



TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
LEIDY SOUTH PROJECT

APPENDIX G
COMPRESSOR STATION 620A WETLAND AND WATERCOURSE DELINEATION REPORT
HEGINS TOWNSHIP, SCHUYLKILL COUNTY, PENNSYLVANIA

Table of Contents

Section

- 1.0 Introduction
- 2.0 Desktop Analysis
 - 2.1 USGS Topographic and LiDAR Data
 - 2.2 Aerial Photography
 - 2.3 National Wetland Inventory
 - 2.4 USDA/NRCS Soil Descriptions
- 3.0 Results
 - 3.1 Wetlands
 - 3.2 Waterways
- 4.0 Conclusions
- 5.0 References

Figures

- 1 Project Location Map
- 2 USDA-NRCS Soils and NWI Map

Attachments

- A Wetland and Water Resource Delineation Data Package
 - Water Resources Delineation Map
 - Photographic Documentation
 - Wetland, Upland and Waterway Data Forms
- B Wetland and Water Resource Summary Table

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
LEIDY SOUTH PROJECT

APPENDIX G
COMPRESSOR STATION 620A WETLAND AND WATERCOURSE DELINEATION REPORT
HEGINS TOWNSHIP, SCHUYLKILL COUNTY, PENNSYLVANIA

1.0 INTRODUCTION

WHM Consulting, Inc. (WHM) was retained by Transcontinental Gas Pipe Line Company, LLC (Transco) to conduct a delineation of wetland and water resources associated with the Compressor Station 620A (Project) located in Hegins Township, Schuylkill County, Pennsylvania (Figure 1 – Project Location Map). The purpose of this investigation was to determine whether regulated wetlands and waters exist within the subject project area in accordance with U.S. Army Corps of Engineers (USACE) guidelines which as regulated under Section 404 of the Clean Water Act (CWA) and Pa Code 25 Chapter 105. This report provides information on the desktop analysis, data collected, delineation field findings, and results pertaining to wetland and water resources identified in the study area. The delineation was performed in March 2019.

2.0 DESKTOP ANALYSIS

Prior to conducting field investigations, a review of natural resource data associated with the investigation area was completed to help establish probable areas where wetlands and watercourses could be located before conducting the onsite field investigation. The following sections outlined specific data reviewed for the investigation area.

2.1 USGS TOPOGRAPHIC AND LIDAR DATA

The 7.5-minute USGS quadrangles for Tremont, Pennsylvania, were reviewed in the vicinity of the project area. For more detailed topographic information, PAMAP LiDAR (2-foot Intervals) was reviewed to determine slope breaks and microtopography that could result in wetlands and/or waterways.

2.2 AERIAL PHOTOGRAPHY

Multiple sources of online accessible current and historical aerial imagery were reviewed. In particular, leaf-off aerial imagery was evaluated for saturation that may persist long enough into the growing season to create wetland conditions.

2.3 NATIONAL WETLAND INVENTORY

The U.S. Fish and Wildlife Service National Wetlands Inventory (NWI) mapping within and surrounding the project area is presented in Figure 2 - USDA-NRCS Soils and NWI Map. According to NWI mapping there is 1 NWI wetland located within the investigation area (See Table 2-1).

NWI Code	NWI Wetland Name	Quantity
PFO1C	Palustrine, Forested, Broadleaf, Seasonally Flooded	1

Table 2-1. NWI Wetlands

2.4 USDA/NRCS SOIL DESCRIPTIONS

The soil associations onsite are identified through the soil map units mapped by the United States Department of Agriculture – Natural Resources Conservation Service (USDA-NRCS) in the Soil Survey of Schuylkill County, Pennsylvania. In addition, the hydric soils list for Clinton County was reviewed to determine if these soils are Hydric Soils or contain Hydric Inclusion. There are 10 soil mapping units located within the investigation area. Each soil series and their hydric rating is provided in Table 2-1.

Soil Mapping Unit	Map Unit Name	Slope (%)	Hydric Soil/ Hydric Inclusion
At	Atkins loam	-	Yes
Ba	Basher silt loam	-	Yes
BxB	Buchanan extremely stony loam	3 to 8	Yes
CaB	Calvin shaly silt loam	3 to 8	Yes
CaC	Calvin shaly silt loam	3 to 8	Yes
KeB	Kedron silt loam	3 to 8	No
LeB	Leck kill channery silt loam	3 to 8	No
LeC	Leck kill channery silt loam	8 to 15	No
MeB	Meckesville loam	3 to 8	No
WKF	Weikert and Klinesville shaly silt loams, steep	-	No

Table 2-2: Soil Mapping Unit and Hydric Soils Listing

3.0 RESULTS

After the completion of a desktop analysis, a formal wetland delineation was completed. Areas exhibiting the potential for regulated wetlands and waters were evaluated to determine whether they satisfied the USACE and/or PADEP requirements. Attachment A includes specific information for each resource including: wetland delineation mapping, photographic documentation, and data forms. Attachment B – Wetland and Water Resource Summary Tables, provides specific information for each resource identified within the investigation area. The Pennsylvania Level 2 Rapid Assessment Report is provided in Attachment C. The following sections provide a brief summary of the resources identified within the investigation area.

3.1 WETLANDS

In total, 2 wetlands were identified during the delineation. One of the wetland identified had been previously impacted during past farming activities. Wetland were defined as either "Other" or "Exceptional Value" based on Pa Code Title 25, Chapter 105.17 – Wetlands. Approximately 75,012 square feet of PEM wetlands and 147,517 square feet of palustrine forested (PFO) wetlands were identified.

3.2 WATERWAYS

In total, 3 waterways were identified during the delineation. Approximately 368 square feet of ephemeral channels, 2,258 square feet of intermittent channels, and 94,066 square feet of perennial channels were identified.

4.0 CONCLUSIONS

Based on the results of the field investigation 222,529 square feet of wetlands and 96,692 square feet of stream channel were identified within the investigation area. Any impacts to the identified resources would require authorization under PADEP and USACE guidelines.

5.0 REFERENCES

- Cowardin, L. M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands deepwater habitats of the United States. U.S. Department of the Interior and the Fish and Wildlife Service, Washington, D.C.
- Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Tech. Rep. Y-87-1. U.S. Army Engineer Waterways Experiment Station, Vicksburg, M.S.
- Lichvar, R.W., D.L. Banks, W.N. Kirchner, and N.C. Melvin. 2016. The National Wetland Plant List: 2016 wetland ratings. Phytoneuron 016-30: 1-17. Published 28 April 2016. ISSN 2153 733. http://wetland-plants.usace.army.mil/nwpl_static/v33/home/home.html
- Munsell Color (Firm). Munsell Soil Color Charts: with Genuine Munsell Color Chips. Grand Rapids, MI: Munsell Color, 2010. Print.
- Pennsylvania Code. 2010. Pennsylvania Code Title 25, Chapter 105 <http://www.pacode.com/secure/data/025/025toc.html>. Accessed December 3, 2018.
- U.S. Army Corps of Engineers. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountain and Piedmont Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, C. V. Noble, and J. F. Berkowitz. ERDC/EL TR-12-1. Vicksburg, MS: U.S. Army Engineer Research and Development Center.
- Soil Survey Staff, Natural Resources Conservation Service, United States Department of Agriculture. Official Soil Series Descriptions [Online WWW]. Available URL: <http://soils.usda.gov/technical/classification/osd/index.html>. Accessed 2/6/19. USDA-NRCS, Lincoln, NE.
- United State Department of Agriculture Soil Conservation Service. 1982. Soil Survey of Schuylkill County Pennsylvania
- United States Fish and Wildlife Service. National Wetland Inventory Map, 7.5 Minute Series, Tremont, Pennsylvania.
- United States Geological Survey. Topographic Quadrangle 7.5-minute Series Quadrangles, Tremont, Pennsylvania.
- U.S. Geological Survey. 2018. Hydrography: National Hydrography Dataset and Watershed Boundary Dataset. <http://nhd.usgs.gov/>. Accessed February 6, 2019.

