehanna**

Watersheds HUC 12: **Muddy Run-Susquehanna River**

Decimal Degrees: **39.853400, -76.419045**

Degrees Minutes Seconds: **39° 51' 12.2394" N, 76° 25' 8.5620" W**

This is a draft receipt for information only. It has not been submitted to jurisdictional agencies for review.

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	Potential Impact	MORE INFORMATION REQUIRED, See Agency Response

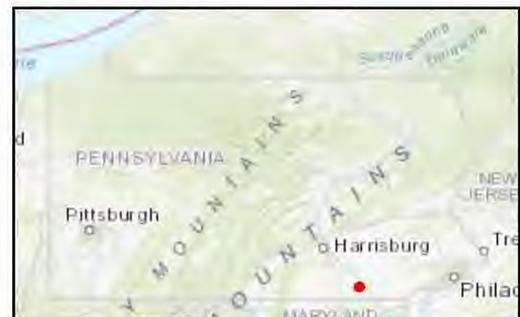
As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

Note that regardless of PNDI search results, projects requiring a Chapter 105 DEP individual permit or GP 5, 6, 7, 8, 9 or 11 must comply with the bog turtle habitat screening requirements of the PASPGP.

PECO Furnace Run Interconnection 500kV Transmission Line

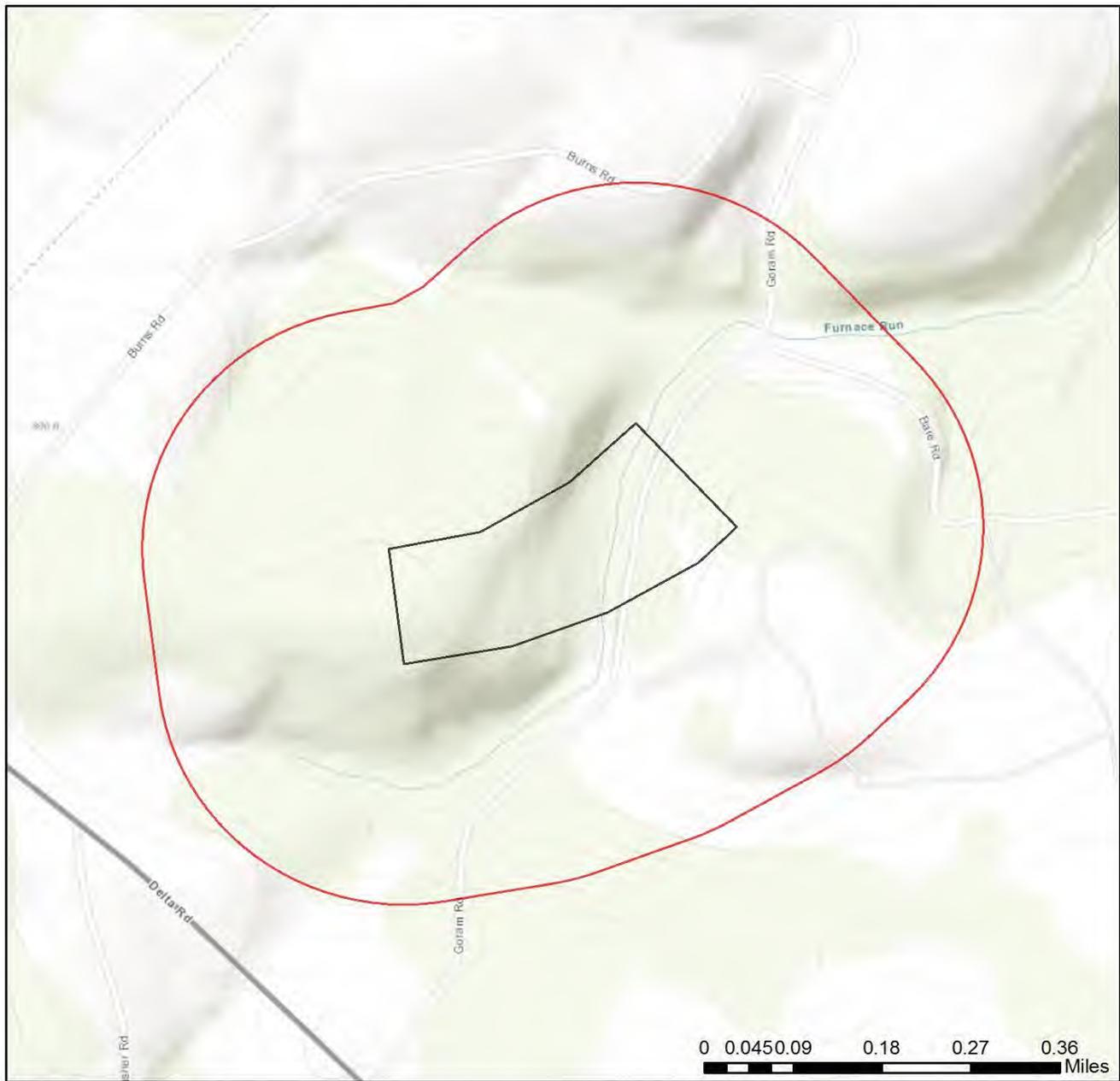


- Project Boundary
- Buffered Project Boundary



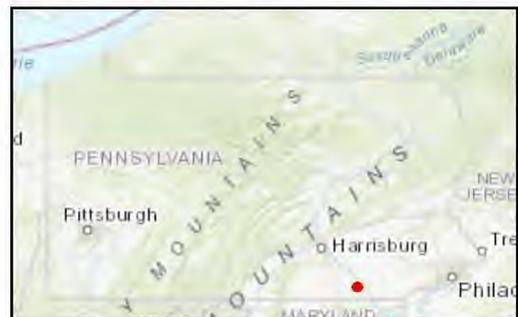
Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community

PECO Furnace Run Interconnection 500kV Transmission Line



- Project Boundary
- Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS,



RESPONSE TO QUESTION(S) ASKED

Q1: Will this project or any project-related activities require any in-stream work, or a permanent or temporary crossing of a waterway (stream, river, creek, tributary)?

Your answer is: Yes

Q2: Accurately describe what is known about wetland presence in the project area or on the land parcel by selecting ONE of the following. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur.

Your answer is: Someone qualified to identify and delineate wetlands has investigated the site, and determined that wetlands ARE located in or within 300 feet of the project area. (A written report from the wetland specialist, and detailed project maps should document this.)

Q3: The proposed project is in the range of the Indiana bat. Describe how the project will affect bat habitat (forests, woodlots and trees) and indicate what measures will be taken in consideration of this. Round acreages up to the nearest acre (e.g., 0.2 acres = 1 acre).

Your answer is: The project will affect 1 to 39 acres of forests, woodlots and trees.

Q4: Is tree removal, tree cutting or forest clearing of 40 acres or more necessary to implement all aspects of this project?

Your answer is: No

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE:

Information Request: Conduct a Bog Turtle Habitat (Phase 1) Survey in accordance with USFWS Guidelines for Bog Turtle Surveys (April 2006). Evaluate all wetlands within 300 feet of the project area, which includes all areas that will be impacted by earth disturbance or project features (e.g., roads, structures, utility lines, lawns, detention basins, staging areas, etc.). IF THE PHASE 1 SURVEY IS DONE BY A QUALIFIED BOG TURTLE SURVEYOR (see <https://www.fws.gov/northeast/pafo/endangered/surveys.html>): 1) Send positive results to USFWS for concurrence, along with a project description documenting how impacts will be avoided. OR, conduct a Phase 2 survey and send Phase 1 and 2 results to USFWS for concurrence. 2) Send a courtesy copy of negative results to USFWS (label as "Negative Phase 1 Survey Results by Qualified Bog Turtle Surveyor: USFWS Courtesy Copy"). USFWS approval of negative results is not necessary when a qualified surveyor does the survey in full accordance with USFWS guidelines. IF THE PHASE 1 SURVEY IS NOT DONE BY A QUALIFIED SURVEYOR: Send ALL Phase 1 results to USFWS for concurrence, and if potential habitat is found, also send a project description documenting how impacts will be avoided. As a qualified bog turtle surveyor, I Bryon Davis (name) certify that I conducted a Phase 1 survey of all wetlands in and within 300 feet of the project area on 7/1/19 (date) and determined that bog turtle habitat is absent.