FIGURES



2525 Green Tech Drive, Suite B,
 State College, PA 16803
 Tele: 814.689.1650 Fax: 814.689.1557

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
LEIDY SOUTH PROJECT
COMPRESSOR STATION 620-A
PROJECT LOCATION MAP

HEGINS TOWNSHIP

SCHUYLKILL COUNTY

PENNSYLVANIA

Date:	05/15/19
WHM DRAWING NUMBER:	WILLIAMS206A001
Drawn By:	BWH
Figure Number:	1



- Water Resources Investigation Area
- Soil Mapping Boundary
- NWI Wetland



2525 Green Tech Drive, Suite B,
 State College, PA 16803
 Tele: 814.689.1650 Fax: 814.689.1557

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
LEIDY SOUTH PROJECT
COMPRESSOR STATION 620-A

USDA-NRCS SOILS AND NWI MAP

HEGINS TOWNSHIP

SCHUYLKILL COUNTY

PENNSYLVANIA

Date:	05/15/19
WHM DRAWING NUMBER:	WILLIAMS206A002
Drawn By:	BWH
Figure Number:	2

ATTACHMENT A
WETLAND AND WATER RESOURCE DELINEATION DATA PACKAGE

WATER RESOURCES DELINEATION MAP

PHOTOGRAPHIC DOCUMENTATION



ID: Photo 1
Date: 3/20/2019
Taken by: JH
Comments:
 This photo shows a view of S1-T2-620A



ID: Photo 2
Date: 3/20/2019
Taken by: PD
Comments:
 This photo shows a view of S2-T2-620A



ID: Photo 3
Date: 3/20/2019
Taken by: PD
Comments:
 This photo shows a view of S3-T2-620A



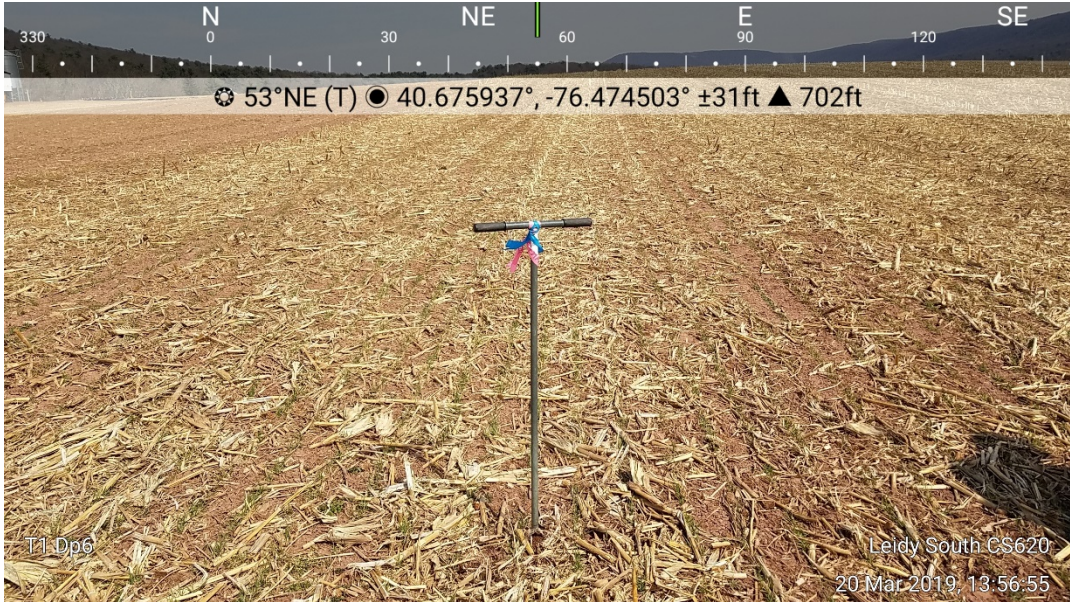
ID: Photo 4
Date: 3/20/2019
Taken by: JH
Comments:
 This photo shows a view of W1-T1-620A within the forested portion



ID: Photo 5
Date: 3/20/2019
Taken by: JH
Comments:
 This photo shows a view of W1-T1-620A within the PEM portion



ID: Photo 6
Date: 3/20/2019
Taken by: PD
Comments:
 This photo shows a view of W2-T2-620A



ID: Photo 7
Date: 3/20/2019
Taken by: JH
Comments:
 This photo shows a view of an upland corn field within the investigation area



ID: Photo 8
Date: 3/20/2019
Taken by: JH
Comments:
 This photo shows a view of a grass lined swale within the investigation area.

WETLAND, UPLAND, AND WATERWAYS DATA FORMS

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Leidy South Project City/County: Schuylkill County Sampling Date: 03/20/2019
 Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: W1-T1-620A-1a
 Investigator(s): DW, JH Section, Township, Range: Hegins Township
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): LRR N Lat.: 40.67328 Long.: -76.4738 Datum: NAD 83
 Soil Map Unit Name: At: Atkins silt loam NWI Classification: none
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes x No (If no, explain in remarks)
 Are vegetation N, soil N, or hydrology N significantly disturbed? Are "normal circumstances" present? Yes x No
 Are vegetation N, soil N, or hydrology N 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? <u>Yes</u> Hydric soil present? <u>Yes</u> Wetland hydrology present? <u>Yes</u>	Is the sampled area within a wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <input checked="" 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 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)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsley Vegetated Concave Surface <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 type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
--	---	--

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>1"</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0"</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0"</u> (includes capillary fringe)	Wetland hydrology present? Yes <u>X</u> No <u> </u>
---	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: W1-T1-620A-1a

Tree Stratum (Plot Size: _____ 30' _____)	Absolute % Cover	Dominant Species	Indicator Staus
1 _____	_____	_____	_____
2 _____	_____	_____	_____
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____
6 _____	_____	_____	_____
7 _____	_____	_____	_____
	0 =	Total Cover	

Sapling/Shrub Stratum (Plot Size: _____ 15' _____)	Absolute % Cover	Dominant Species	Indicator Staus
1 _____	_____	_____	_____
2 _____	_____	_____	_____
3 _____	_____	_____	_____
4 _____	_____	_____	_____
5 _____	_____	_____	_____
6 _____	_____	_____	_____
7 _____	_____	_____	_____
	0 =	Total Cover	

Herb Stratum (Plot Size: _____ 5' _____)	Absolute % Cover	Dominant Species	Indicator Staus
1 <i>Juncus effusus</i>	40	Yes	FACW
2 <i>Carex lurida</i>	40	Yes	OBL
3 <i>Microstegium vimineum</i>	30	Yes	FAC
4 <i>Poa trivialis</i>	10	No	FACW
5 _____	_____	_____	_____
6 _____	_____	_____	_____
7 _____	_____	_____	_____
8 _____	_____	_____	_____
	120 =	Total Cover	

Woody Vine Stratum (Plot Size: _____ 30' _____)	Absolute % Cover	Dominant Species	Indicator Staus
1 _____	_____	_____	_____
2 _____	_____	_____	_____
3 _____	_____	_____	_____
4 _____	_____	_____	_____
	0 =	Total Cover	

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	40	x 1 =	40
FACW species	50	x 2 =	100
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	120	(A)	230 (B)

Prevalence Index = B/A = 2

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid test for hydrophytic vegetation
 - 2 - Dominance test is >50%
 - 3 - Prevalence index is ≤3.0*
 - 4 - Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
 - 5 - Problematic hydrophytic vegetation* (explain)
- *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present?

Yes	<u>X</u>	No	_____
-----	----------	----	-------

SOIL

Sampling Point: W1-T1-620A-1a

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*	Loc**		
0-12"	10YR 5/1	75	7.5YR 5/6	25	C	M	Clay Loam	

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

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

Indicators for Problematic Hydric Soils:

- Red Parent Material (F21) **(MLRA 127, 147)**
- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Leidy South Project City/County: Schuylkill County Sampling Date: 03/20/2019
 Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: W1-T1-620A-1c
 Investigator(s): DW, JH Section, Township, Range: Hegins Township
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): LRR N Lat.: 40.671438 Long.: -76.472012 Datum: NAD 83
 Soil Map Unit Name: At: Atkins silt loam NWI Classification: PFO1C: Freshwater Forested/Shrub Wetland
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes x No (If no, explain in remarks)
 Are vegetation N, soil N, or hydrology N significantly disturbed? Are "normal circumstances" present? Yes x No
 Are vegetation N, soil N, or hydrology N 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? <u>Yes</u> Hydric soil present? <u>Yes</u> Wetland hydrology present? <u>Yes</u>	Is the sampled area within a wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <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 checked="" 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)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsley Vegetated Concave Surface <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> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0"</u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>0"</u> (includes capillary fringe)	Wetland hydrology present? Yes <u>X</u> No <u> </u>
---	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: W1-T1-620A-1c