 (Signature)

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email* the following information to the agency(s). Instructions for uploading project materials can be found [here](#). This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies. Alternatively, applicants may email or mail their project materials (see AGENCY CONTACT INFORMATION).

*Note: U.S. Fish and Wildlife Service requires applicants to mail project materials to the USFWS PA field office (see AGENCY CONTACT INFORMATION). USFWS will not accept project materials submitted electronically (by upload or email).

Check-list of Minimum Materials to be submitted:

Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.

A map with the project boundary and/or a basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)

In addition to the materials listed above, USFWS REQUIRES the following

SIGNED copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.

Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)

Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at <https://conservationexplorer.dcnr.pa.gov/content/resources>.



5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.



ATTACHMENT 7

1. PROJECT INFORMATION

Project Name: **PECO Furnace Run Interconnection 500kV Transmission Line**

Date of Review: **10/2/2020 04:07:44 PM**

Project Category: **Energy Storage, Production, and Transfer, Energy Transfer, Power/electric line - New (new location for above/under-ground line)**

Project Area: **28.19 acres**

County(s): **York**

Township/Municipality(s): **LOWER CHANCEFORD**

ZIP Code: **17309**

Quadrangle Name(s): **AIRVILLE**

Watersheds HUC 8: **Lower Susquehanna**

Watersheds HUC 12: **Muddy Run-Susquehanna River**

Decimal Degrees: **39.853402, -76.419044**

Degrees Minutes Seconds: **39° 51' 12.2482" N, 76° 25' 8.5583" W**

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	Potential Impact	MORE INFORMATION REQUIRED, See Agency Response

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate there may be potential impacts to threatened and endangered and/or special concern species and resources within the project area. If the response above indicates "No Further Review Required" no additional communication with the respective agency is required. If the response is "Further Review Required" or "See Agency Response," refer to the appropriate agency comments below. Please see the DEP Information Section of this receipt if a PA Department of Environmental Protection Permit is required.

PECO Furnace Run Interconnection 500kV Transmission Line



- Project Boundary
- Buffered Project Boundary



Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China

PECO Furnace Run Interconnection 500kV Transmission Line



- Project Boundary
- Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community



RESPONSE TO QUESTION(S) ASKED

Q1: Will this project or any project-related activities require any in-stream work, or a permanent or temporary crossing of a waterway (stream, river, creek, tributary)?

Your answer is: Yes

Q2: Accurately describe what is known about wetland presence in the project area or on the land parcel by selecting ONE of the following. "Project" includes all features of the project (including buildings, roads, utility lines, outfall and intake structures, wells, stormwater retention/detention basins, parking lots, driveways, lawns, etc.), as well as all associated impacts (e.g., temporary staging areas, work areas, temporary road crossings, areas subject to grading or clearing, etc.). Include all areas that will be permanently or temporarily affected -- either directly or indirectly -- by any type of disturbance (e.g., land clearing, grading, tree removal, flooding, etc.). Land parcel = the lot(s) on which some type of project(s) or activity(s) are proposed to occur.

Your answer is: Someone qualified to identify and delineate wetlands has investigated the site, and determined that wetlands ARE located in or within 300 feet of the project area. (A written report from the wetland specialist, and detailed project maps should document this.)

Q3: The proposed project is in the range of the Indiana bat. Describe how the project will affect bat habitat (forests, woodlots and trees) and indicate what measures will be taken in consideration of this. Round acreages up to the nearest acre (e.g., 0.2 acres = 1 acre).

Your answer is: The project will affect 1 to 39 acres of forests, woodlots and trees.

Q4: Is tree removal, tree cutting or forest clearing of 40 acres or more necessary to implement all aspects of this project?

Your answer is: No

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jurisdictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources

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PA Fish and Boat Commission

RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service

RESPONSE:

Information Request: Conduct a Bog Turtle Habitat (Phase 1) Survey in accordance with USFWS Guidelines for Bog Turtle Surveys (April 2020). Evaluate all wetlands within 300 feet of the project area, which includes all areas that will be impacted by earth disturbance or project features (e.g., roads, structures, utility lines, lawns, detention basins, staging areas, etc.). IF THE PHASE 1 SURVEY IS DONE BY A QUALIFIED BOG TURTLE SURVEYOR (see <https://www.fws.gov/northeast/pafo/endangered/surveys.html>): 1) Send positive results to USFWS for concurrence, along with a project description documenting how impacts will be avoided. OR, conduct a Phase 2 survey and send Phase 1 and 2 results to USFWS for concurrence. 2) Send a courtesy copy of negative results to USFWS (label as "Negative Phase 1 Survey Results by Qualified Bog Turtle Surveyor: USFWS Courtesy Copy"). USFWS approval of negative results is not necessary when a qualified surveyor does the survey in full accordance with USFWS guidelines. IF THE PHASE 1 SURVEY IS NOT DONE BY A QUALIFIED SURVEYOR: Send ALL Phase 1 results to USFWS for concurrence, and if potential habitat is found, also send a project description documenting how impacts will be avoided. As a qualified bog turtle surveyor, I Byron Dubois (name) certify that I conducted a Phase 1 survey of all wetlands in and within 300 feet of the project area on 7/19/19 (date) and determined that bog turtle habitat is absent.

 (Signature)

Avoidance Measure: Avoid in-stream impacts by spanning the waterway or going under it (e.g., via horizontal boring or directional drilling). If in-stream impacts cannot be avoided, carry out instream work -- including installation of permanent structures (e.g., pipelines, livestock crossings, riprap), or installation, use, and removal of temporary structures (e.g., temporary road crossings) -- between October 1 and March 31.

As the project proponent or applicant, I certify that I will implement the above Avoidance Measure:
 _____ (Signature)

SPECIAL NOTE: If you agree to implement the above Avoidance Measure and if applicable, any Information Requests, no further coordination with this agency regarding threatened and endangered species and/or special concern species and resources is required. If you are not able to comply with the Avoidance Measures, you are required to coordinate with this agency - please send project information to this agency for review (see "What to Send" section).

WHAT TO SEND TO JURISDICTIONAL AGENCIES

If project information was requested by one or more of the agencies above, upload* or email* the following information to the agency(s). Instructions for uploading project materials can be found [here](#). This option provides the applicant with the convenience of sending project materials to a single location accessible to all three state agencies. Alternatively, applicants may email or mail their project materials (see AGENCY CONTACT INFORMATION).

Check-list of Minimum Materials to be submitted:

___ Project narrative with a description of the overall project, the work to be performed, current physical characteristics of the site and acreage to be impacted.

___ A map with the project boundary and/or a basic site plan (particularly showing the relationship of the project to the physical features such as wetlands, streams, ponds, rock outcrops, etc.)

In addition to the materials listed above, USFWS REQUIRES the following

___ **SIGNED** copy of a Final Project Environmental Review Receipt

The inclusion of the following information may expedite the review process.

___ Color photos keyed to the basic site plan (i.e. showing on the site plan where and in what direction each photo was taken and the date of the photos)

___ Information about the presence and location of wetlands in the project area, and how this was determined (e.g., by a qualified wetlands biologist), if wetlands are present in the project area, provide project plans showing the location of all project features, as well as wetlands and streams.

ATTACHMENT 8

Letter of Notification Filing Checklist

Revised October 2018

In an effort to facilitate the Commission's review process for a Letter of Notification (LON) for the Siting and Construction of Electric Transmission Lines, the following checklist may be consulted by the applicant. The applicable regulatory requirements for a LON application are found in 52 Pa. Code §§ 57.71-77. The checklist is provided to streamline the review process by anticipating requests for additional information that may arise from Commission staff. The checklist does not create additional mandates or regulatory requirements for approval of a LON.

1. Provide the name of the applicant and the address of its principal business office.

See Letter of Notification, ¶¶ 1-2.

2. Name, title and business address of the attorney of the applicant and the person authorized to receive notice and communications with respect to the application if other than the attorney or the applicant.

See Letter of Notification, ¶ 3.

3. General description of the proposed route of the HV line, to include the number of route miles, the right-of-way width and the location of the proposed HV line within each city, borough, town and township traversed. Describe which sections of 52 Pa. Code §57.72(d)(1)(i)-(iv) the applicant believes are applicable.

See Letter of Notification, ¶¶ 16-17 and 26-28, Attachments 1-2 and Attachment 4.