<u>Tree Stratum</u> (Plot Size: <u>30'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	<u>60</u>	<u>Yes</u>	<u>FACW</u>
2	<u> </u>	<u> </u>	<u> </u>
3	<u> </u>	<u> </u>	<u> </u>
4	<u> </u>	<u> </u>	<u> </u>
5	<u> </u>	<u> </u>	<u> </u>
6	<u> </u>	<u> </u>	<u> </u>
7	<u> </u>	<u> </u>	<u> </u>
	<u>60</u> =	Total Cover	
<u>Sapling/Shrub Stratum</u> (Plot Size: <u>15'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	<u>30</u>	<u>Yes</u>	<u>FACW</u>
2	<u>20</u>	<u>Yes</u>	<u>FAC</u>
3	<u> </u>	<u> </u>	<u> </u>
4	<u> </u>	<u> </u>	<u> </u>
5	<u> </u>	<u> </u>	<u> </u>
6	<u> </u>	<u> </u>	<u> </u>
7	<u> </u>	<u> </u>	<u> </u>
	<u>50</u> =	Total Cover	
<u>Herb Stratum</u> (Plot Size: <u>5'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	<u>30</u>	<u>Yes</u>	<u>FAC</u>
2	<u>30</u>	<u>Yes</u>	<u>OBL-UPL</u>
3	<u>25</u>	<u>Yes</u>	<u>OBL-UPL</u>
4	<u>10</u>	<u>No</u>	<u>FACW</u>
5	<u> </u>	<u> </u>	<u> </u>
6	<u> </u>	<u> </u>	<u> </u>
7	<u> </u>	<u> </u>	<u> </u>
8	<u> </u>	<u> </u>	<u> </u>
	<u>95</u> =	Total Cover	
<u>Woody Vine Stratum</u> (Plot Size: <u>30'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	<u> </u>	<u> </u>	<u> </u>
2	<u> </u>	<u> </u>	<u> </u>
3	<u> </u>	<u> </u>	<u> </u>
4	<u> </u>	<u> </u>	<u> </u>
	<u>0</u> =	Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 5 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 71.43% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column totals (A) (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

 1 - Rapid test for hydrophytic vegetation

X 2 - Dominance test is >50%

 3 - Prevalence index is ≤3.0*

 4 - Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

 5 - Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes X No

Remarks:

SOIL

Sampling Point: W1-T1-620A-1c

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*	Loc**		
0-5"	5YR 4/2	75	2.5YR 5/6	25			Clay Loam	
5-12"	5YR 4/2	75	2.5YR 5/6	25			Clay	

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

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

Indicators for Problematic Hydric Soils:

- Red Parent Material (F21) **(MLRA 127, 147)**
- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Leidy South Project City/County: Schuylkill County Sampling Date: 03/20/2019
 Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: W1-T1-620A-2a
 Investigator(s): DW, JH Section, Township, Range: Hegins Township
 Landform (hillslope, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): LRR N Lat.: 40.671272 Long.: -76.471532 Datum: NAD 83
 Soil Map Unit Name: At: Atkins silt loam NWI Classification: none
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes x No (If no, explain in remarks)
 Are vegetation N, soil N, or hydrology N significantly disturbed? Are "normal circumstances" present? Yes x No
 Are vegetation N, soil N, or hydrology N 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? <u>Yes</u> Hydric soil present? <u>Yes</u> Wetland hydrology present? <u>Yes</u>	Is the sampled area within a wetland? Yes <u>X</u> No <u> </u>
Remarks: Field, stunted stress no corn/vegeation.	

HYDROLOGY

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 checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Drift Deposits (B3) <input checked="" 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 checked="" type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsley Vegetated Concave Surface <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 type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations: Surface water present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u>2"</u> (includes capillary fringe)	Wetland hydrology present? Yes <u>X</u> No <u> </u>
--	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: W1-T1-620A-2a

<u>Tree Stratum</u> (Plot Size: <u>30'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
	<u>0</u> =	Total Cover	

<u>Sapling/Shrub Stratum</u> (Plot Size: <u>15'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
	<u>0</u> =	Total Cover	

<u>Herb Stratum</u> (Plot Size: <u>5'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	<u>15</u>	<u>Yes</u>	<u>FAC</u>
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____
	<u>15</u> =	Total Cover	

<u>Woody Vine Stratum</u> (Plot Size: <u>30'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
	<u>0</u> =	Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>0</u>	x 2 =	<u>0</u>
FAC species	<u>15</u>	x 3 =	<u>45</u>
FACU species	<u>0</u>	x 4 =	<u>0</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column totals	<u>15</u>	(A)	<u>45</u> (B)

Prevalence Index = B/A = 3.00

Hydrophytic Vegetation Indicators:

 1 - Rapid test for hydrophytic vegetation

X 2 - Dominance test is >50%

 3 - Prevalence index is ≤3.0*

 4 - Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

 5 - Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes X No

Remarks: Data point taken at the edge of a cornfield where an algal mat and very little vegetation were present .

SOIL

Sampling Point: W1-T1-620A-2a

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*	Loc**		
0-12"	7.5YR 4/2	90	5YR 5/6	90			Clay Loam	

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

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

Indicators for Problematic Hydric Soils:

- Red Parent Material (F21) **(MLRA 127, 147)**
- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
--	---

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Leidy South Project City/County: Schuylkill County Sampling Date: 03/20/2019
 Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: Up-W1-T1-620A-1a
 Investigator(s): DW, JH Section, Township, Range: Hegins Township
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): _____ Slope (%): 0
 Subregion (LRR or MLRA): LRR N Lat.: 40.671335 Long.: -76.471176 Datum: NAD 83
 Soil Map Unit Name: Ba: Basher silt loam NWI Classification: none
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes x No _____ (If no, explain in remarks)
 Are vegetation N, soil N, or hydrology N significantly disturbed? Are "normal circumstances" present? Yes x No _____
 Are vegetation N, soil N, or hydrology N 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? <u>No</u> Hydric soil present? <u>No</u> Wetland hydrology present? <u>No</u>	Is the sampled area within a wetland? Yes _____ No <u>X</u>
Remarks: _____	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <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)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsley Vegetated Concave Surface <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 - Use scientific names of plants

Sampling Point: Up-W1-T1-620A-1a

<u>Tree Stratum</u> (Plot Size: <u>30'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
	<u>0</u> =	Total Cover	

<u>Sapling/Shrub Stratum</u> (Plot Size: <u>15'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
	<u>0</u> =	Total Cover	

<u>Herb Stratum</u> (Plot Size: <u>5'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	<u>Zea mays</u> 100	Yes	UPL
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____
	<u>100</u> =	Total Cover	

<u>Woody Vine Stratum</u> (Plot Size: <u>30'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
	<u>0</u> =	Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 0 x 4 = 0

UPL species 100 x 5 = 500

Column totals 100 (A) 500 (B)

Prevalence Index = B/A = 5

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid test for hydrophytic vegetation
 - 2 - Dominance test is >50%
 - 3 - Prevalence index is ≤3.0*
 - 4 - Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
 - 5 - Problematic hydrophytic vegetation* (explain)
- *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present?

Yes	<u> </u>	No	<u> X </u>
-----	---------------	----	--------------

Remarks: Data point was taken in a crop field

SOIL

Sampling Point: Up-W1-T1-620A-1a

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*	Loc**		
0-12"	7.5YR 4/3	100					Loam	

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

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

Indicators for Problematic Hydric Soils:

- Red Parent Material (F21) **(MLRA 127, 147)**
- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? Yes _____ No _____ X _____
--	--

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Leidy South Project City/County: Schuylkill County Sampling Date: 03/20/2019
 Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: W1-T2-620A-1a
 Investigator(s): CG Section, Township, Range: Hegins Township
 Landform (hillslope, terrace, etc.): Floodplain Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): LRR N Lat.: 40.670504 Long.: -76.470622 Datum: NAD 83
 Soil Map Unit Name: At: Atkins silt loam NWI Classification: R5UBH: Riverine
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes x No (If no, explain in remarks)
 Are vegetation N, soil N, or hydrology N significantly disturbed? Are "normal circumstances" present? Yes x No
 Are vegetation N, soil N, or hydrology N 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? <u>Yes</u> Hydric soil present? <u>Yes</u> Wetland hydrology present? <u>Yes</u>	Is the sampled area within a wetland? Yes <u>X</u> No <u> </u>
Remarks:	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <input checked="" 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 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)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsley Vegetated Concave Surface <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 type="checkbox"/> Microtopographic Relief (D4) <input checked="" type="checkbox"/> FAC-Neutral Test (D5)
--	---	--

Field Observations: Surface water present? Yes <u>X</u> No <u> </u> Depth (inches): <u>6-12"</u> Water table present? Yes <u>X</u> No <u> </u> Depth (inches): <u> </u> Saturation present? Yes <u>X</u> No <u> </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland hydrology present? Yes <u>X</u> No <u> </u>
--	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Standing water in the middle of wetland attached to stream through inlet without outflow.

VEGETATION - Use scientific names of plants

Sampling Point: W1-T2-620A-1a

Tree Stratum (Plot Size: _____ 30' _____)		Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____
7	_____	_____	_____	_____
		<u>0</u>	= Total Cover	

Sapling/Shrub Stratum (Plot Size: _____ 15' _____)		Absolute % Cover	Dominant Species	Indicator Staus
1	<i>Betula nigra</i>	2	Yes	FACW
2	<i>Cornus amomum</i>	2	Yes	FACW
3	_____	_____	_____	_____
4	_____	_____	_____	_____
5	_____	_____	_____	_____
6	_____	_____	_____	_____
7	_____	_____	_____	_____
		<u>4</u>	= Total Cover	

Herb Stratum (Plot Size: _____ 5' _____)		Absolute % Cover	Dominant Species	Indicator Staus
1	<i>Carex lurida</i>	50	Yes	OBL
2	<i>Juncus effusus</i>	30	Yes	FACW
3	<i>Dichanthelium scabriusculum</i>	10	No	OBL
4	<i>Dichanthelium clandestinum</i>	5	No	FAC
5	<i>Persicaria sagittata</i>	5	No	OBL
6	_____	_____	_____	_____
7	_____	_____	_____	_____
8	_____	_____	_____	_____
		<u>100</u>	= Total Cover	

Woody Vine Stratum (Plot Size: _____ 30' _____)		Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____	_____
2	_____	_____	_____	_____
3	_____	_____	_____	_____
4	_____	_____	_____	_____
		<u>0</u>	= Total Cover	

Remarks:

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	<u>65</u>	x 1 =	<u>65</u>
FACW species	<u>34</u>	x 2 =	<u>68</u>
FAC species	<u>5</u>	x 3 =	<u>15</u>
FACU species	<u>0</u>	x 4 =	<u>0</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column totals	<u>104</u>	(A)	<u>148</u> (B)

Prevalence Index = B/A = 1

Hydrophytic Vegetation Indicators:

 1 - Rapid test for hydrophytic vegetation

X 2 - Dominance test is >50%

X 3 - Prevalence index is ≤3.0*

 4 - Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

 5 - Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present? Yes X No

SOIL

Sampling Point: W1-T2-620A-1a

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*	Loc**		
0-3"	10YR 4/4						Coarse sand	
3-12"	7.5YR 5/1	98	7.5 YR 5/6	2	C	M	Sandy clay	

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

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

Indicators for Problematic Hydric Soils:

- Red Parent Material (F21) **(MLRA 127, 147)**
- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Yes No

Remarks: Redox present

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Leidy South Project City/County: Schuylkill County Sampling Date: 03/20/2019
 Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: Up-W1-T2-620A-1a
 Investigator(s): CG Section, Township, Range: Hegins Township
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): LRR N Lat.: 40.670669 Long.: -76.470743 Datum: NAD 83
 Soil Map Unit Name: At: Atkins silt loam NWI Classification: none
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes x No (If no, explain in remarks)
 Are vegetation N, soil N, or hydrology N significantly disturbed? Are "normal circumstances" present? Yes x No
 Are vegetation N, soil N, or hydrology N 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? <u>No</u> Hydric soil present? <u>No</u> Wetland hydrology present? <u>No</u>	Is the sampled area within a wetland? Yes <u> </u> No <u>X</u>
Remarks: data point taken at the edge of a corn field within the floodplain of Deep Creek	

HYDROLOGY

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"/> Sparsley Vegetated Concave Surface <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 <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland hydrology present? Yes <u> </u> No <u>X</u>
--	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: Up-W1-T2-620A-1a

<u>Tree Stratum</u> (Plot Size: <u>30'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
	<u>0</u> =	Total Cover	

<u>Sapling/Shrub Stratum</u> (Plot Size: <u>15'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
	<u>0</u> =	Total Cover	

<u>Herb Stratum</u> (Plot Size: <u>5'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	<u>Zea mays</u> 100	Yes	UPL
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____
	<u>100</u> =	Total Cover	

<u>Woody Vine Stratum</u> (Plot Size: <u>30'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
	<u>0</u> =	Total Cover	

Remarks: Corn 100%

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 0 x 4 = 0

UPL species 100 x 5 = 500

Column totals 100 (A) 500 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- 1 - Rapid test for hydrophytic vegetation
- 2 - Dominance test is >50%
- 3 - Prevalence index is ≤3.0*
- 4 - Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- 5 - Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present?

Yes _____ No X

SOIL

Sampling Point: Up-W1-T2-620A-1a

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*	Loc**		
0-12"	7.5YR 3/3						Coarse sandy loam	
12+	7.5YR 4/4						Fine sand	

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

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

Indicators for Problematic Hydric Soils:

- Red Parent Material (F21) **(MLRA 127, 147)**
- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Leidy South Project City/County: Schuylkill County Sampling Date: 03/20/2019
 Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: Up1-T1-620A-1a
 Investigator(s): DW, JH Section, Township, Range: Hegins Township
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR or MLRA): LRR N Lat.: 40.672086 Long.: -76.468718 Datum: NAD 83
 Soil Map Unit Name: Ba: Basher silt loam NWI Classification: none
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes x No (If no, explain in remarks)
 Are vegetation N, soil N, or hydrology N significantly disturbed? Are "normal circumstances" present? Yes x No
 Are vegetation N, soil N, or hydrology N 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? <u>No</u> Hydric soil present? <u>No</u> Wetland hydrology present? <u>No</u>	Is the sampled area within a wetland? Yes <u> </u> No <u>X</u>
Remarks: Potential future wetland in depressional area behind waterbar. Problem area on ROW, No Vegetation, Algal Mat. 35° F and Sunny	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <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 checked="" 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)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsley Vegetated Concave Surface <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 <u> </u> No <u>X</u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u>X</u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland hydrology present? Yes <u>X</u> No <u> </u>	
Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:		
Remarks: Problem area on ROW		

VEGETATION - Use scientific names of plants

Sampling Point: Up1-T1-620A-1a

Tree Stratum (Plot Size: _____ 30' _____)	Absolute % Cover	Dominant Species	Indicator Status
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
	<u>0</u> =	Total Cover	

Sapling/Shrub Stratum (Plot Size: _____ 15' _____)	Absolute % Cover	Dominant Species	Indicator Status
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
	<u>0</u> =	Total Cover	

Herb Stratum (Plot Size: _____ 5' _____)	Absolute % Cover	Dominant Species	Indicator Status
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____
	<u>0</u> =	Total Cover	

Woody Vine Stratum (Plot Size: _____ 30' _____)	Absolute % Cover	Dominant Species	Indicator Status
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
	<u>0</u> =	Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across all Strata: 0 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 0 x 4 = 0

UPL species 0 x 5 = 0

Column totals 0 (A) 0 (B)

Prevalence Index = B/A = _____

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid test for hydrophytic vegetation
 - 2 - Dominance test is >50%
 - 3 - Prevalence index is ≤3.0*
 - 4 - Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
 - 5 - Problematic hydrophytic vegetation* (explain)
- *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present?

Yes No X

Remarks: No vegetation due to recent disturbance

SOIL

Sampling Point: Up1-T1-620A-1a

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*	Loc**		
0-7"	5YR 3/2							
7-14"	5YR 4/3							

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

Indicators for Problematic Hydric Soils:

- | | | |
|---|--|--|
| <input type="checkbox"/> Histisol (A1) | <input type="checkbox"/> Dark Surface (S7) | <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147,148) | <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) | <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR N) | <input type="checkbox"/> Redox Dark Surface (F6) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147,148) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) | |
| <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) | |
| <input type="checkbox"/> Stripped Matrix (S6) | | |

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Yes _____ No _____ X _____

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Leidy South Project City/County: Schuylkill County Sampling Date: 03/20/2019
 Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: Up2-T1-620A-1c
 Investigator(s): DW, JH Section, Township, Range: Hegins Township
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 15%
 Subregion (LRR or MLRA): LRR N Lat.: 40.674899 Long.: -76.474777 Datum: NAD 83
 Soil Map Unit Name: WKF: Weikert and Klinesville shaly silt loams NWI Classification: none
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes x No (If no, explain in remarks)
 Are vegetation N, soil N, or hydrology N significantly disturbed? Are "normal circumstances" present? Yes x No
 Are vegetation N, soil N, or hydrology N 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? <u> No </u> Hydric soil present? <u> No </u> Wetland hydrology present? <u> No </u>	Is the sampled area within a wetland? Yes <u> </u> No <u> X </u>
Remarks:	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <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)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsley Vegetated Concave Surface <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 <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland hydrology present? Yes <u> </u> No <u> X </u>
---	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: Up2-T1-620A-1c

<u>Tree Stratum</u> (Plot Size: <u>30'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	<u>60</u>	<u>Yes</u>	<u>FACU</u>
2	<u>20</u>	<u>Yes</u>	<u>FACU</u>
3	<u> </u>	<u> </u>	<u> </u>
4	<u> </u>	<u> </u>	<u> </u>
5	<u> </u>	<u> </u>	<u> </u>
6	<u> </u>	<u> </u>	<u> </u>
7	<u> </u>	<u> </u>	<u> </u>
	<u>80</u> =	Total Cover	

<u>Sapling/Shrub Stratum</u> (Plot Size: <u>15'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	<u>30</u>	<u>Yes</u>	<u>FAC</u>
2	<u> </u>	<u> </u>	<u> </u>
3	<u> </u>	<u> </u>	<u> </u>
4	<u> </u>	<u> </u>	<u> </u>
5	<u> </u>	<u> </u>	<u> </u>
6	<u> </u>	<u> </u>	<u> </u>
7	<u> </u>	<u> </u>	<u> </u>
	<u>30</u> =	Total Cover	