4. Provide a general statement of the need for the proposed HV line in meeting identified present and future demands for service, of how the proposed HV line will meet that need and of the engineering justification for the proposed line.

See Letter of Notification, ¶¶ 8-15.

5. Please provide an engineering assessment of the project including information to address the following:

- a) **Provide an analysis of minimum conductor clearances and conductor thermal ratings.**
- b) **Provide engineering design criteria and parameters such as vertical clearance to ground.**
- c) **Provide an explanation as to how the project will be in compliance with the current NESC and, where applicable, information on how the applicant's design specifications and safety rules may exceed NESC suggested standards for transmission lines.**

See Letter of Notification, ¶¶ 20 and 23-25.

- 6. If applicable, provide the current height of the structures expected to be replaced, the proposed height of the new structures to be installed and the height of the structures to remain in place. Provide the number of structures proposed vs. current number of structures. Provide the location and footprint of the current structures compared to the proposed structures.**

See Letter of Notification, ¶ 19 and Attachment 3.

- 7. If applicable, state if any properties/easements that did not previously have structures will now have a structure. State if the easement agreement allows for structures on these properties that did not previously have a structure. Explain the Company's process of informing the property owners that a structure will be placed on the easement to their property.**

See Letter of Notification, ¶¶ 38-40 and 43 and Notice of Filing.

- 8. If applicable, what is the PJM project ID No. for the proposed project? Has this project been submitted to the PJM Transmission Expansion Advisory Committee (TEAC)? If so, please provide a description of the project as submitted to the TEAC. If this project is part of a larger project, summarize the larger project of which the LON is a part. Please describe how this project may mitigate potential planning criteria violations.**

See Letter of Notification, ¶¶ 8-15.

- 9. Provide a breakdown of project costs. Please explain who will own, finance and build the proposed project.**

See Letter of Notification, ¶ 21.

- 10. If available at the time the LON is filed, please provide a copy of any comments received from state or local officials.**

See Letter of Notification, ¶ 41.

- 11. Please provide the anticipated construction commencement date and the proposed in-service date of the project.**

See Letter of Notification, ¶ 22.

- 12. Provide evidence to show that the size, character, design and configuration of the proposed HV line will not substantially alter its existing right-of-way, if applicable. Please identify all alterations necessary to the existing right-of-way.**

Not applicable. Of the total 0.53 miles of new 500 kV transmission lines to be constructed, 280 feet will be located within an existing PECO 500 kV right-of-way and 0.49 miles will be located within a new 350-foot wide right-of-way. No alterations to PECO's right-of-way for its existing Peach Bottom-TMI 500 kV Transmission Line are necessary.

- 13. A statement identifying the filing date on which the filing of the LON was or is to be made and a statement as found in 57.72(d)(iv) regarding the Commission's review.**

See Letter of Notification, ¶ 46.

- 14. Provide the number of streams and/or wetlands that will be crossed. Describe how these will be addressed. Will any endangered or threatened species be affected? If a PNDI is required, please provide the results.**

See Letter of Notification, ¶¶ 35-37 and Attachments 6-7.

- 15. Indicate the number of circuits on the proposed line. Note that if only one is being installed at this time, another LON may be needed when the second circuit is added.**

See Letter of Notification, ¶¶ 20 and 23-25.

- 16. Please provide a copy of the certificate of service.**

See Letter of Notification, Certificate of Service.

- 17. Provide the specific NERC or other regulatory standard criteria which is driving the proposed project (e.g. TPL-004-1, P.2).**

See Letter of Notification, ¶¶ 8-15.

- 18. Explain why the NERC, or other regulatory standard, violation, is now an issue where it wasn't previously.**

See Letter of Notification, ¶¶ 8-15.

- 19. Explain whether the proposed project meets NERC or PJM minimum planning criteria or whether it exceeds these criteria to meet transmission owner planning criteria. If the project exceeds either of these minimum planning criteria to meet transmission owner criteria, provide a detailed explanation as to why.**

See Letter of Notification, ¶¶ 8-15.

- 20. Explain whether load growth in the area has led to any change in circumstances as it relates to the need for the proposed project. If so, quantify these load growth impacts.**

See Letter of Notification, ¶¶ 8-15.