<u>Herb Stratum</u> (Plot Size: <u>5'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	<u>20</u>	<u>Yes</u>	<u>FACU</u>
2	<u>5</u>	<u>Yes</u>	<u>FACU</u>
3	<u> </u>	<u> </u>	<u> </u>
4	<u> </u>	<u> </u>	<u> </u>
5	<u> </u>	<u> </u>	<u> </u>
6	<u> </u>	<u> </u>	<u> </u>
7	<u> </u>	<u> </u>	<u> </u>
8	<u> </u>	<u> </u>	<u> </u>
	<u>25</u> =	Total Cover	

<u>Woody Vine Stratum</u> (Plot Size: <u>30'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	<u>5</u>	<u>Yes</u>	<u>FAC</u>
2	<u> </u>	<u> </u>	<u> </u>
3	<u> </u>	<u> </u>	<u> </u>
4	<u> </u>	<u> </u>	<u> </u>
	<u>5</u> =	Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across all Strata: 6 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 33.33% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	<u>0</u>	x 1 =	<u>0</u>
FACW species	<u>0</u>	x 2 =	<u>0</u>
FAC species	<u>35</u>	x 3 =	<u>105</u>
FACU species	<u>105</u>	x 4 =	<u>420</u>
UPL species	<u>0</u>	x 5 =	<u>0</u>
Column totals	<u>140</u>	(A)	<u>525</u> (B)

Prevalence Index = B/A = 4

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid test for hydrophytic vegetation
 - 2 - Dominance test is >50%
 - 3 - Prevalence index is ≤3.0*
 - 4 - Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
 - 5 - Problematic hydrophytic vegetation* (explain)
- *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present?

Yes	<u> </u>	No	<u> X </u>
-----	-------------	----	--------------

Remarks:

SOIL

Sampling Point: Up2-T1-620A-1c

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*	Loc**		
0-12"	5YR 4/4	100					Silt Loam	

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

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

Indicators for Problematic Hydric Soils:

- Red Parent Material (F21) **(MLRA 127, 147)**
- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? Yes _____ No _____ X _____
--	--

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Leidy South Project City/County: Schuylkill County Sampling Date: 03/20/2019
 Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: Up2-T2-620A-1a
 Investigator(s): CG Section, Township, Range: Hegins Township
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 3-8%
 Subregion (LRR or MLRA): LRR N Lat.: 40.673024 Long.: -76.469995 Datum: NAD 83
 Soil Map Unit Name: LeB:Leck kill channery silt loam NWI Classification: none
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes x No (If no, explain in remarks)
 Are vegetation N, soil N, or hydrology N significantly disturbed? Are "normal circumstances" present? Yes x No
 Are vegetation N, soil N, or hydrology N 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? <u> No </u> Hydric soil present? <u> No </u> Wetland hydrology present? <u> No </u>	Is the sampled area within a wetland? Yes <u> </u> No <u> X </u>
Remarks:	

HYDROLOGY

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"/> Sparsley Vegetated Concave Surface <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 <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland hydrology present? Yes <u> </u> No <u> X </u>
--	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: Up2-T2-620A-1a

<u>Tree Stratum</u> (Plot Size: <u>30'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
	<u>0</u> =	Total Cover	

<u>Sapling/Shrub Stratum</u> (Plot Size: <u>15'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
	<u>0</u> =	Total Cover	

<u>Herb Stratum</u> (Plot Size: <u>5'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	<u>100</u>	<u>Yes</u>	<u>FACU</u>
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____
	<u>100</u> =	Total Cover	

<u>Woody Vine Stratum</u> (Plot Size: <u>30'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
	<u>0</u> =	Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 100 x 4 = 400

UPL species 0 x 5 = 0

Column totals 100 (A) 400 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

1 - Rapid test for hydrophytic vegetation

2 - Dominance test is >50%

3 - Prevalence index is ≤3.0*

4 - Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

5 - Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present?

Yes	<u> </u>	No	<u> X </u>
-----	---------------	----	--------------

Remarks:

SOIL

Sampling Point: Up2-T2-620A-1a

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*	Loc**		
0-10"	7.5YR 3/3							No Redox

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

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

Indicators for Problematic Hydric Soils:

- Red Parent Material (F21) **(MLRA 127, 147)**
- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Rock
 Depth (inches): 10"

Hydric soil present? Yes No

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Leidy South Project City/County: Schuylkill County Sampling Date: 03/20/2019
 Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: Up3-T1-620A-1a
 Investigator(s): DW, JH Section, Township, Range: Hegins Township
 Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): none Slope (%): 8-15%
 Subregion (LRR or MLRA): LRR N Lat.: 40.675891 Long.: -76.474487 Datum: NAD 83
 Soil Map Unit Name: LeC: Leck kill channery silt loam NWI Classification: none
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes x No (If no, explain in remarks)
 Are vegetation N, soil N, or hydrology N significantly disturbed? Are "normal circumstances" present? Yes x No
 Are vegetation N, soil N, or hydrology N 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? <u> No </u> Hydric soil present? <u> No </u> Wetland hydrology present? <u> No </u>	Is the sampled area within a wetland? Yes <u> </u> No <u> X </u>
Remarks: Upland-corn	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <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)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsley Vegetated Concave Surface <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 <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland hydrology present? Yes <u> </u> No <u> X </u>
---	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: Up3-T1-620A-1a

<u>Tree Stratum</u> (Plot Size: <u>30'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
	<u>0</u> =	Total Cover	

<u>Sapling/Shrub Stratum</u> (Plot Size: <u>15'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
	<u>0</u> =	Total Cover	

<u>Herb Stratum</u> (Plot Size: <u>5'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	<u>Zea mays</u> 100	Yes	UPL
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____
	<u>100</u> =	Total Cover	

<u>Woody Vine Stratum</u> (Plot Size: <u>30'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
	<u>0</u> =	Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 0 x 4 = 0

UPL species 100 x 5 = 500

Column totals 100 (A) 500 (B)

Prevalence Index = B/A = _____

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid test for hydrophytic vegetation
- 2 - Dominance test is >50%
- 3 - Prevalence index is ≤3.0*
- 4 - Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
- 5 - Problematic hydrophytic vegetation* (explain)
- *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present?

Yes	<u> </u>	No	<u> </u>	X
-----	-----------	----	-----------	---

Remarks: Corn field

SOIL

Sampling Point: Up3-T1-620A-1a

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*	Loc**		
0-12"	5YR 4/4	100					Silt Loam	

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

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

Indicators for Problematic Hydric Soils:

- Red Parent Material (F21) **(MLRA 127, 147)**
- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Leidy South Project City/County: Schuylkill County Sampling Date: 03/20/2019
 Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: Up3-T2-620A-1a
 Investigator(s): CG Section, Township, Range: Hegins Township
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 3-8%
 Subregion (LRR or MLRA): LRR N Lat.: 40.674471 Long.: -76.471036 Datum: NAD 83
 Soil Map Unit Name: CaB: Calvin shaly silt loam NWI Classification: none
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes x No (If no, explain in remarks)
 Are vegetation N, soil N, or hydrology N significantly disturbed? Are "normal circumstances" present? Yes x No
 Are vegetation N, soil N, or hydrology N 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? <u> No </u> Hydric soil present? <u> No </u> Wetland hydrology present? <u> No </u>	Is the sampled area within a wetland? Yes <u> </u> No <u> X </u>
Remarks:	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <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)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsley Vegetated Concave Surface <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 <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland hydrology present? Yes <u> </u> No <u> X </u>
--	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: Up3-T2-620A-1a

<u>Tree Stratum</u> (Plot Size: <u>30'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
	<u>0</u> =	Total Cover	

<u>Sapling/Shrub Stratum</u> (Plot Size: <u>15'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
	<u>0</u> =	Total Cover	

<u>Herb Stratum</u> (Plot Size: <u>5'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	<u>80</u>	<u>Yes</u>	<u>FACU</u>
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____
	<u>80</u> =	Total Cover	

<u>Woody Vine Stratum</u> (Plot Size: <u>30'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
	<u>0</u> =	Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 80 x 4 = 320

UPL species 0 x 5 = 0

Column totals 80 (A) 320 (B)

Prevalence Index = B/A = 4

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid test for hydrophytic vegetation
 - 2 - Dominance test is >50%
 - 3 - Prevalence index is ≤3.0*
 - 4 - Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
 - 5 - Problematic hydrophytic vegetation* (explain)
- *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present?

Yes	<u> </u>	No	<u> X </u>
-----	---------------	----	--------------

Remarks:

SOIL

Sampling Point: Up3-T2-620A-1a

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*	Loc**		
0-10"	7.5YR 3/3	100					Gravel	No Redox

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

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

Indicators for Problematic Hydric Soils:

- Red Parent Material (F21) **(MLRA 127, 147)**
- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed): Type: _____ Depth (inches): _____	Hydric soil present? Yes _____ No _____ X _____
--	--

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Leidy South Project City/County: Schuylkill County Sampling Date: 03/20/2019
 Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: Up4-T1-620A-1a
 Investigator(s): DW, JH Section, Township, Range: Hegins Township
 Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): none Slope (%): 3-8%
 Subregion (LRR or MLRA): LRR N Lat.: 40.676298 Long.: -76.473615 Datum: NAD 83
 Soil Map Unit Name: LeB: Leck kill channery silt loam NWI Classification: none
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes x No (If no, explain in remarks)
 Are vegetation N, soil N, or hydrology N significantly disturbed? Are "normal circumstances" present? Yes x No
 Are vegetation N, soil N, or hydrology N 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? <u> No </u> Hydric soil present? <u> No </u> Wetland hydrology present? <u> No </u>	Is the sampled area within a wetland? Yes <u> </u> No <u> X </u>
Remarks:	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <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)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsley Vegetated Concave Surface <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 <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland hydrology present? Yes <u> </u> No <u> X </u>
---	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks: Upland-corn

VEGETATION - Use scientific names of plants

Sampling Point: Up4-T1-620A-1a

<u>Tree Stratum</u> (Plot Size: <u>30'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
	<u>0</u> =	Total Cover	

<u>Sapling/Shrub Stratum</u> (Plot Size: <u>15'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
	<u>0</u> =	Total Cover	

<u>Herb Stratum</u> (Plot Size: <u>5'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	<u>Zea mays</u> 100	Yes	UPL
2	<u>Grass sp.</u> 20	No	OBL-UPL
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____
	<u>120</u> =	Total Cover	

<u>Woody Vine Stratum</u> (Plot Size: <u>30'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
	<u>0</u> =	Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 0 x 4 = 0

UPL species 100 x 5 = 500

Column totals 100 (A) 500 (B)

Prevalence Index = B/A = 5

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid test for hydrophytic vegetation
 - 2 - Dominance test is >50%
 - 3 - Prevalence index is ≤3.0*
 - 4 - Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)
 - 5 - Problematic hydrophytic vegetation* (explain)
- *Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present?

Yes	<u> </u>	No	<u> </u>	X
-----	-----------	----	-----------	---

Remarks:

SOIL

Sampling Point: Up4-T1-620A-1a

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*	Loc**		
0-12"	5YR 4/4	100					Silt Loam	

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

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

Indicators for Problematic Hydric Soils:

- Red Parent Material (F21) **(MLRA 127, 147)**
- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Yes _____ No X

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site: Leidy South Project City/County: Schuylkill County Sampling Date: 03/20/2019
 Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: Up4-T2-620A-1a
 Investigator(s): CG Section, Township, Range: Hegins Township
 Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): none Slope (%): 3-8%
 Subregion (LRR or MLRA): LRR N Lat.: 40.676499 Long.: -76.472724 Datum: NAD 83
 Soil Map Unit Name: CaB: Calvin shaly silt loam NWI Classification: none
 Are climatic/hydrologic conditions of the site typical for this time of the year? Yes x No (If no, explain in remarks)
 Are vegetation N, soil N, or hydrology N significantly disturbed? Are "normal circumstances" present? Yes x No
 Are vegetation N, soil N, or hydrology N 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? <u> No </u> Hydric soil present? <u> No </u> Wetland hydrology present? <u> No </u>	Is the sampled area within a wetland? Yes <u> </u> No <u> X </u>
Remarks:	

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply) <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)	Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsley Vegetated Concave Surface <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 <u> </u> No <u> X </u> Depth (inches): <u> </u> Water table present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> Saturation present? Yes <u> </u> No <u> X </u> Depth (inches): <u> </u> (includes capillary fringe)	Wetland hydrology present? Yes <u> </u> No <u> X </u>
---	---

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: Up4-T2-620A-1a

<u>Tree Stratum</u> (Plot Size: <u>30'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
	<u>0</u> =	Total Cover	

<u>Sapling/Shrub Stratum</u> (Plot Size: <u>15'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
	<u>0</u> =	Total Cover	

<u>Herb Stratum</u> (Plot Size: <u>5'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	<u>70</u>	<u>Yes</u>	<u>FACU</u>
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
5	_____	_____	_____
6	_____	_____	_____
7	_____	_____	_____
8	_____	_____	_____
	<u>70</u> =	Total Cover	

<u>Woody Vine Stratum</u> (Plot Size: <u>30'</u>)			
	Absolute % Cover	Dominant Species	Indicator Staus
1	_____	_____	_____
2	_____	_____	_____
3	_____	_____	_____
4	_____	_____	_____
	<u>0</u> =	Total Cover	

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species 0 x 1 = 0

FACW species 0 x 2 = 0

FAC species 0 x 3 = 0

FACU species 70 x 4 = 280

UPL species 0 x 5 = 0

Column totals 70 (A) 280 (B)

Prevalence Index = B/A = 4

Hydrophytic Vegetation Indicators:

 1 - Rapid test for hydrophytic vegetation

 2 - Dominance test is >50%

 3 - Prevalence index is ≤3.0*

 4 - Morphological adaptations* (provide supporting data in Remarks or on a separate sheet)

 5 - Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

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

Sapling/shrub - Woody plants less than 3 in. DBH and greater than 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 vines - All woody vines greater than 3.28 ft in height.

Hydrophytic vegetation present?

Yes	<u> </u>	No	<u> </u>	X
-----	-----------	----	-----------	---

Remarks:

SOIL

Sampling Point: Up4-T2-620A-1a

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*	Loc**		
0-10"	7.5YR 4/4	100						No Redox

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains

**Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

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

Indicators for Problematic Hydric Soils:

- Red Parent Material (F21) **(MLRA 127, 147)**
- 2 cm Muck (A10) **(MLRA 147)**
- Coast Prairie Redox (A16) **(MLRA 147, 148)**
- Piedmont Floodplain Soils (F19) **(MLRA 136, 147)**
- Very Shallow Dark Surface (TF12)
- Other (Explain in Remarks)

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

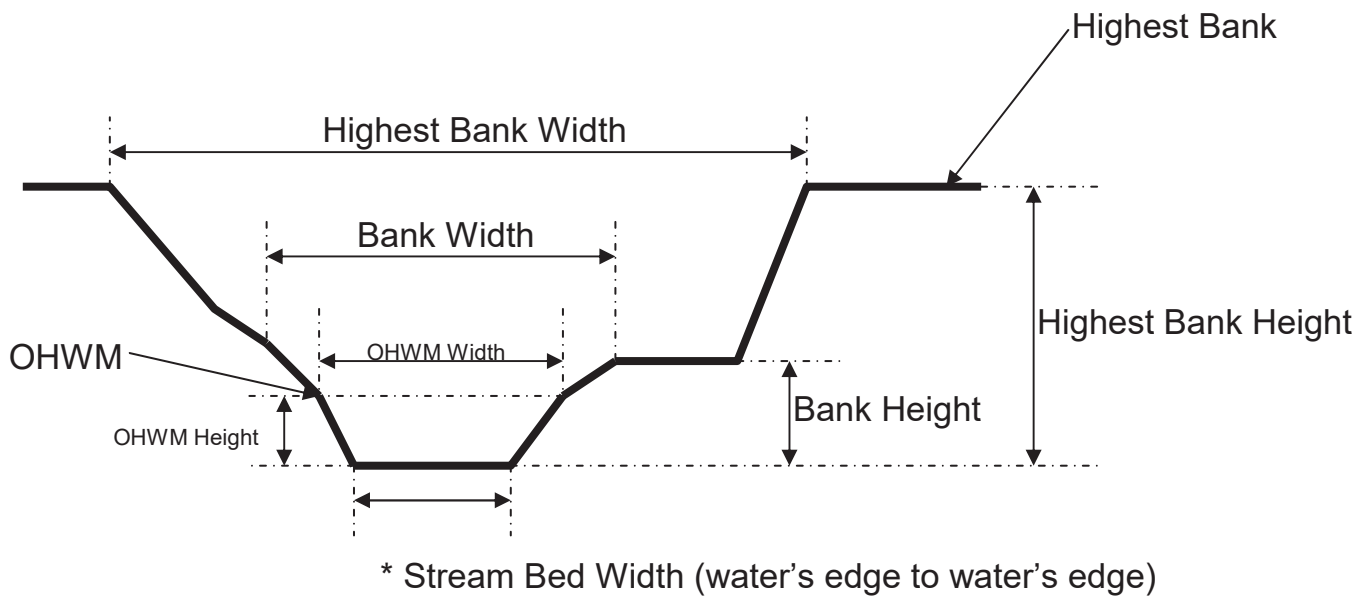
Restrictive Layer (if observed):

Type: _____
 Depth (inches): _____

Hydric soil present? Yes _____ No X

Remarks:

<input type="checkbox"/> ROW <input checked="" type="checkbox"/> Project Facility STATE <u>PA</u> <input type="checkbox"/> Access Road <input type="checkbox"/> Staging/Storage Area																																													
County: Schuylkill	Stream Name: <input type="checkbox"/> UNNAMED <input checked="" type="checkbox"/> NAMED: <u>Deep Creek</u>																																												
Date: 03/20/2019	Stream Type: <input checked="" type="checkbox"/> STREAM <input type="checkbox"/> DITCH/CANAL																																												
Map No. :	Observers: CG, PD																																												
CHARACTERISTICS																																													
Water Present: <input checked="" type="checkbox"/> yes <input type="checkbox"/> no Flow Type: <input checked="" type="checkbox"/> Perennial <input type="checkbox"/> Intermittent <input type="checkbox"/> Ephemeral Stream Flow Direction: <u>Southwest</u> Width (ft) (water's edge to water's edge): <u>50'</u> Width (ft) (bank to bank): <u>70'</u> (above OHWM; use OHWM Criteria below)	<table style="width:100%; border: none;"> <tr> <td style="width:33%;">Substrate Type</td> <td style="width:33%;">Probed Stream Depth</td> <td style="width:33%;">Water Clarity</td> </tr> <tr> <td><input type="checkbox"/> Bedrock</td> <td><input type="checkbox"/> N/A</td> <td><input checked="" type="checkbox"/> Clear</td> </tr> <tr> <td><input checked="" type="checkbox"/> Gravel</td> <td><input type="checkbox"/> 0 – 6"</td> <td><input type="checkbox"/> Discolored</td> </tr> <tr> <td><input checked="" type="checkbox"/> Sand</td> <td><input checked="" type="checkbox"/> 7 – 12"</td> <td><input type="checkbox"/> Oily Film</td> </tr> <tr> <td><input checked="" type="checkbox"/> Silt</td> <td><input checked="" type="checkbox"/> 13 – 24"</td> <td><input type="checkbox"/> Other _____</td> </tr> <tr> <td><input checked="" type="checkbox"/> Cobbles</td> <td><input checked="" type="checkbox"/> 25 – 36"</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Clay</td> <td><input type="checkbox"/> 37"+</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Concrete</td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> <td></td> </tr> </table>	Substrate Type	Probed Stream Depth	Water Clarity	<input type="checkbox"/> Bedrock	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Clear	<input checked="" type="checkbox"/> Gravel	<input type="checkbox"/> 0 – 6"	<input type="checkbox"/> Discolored	<input checked="" type="checkbox"/> Sand	<input checked="" type="checkbox"/> 7 – 12"	<input type="checkbox"/> Oily Film	<input checked="" type="checkbox"/> Silt	<input checked="" type="checkbox"/> 13 – 24"	<input type="checkbox"/> Other _____	<input checked="" type="checkbox"/> Cobbles	<input checked="" type="checkbox"/> 25 – 36"		<input type="checkbox"/> Clay	<input type="checkbox"/> 37"+		<input type="checkbox"/> Concrete			<input type="checkbox"/> Other _____																			
Substrate Type	Probed Stream Depth	Water Clarity																																											
<input type="checkbox"/> Bedrock	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Clear																																											
<input checked="" type="checkbox"/> Gravel	<input type="checkbox"/> 0 – 6"	<input type="checkbox"/> Discolored																																											
<input checked="" type="checkbox"/> Sand	<input checked="" type="checkbox"/> 7 – 12"	<input type="checkbox"/> Oily Film																																											
<input checked="" type="checkbox"/> Silt	<input checked="" type="checkbox"/> 13 – 24"	<input type="checkbox"/> Other _____																																											
<input checked="" type="checkbox"/> Cobbles	<input checked="" type="checkbox"/> 25 – 36"																																												
<input type="checkbox"/> Clay	<input type="checkbox"/> 37"+																																												
<input type="checkbox"/> Concrete																																													
<input type="checkbox"/> Other _____																																													
BANK HEIGHT AND SLOPE																																													
<table style="width:100%; border: none;"> <tr> <td style="width:50%;">Left Bank*</td> <td style="width:50%;">Right Bank*</td> </tr> <tr> <td>Height (ft): <u>6'</u></td> <td>Height (ft): <u>6'</u></td> </tr> <tr> <td>Slope: <input type="checkbox"/> 0-30° (4:1)</td> <td>Slope: <input type="checkbox"/> 0-30° (4:1)</td> </tr> <tr> <td><input type="checkbox"/> 31-45° (3:1)</td> <td><input type="checkbox"/> 31-45° (3:1)</td> </tr> <tr> <td><input checked="" type="checkbox"/> 46-60° (2:1)</td> <td><input checked="" type="checkbox"/> 46-60° (2:1)</td> </tr> <tr> <td><input type="checkbox"/> 61-90° (1:1)</td> <td><input type="checkbox"/> 61-90° (1:1)</td> </tr> </table> Height (ft) (OHWM from stream bed): _____ *Direction when facing downstream Evidence of Erosion: <input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Sloughing <input type="checkbox"/> Undercutting <input type="checkbox"/> Impact from Cattle <input type="checkbox"/> Other: _____	Left Bank*	Right Bank*	Height (ft): <u>6'</u>	Height (ft): <u>6'</u>	Slope: <input type="checkbox"/> 0-30° (4:1)	Slope: <input type="checkbox"/> 0-30° (4:1)	<input type="checkbox"/> 31-45° (3:1)	<input type="checkbox"/> 31-45° (3:1)	<input checked="" type="checkbox"/> 46-60° (2:1)	<input checked="" type="checkbox"/> 46-60° (2:1)	<input type="checkbox"/> 61-90° (1:1)	<input type="checkbox"/> 61-90° (1:1)	<table style="width:100%; border: none;"> <tr> <td style="width:60%;">ASSOCIATED HABITAT</td> <td style="width:40%;">ASSOCIATED SPECIES</td> </tr> <tr> <td>Riparian Vegetation</td> <td>Aquatic Organisms</td> </tr> <tr> <td><input checked="" type="checkbox"/> yes, list ID: HB- _____</td> <td><input checked="" type="checkbox"/> yes</td> </tr> <tr> <td><input type="checkbox"/> no</td> <td><input type="checkbox"/> no</td> </tr> <tr> <td>If yes, list: Hemlock, Red Maple, Multiflora Rose, Silky Dogwood</td> <td>If yes, list:</td> </tr> <tr> <td>Width of riparian corridor (ft): _____</td> <td>Riparian/Terrestrial Organisms</td> </tr> <tr> <td>Stream Fringe (5' or less including both banks and does not meet wetland criteria)</td> <td><input checked="" type="checkbox"/> yes</td> </tr> <tr> <td><input type="checkbox"/> yes, width (ft): _____</td> <td><input type="checkbox"/> no</td> </tr> <tr> <td><input checked="" type="checkbox"/> no</td> <td>If yes, list:</td> </tr> <tr> <td>If yes, list :</td> <td>Stream has potential for fish presence</td> </tr> <tr> <td></td> <td><input checked="" type="checkbox"/> yes</td> </tr> <tr> <td></td> <td><input type="checkbox"/> no</td> </tr> <tr> <td>Aquatic Vegetation</td> <td>T&E Species</td> </tr> <tr> <td><input type="checkbox"/> yes</td> <td><input type="checkbox"/> yes, list ID: WL/VG- _____</td> </tr> <tr> <td><input checked="" type="checkbox"/> no</td> <td><input checked="" type="checkbox"/> no</td> </tr> <tr> <td>If yes, list:</td> <td></td> </tr> </table>	ASSOCIATED HABITAT	ASSOCIATED SPECIES	Riparian Vegetation	Aquatic Organisms	<input checked="" type="checkbox"/> yes, list ID: HB- _____	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> no	<input type="checkbox"/> no	If yes, list: Hemlock, Red Maple, Multiflora Rose, Silky Dogwood	If yes, list:	Width of riparian corridor (ft): _____	Riparian/Terrestrial Organisms	Stream Fringe (5' or less including both banks and does not meet wetland criteria)	<input checked="" type="checkbox"/> yes	<input type="checkbox"/> yes, width (ft): _____	<input type="checkbox"/> no	<input checked="" type="checkbox"/> no	If yes, list:	If yes, list :	Stream has potential for fish presence		<input checked="" type="checkbox"/> yes		<input type="checkbox"/> no	Aquatic Vegetation	T&E Species	<input type="checkbox"/> yes	<input type="checkbox"/> yes, list ID: WL/VG- _____	<input checked="" type="checkbox"/> no	<input checked="" type="checkbox"/> no	If yes, list:	
Left Bank*	Right Bank*																																												
Height (ft): <u>6'</u>	Height (ft): <u>6'</u>																																												
Slope: <input type="checkbox"/> 0-30° (4:1)	Slope: <input type="checkbox"/> 0-30° (4:1)																																												
<input type="checkbox"/> 31-45° (3:1)	<input type="checkbox"/> 31-45° (3:1)																																												
<input checked="" type="checkbox"/> 46-60° (2:1)	<input checked="" type="checkbox"/> 46-60° (2:1)																																												
<input type="checkbox"/> 61-90° (1:1)	<input type="checkbox"/> 61-90° (1:1)																																												
ASSOCIATED HABITAT	ASSOCIATED SPECIES																																												
Riparian Vegetation	Aquatic Organisms																																												
<input checked="" type="checkbox"/> yes, list ID: HB- _____	<input checked="" type="checkbox"/> yes																																												
<input type="checkbox"/> no	<input type="checkbox"/> no																																												
If yes, list: Hemlock, Red Maple, Multiflora Rose, Silky Dogwood	If yes, list:																																												
Width of riparian corridor (ft): _____	Riparian/Terrestrial Organisms																																												
Stream Fringe (5' or less including both banks and does not meet wetland criteria)	<input checked="" type="checkbox"/> yes																																												
<input type="checkbox"/> yes, width (ft): _____	<input type="checkbox"/> no																																												
<input checked="" type="checkbox"/> no	If yes, list:																																												
If yes, list :	Stream has potential for fish presence																																												
	<input checked="" type="checkbox"/> yes																																												
	<input type="checkbox"/> no																																												
Aquatic Vegetation	T&E Species																																												
<input type="checkbox"/> yes	<input type="checkbox"/> yes, list ID: WL/VG- _____																																												
<input checked="" type="checkbox"/> no	<input checked="" type="checkbox"/> no																																												
If yes, list:																																													
OHWM Criteria – Ordinary High Water Mark																																													
<input checked="" type="checkbox"/> clear, natural line impressed on bank <input type="checkbox"/> changes in character of soil <input type="checkbox"/> shelving <input checked="" type="checkbox"/> vegetation matted down, bent or absent <input type="checkbox"/> leaf litter disturbed or washed away <input type="checkbox"/> sediment deposition <input type="checkbox"/> water staining <input type="checkbox"/> presence of litter and debris <input type="checkbox"/> destruction of terrestrial vegetation <input type="checkbox"/> presence of wrack line <input type="checkbox"/> sediment sorting <input type="checkbox"/> scour <input type="checkbox"/> abrupt change in plant community <input type="checkbox"/> other (list): _____ Discontinuous OHWM: <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	Geometry: <input checked="" type="checkbox"/> Meandering <input type="checkbox"/> Relatively Straight Presence of: <input checked="" type="checkbox"/> run <input checked="" type="checkbox"/> pools <input checked="" type="checkbox"/> riffles Explain: All were present Is the stream/tributary: <input checked="" type="checkbox"/> natural <input type="checkbox"/> manmade – Explain: _____ <input type="checkbox"/> man-altered – Explain: _____ NOTES:																																												