- 21. State the age and anticipated service life and describe the overall health of the transmission line facilities to be replaced. Additionally, include information related to conditions which may have accelerated aging or led to premature failure of the facilities (e.g. corrosive environment).**

Not Applicable. This question inquires about the status of existing facilities. There are no existing facilities at this location. PECO will be constructing new facilities to interconnect the new 500 kV/230 kV Furnace Run Substation that Transource Pennsylvania, LLC (“Transource”) plans to construct and operate as part of its proposed Independence Energy Connection Project (“IEC Project”) with the existing 500 kV system. See Letter of Notification, ¶¶ 15-21.

- 22. Provide information regarding any unplanned outages on the subject transmission facilities over the previous 5 years (or more), including the duration, cause, whether service to customers was interrupted by outages on the subject transmission line(s), and if so, the number and type of customers which were impacted. Additionally, explain whether the proposed project would mitigate the effects of these outages.**

Not Applicable. This question inquires about unplanned outages on the subject transmission facilities and associated service interruptions. PECO will be constructing new connecting transmission lines to tap PECO’s existing Peach Bottom-TMI 500 kV Transmission Line in order to connect it to the new Furnace Run Substation, which is part of Transource’s larger IEC Project. The IEC Project was identified by PJM Interconnection L.L.C. (“PJM”) through its Regional Transmission Expansion Plan (“RTEP”) process as a “required” RTEP “baseline” project. See Letter of Notification, ¶¶ 8-15.

- 23. Explain whether alternative solutions were considered. If so, provide a brief description of the alternative(s) and provide a detailed explanation of why the chosen solution was selected.**

See Letter of Notification, ¶¶ 28-38.

- 24. Explain whether any of the loads served by the transmission facilities to be replaced are considered to be critical customers.**

Not Applicable. This question inquires about the loads served by existing transmission facilities. No current carrying transmission facilities will be replaced as part of the proposed project. See Responses to Questions 21 and 22 above; Letter of Notification, ¶¶ 15-21.

25. Quantify the anticipated increase in reliability in terms of customer average interruption duration index, system average interruption duration index, and system average interruption frequency index.

Not Applicable. The proposed Project is needed to interconnect the Furnace Run Substation that Transource proposes to operate as part of its IEC Project to the bulk power system. PJM identified the IEC Project as a “required” 2016 RTEP “baseline” project to alleviate transmission congestion constraints in Pennsylvania and Maryland. *See* Letter of Notification, ¶¶ 8-15.

26. If a transmission owner customer requested the proposed project and is not paying the entire cost, explain why the costs will be assumed by other transmission owner customers.

Not Applicable. A PECO transmission owner customer did not request the proposed project, which is part of Transource’s larger IEC Project. PJM identified the IEC Project as a “required” 2016 RTEP “baseline” project. PJM, on behalf of transmission owners, charges RTEP costs to load serving entities in the transmission zones that are assigned cost responsibility for the applicable RTEP projects.

27. Provide a detailed description of the methodology used to determine that the subject transmission facilities have reached the end of their useful service life. Additionally, provide any survival curves or utility specific data used in this determination.

Not Applicable. This question inquires about the useful service life of existing facilities. PECO will not replace existing transmission facilities under the proposed project. PECO’s existing Peach Bottom-TMI 500 kV Transmission Line will provide the 500 kV power source to the 500 kV side of the new Furnace Run Substation proposed by Transource as part of its IEC Project. *See* Responses to Questions 21-22 and 24 above; Letter of Notification, ¶¶ 15-21.

**BEFORE THE
PENNSYLVANIA PUBLIC UTILITY COMMISSION**

**LETTER OF NOTIFICATION OF PECO :
ENERGY COMPANY, FILED :
PURSUANT TO 52 PA. CODE :
CHAPTER 57 SUBCHAPTER G, :
FOR APPROVAL TO SITE AND : DOCKET NO. A-2020-_____**
**CONSTRUCT 0.5 MILES OF :
TRANSMISSION LINES IN LOWER :
CHANCEFORD TOWNSHIP, YORK :
COUNTY, PENNSYLVANIA TO :
INTERCONNECT TO THE :
TRANSMISSION GRID THE NEW 500- :
230 KV FURNACE RUN SUBSTATION :
PROPOSED BY TRANSOURCE :
PENNSYLVANIA, LLC :**

CERTIFICATE OF SERVICE

I hereby certify that on this date, a true and correct copy of the foregoing **Letter of Notification of PECO Energy Company** has been served upon the following persons, in the manner indicated, in accordance with the requirements of 52 Pa. Code § 1.54 (relating to service by a participant).

**VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED**

PA Department of Environmental Protection
Rachel Carson Office Building
P.O. Box 2063
Harrisburg, PA 17105-2063
Attn: Office of Field Operations

Lower Chanceford Township
4120 Delta Road
Airville, PA 17302
Attn: Sue Wiley, Zoning Officer

PA Department of Environmental Protection
Rachel Carson Office Building
P.O. Box 2063
Harrisburg, PA 17105-2063
Attn: Bureau of Environmental Planning

Tanya J. McCloskey
Office of Consumer Advocate
555 Walnut Street
Forum Place, 5th Floor
Harrisburg, PA 17101-1925

York County Planning Office
28 East Market Street
York PA 17401
Attn: Felicia Dell, Planning Director
Wade Gobrecht, Assistant Director
Kurt Leitholf, Chief
Municipal Planning Division

Richard A. Kanaskie
Bureau of Investigation and Enforcement
PA Public Utility Commission
Commonwealth Keystone Building
400 North Street, 2nd Floor West
P.O. Box 3265
Harrisburg, PA 17105-3265

John R. Evans
Office of Small Business Advocate
300 North Street, Suite 202
Harrisburg, PA 17101

Texas Eastern Transmission, L.P.
5400 Westheimer Court
Houston, TX 77056-5310

U.S. Army Corps of Engineers*
Baltimore District (Pennsylvania Section)
Regulatory Branch
1631 South Atherton Street, Suite 102
State College, PA 16801
Attn: Wade Chandler, Chief
Pennsylvania Section

PA Department of Environmental Protection*
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, PA 17110
Attn: Rod Nesmith, Regional Director

U.S. Fish and Wildlife Service*
PA Field Office Northeast Region
110 Radnor Road, Suite 101
State College, PA 16801
Attn: Robert Anderson

PA Historical & Museum Commission*
Bureau for Historic Preservation
Commonwealth Keystone Building
400 North Street, 2nd Floor
Harrisburg, PA 17120
Attn: Andrea Bakewell Lowery,
Executive Director
Andrew MacDonald, Bureau Director

PA Department of Transportation*
Commonwealth Keystone Building
400 North Street, 9th Floor
Harrisburg, PA 17120
Attn: Yasmin Gramian, P.E.
Secretary of Transportation

David L. & Christine Y. Druck*
2243 Woodbine Road
Airville, PA 17302-9405

Samuel W. & Kay L. Taylor*
118 Goram Road
Brogue, PA 17309

William S. & Sandra A. Harbold*
221 Goram Road
Brogue, PA 17309

William C. Miller*
164 Bowman Road
Hanover, PA 17331

Mary E. Snyder*
236 Fisher Road
Airville, PA 17302

David C. Miller*
12244 Lucky Road
Broque, PA 17309

John C. Miller*
12244 Lucky Road
Broque, PA 17309

Donald D. Glatfelter*
22697 Careys Camp Road
Millsborough, DE 19966

Daniel D. Glatfelter*
261 Fisher Road
Airville, PA 17302-9320

Steven S. Glatfelter*
61 West Chestnut Street
Dallastown, PA 17313

Barbara B. Buckley*
3505 Sutter Court
Fort Worth, TX 76137

Joanne G. Gladfelter*
524 Cottage Place
Red Lion, PA 17356

Linda L. Donley*
720 Boxwood Road,
Red Lion, PA 17356

Connie C. Hogan*
11500 Lexington Avenue NE
Albuquerque, NM 87112

*Parties that are entitled to receive a Notice of Filing pursuant to 52 Pa. Code § 57.72(d)(3) were served a copy of the Notice of Filing and a courtesy copy of the Letter of Notification.

Respectfully submitted,



Anthony E. Gay (Pa. No. 74624)
Jack R. Garfinkle (Pa. No. 81892)
Jennedy S. Johnson (Pa. No. 203098)
PECO Energy Company
2301 Market Street
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