*Stream bed width is variable

DEFINITIONS:

Perennial: has flowing water year-round during a typical year.

Intermittent: has flowing water during certain times of the year, when groundwater provides water for stream flow.

Ephemeral: has flowing water only during, and for a short duration after, precipitation events in a typical year.

Run: A reach of stream characterized by fast flowing low turbulence water.

Riffle: A reach of stream that is characterized by shallow, fast moving water broken by the presence of rocks and boulders.

Pool: A reach of stream that is characterized by deep low velocity water and a smooth surface.

<input type="checkbox"/> ROW <input checked="" type="checkbox"/> Project Facility STATE <u>PA</u> <input type="checkbox"/> Access Road <input type="checkbox"/> Staging/Storage Area																												
County: <u>Schuylkill</u>	Stream Name: <input checked="" type="checkbox"/> UNNAMED <input type="checkbox"/> NAMED: _____																											
Date: <u>03/20/2019</u>	Stream Type: <input checked="" type="checkbox"/> STREAM <input type="checkbox"/> DITCH/CANAL																											
Map No. :	Observers: <u>CG, PD</u>																											
CHARACTERISTICS	CHARACTERISTICS																											
Water Present: <input checked="" type="checkbox"/> yes <input type="checkbox"/> no Flow Type: <input checked="" type="checkbox"/> Perennial <input type="checkbox"/> Intermittent <input type="checkbox"/> Ephemeral Stream Flow Direction: <u>South</u> Width (ft) (water's edge to water's edge): <u>4'</u> Width (ft) (bank to bank): <u>7'</u> (above OHWM; use OHWM Criteria below)	<table style="width:100%; border: none;"> <tr> <td style="width:33%;">Substrate Type</td> <td style="width:33%;">Probed Stream Depth</td> <td style="width:33%;">Water Clarity</td> </tr> <tr> <td><input type="checkbox"/> Bedrock</td> <td><input type="checkbox"/> N/A</td> <td><input checked="" type="checkbox"/> Clear</td> </tr> <tr> <td><input checked="" type="checkbox"/> Gravel</td> <td><input checked="" type="checkbox"/> 0 – 6"</td> <td><input type="checkbox"/> Discolored</td> </tr> <tr> <td><input type="checkbox"/> Sand</td> <td><input type="checkbox"/> 7 – 12"</td> <td><input type="checkbox"/> Oily Film</td> </tr> <tr> <td><input checked="" type="checkbox"/> Silt</td> <td><input type="checkbox"/> 13 – 24"</td> <td><input type="checkbox"/> Other _____</td> </tr> <tr> <td><input checked="" type="checkbox"/> Cobbles</td> <td><input type="checkbox"/> 25 – 36"</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Clay</td> <td><input type="checkbox"/> 37"+</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Concrete</td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> <td></td> </tr> </table>	Substrate Type	Probed Stream Depth	Water Clarity	<input type="checkbox"/> Bedrock	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Clear	<input checked="" type="checkbox"/> Gravel	<input checked="" type="checkbox"/> 0 – 6"	<input type="checkbox"/> Discolored	<input type="checkbox"/> Sand	<input type="checkbox"/> 7 – 12"	<input type="checkbox"/> Oily Film	<input checked="" type="checkbox"/> Silt	<input type="checkbox"/> 13 – 24"	<input type="checkbox"/> Other _____	<input checked="" type="checkbox"/> Cobbles	<input type="checkbox"/> 25 – 36"		<input type="checkbox"/> Clay	<input type="checkbox"/> 37"+		<input type="checkbox"/> Concrete			<input type="checkbox"/> Other _____		
Substrate Type	Probed Stream Depth	Water Clarity																										
<input type="checkbox"/> Bedrock	<input type="checkbox"/> N/A	<input checked="" type="checkbox"/> Clear																										
<input checked="" type="checkbox"/> Gravel	<input checked="" type="checkbox"/> 0 – 6"	<input type="checkbox"/> Discolored																										
<input type="checkbox"/> Sand	<input type="checkbox"/> 7 – 12"	<input type="checkbox"/> Oily Film																										
<input checked="" type="checkbox"/> Silt	<input type="checkbox"/> 13 – 24"	<input type="checkbox"/> Other _____																										
<input checked="" type="checkbox"/> Cobbles	<input type="checkbox"/> 25 – 36"																											
<input type="checkbox"/> Clay	<input type="checkbox"/> 37"+																											
<input type="checkbox"/> Concrete																												
<input type="checkbox"/> Other _____																												
BANK HEIGHT AND SLOPE	ASSOCIATED HABITAT																											
<table style="width:100%; border: none;"> <tr> <td style="width:50%;">Left Bank*</td> <td style="width:50%;">Right Bank*</td> </tr> <tr> <td>Height (ft): <u>4'</u></td> <td>Height (ft): <u>4'</u></td> </tr> <tr> <td>Slope: <input type="checkbox"/> 0-30° (4:1)</td> <td>Slope: <input type="checkbox"/> 0-30° (4:1)</td> </tr> <tr> <td><input type="checkbox"/> 31-45° (3:1)</td> <td><input type="checkbox"/> 31-45° (3:1)</td> </tr> <tr> <td><input checked="" type="checkbox"/> 46-60° (2:1)</td> <td><input checked="" type="checkbox"/> 46-60° (2:1)</td> </tr> <tr> <td><input type="checkbox"/> 61-90° (1:1)</td> <td><input type="checkbox"/> 61-90° (1:1)</td> </tr> </table> Height (ft) (OHWM from stream bed): _____ *Direction when facing downstream Evidence of Erosion: <input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Sloughing <input checked="" type="checkbox"/> Undercutting <input type="checkbox"/> Impact from Cattle <input type="checkbox"/> Other: _____ NOTES for HIGH BANK for Construction (if present) Width (ft) Highest Bank to Highest Bank: _____ Highest Left Bank Height*: _____ Highest Left Bank Slope*: _____ Highest Right Bank Height*: _____ Highest Right Bank Slope*: _____ *Direction when facing downstream	Left Bank*	Right Bank*	Height (ft): <u>4'</u>	Height (ft): <u>4'</u>	Slope: <input type="checkbox"/> 0-30° (4:1)	Slope: <input type="checkbox"/> 0-30° (4:1)	<input type="checkbox"/> 31-45° (3:1)	<input type="checkbox"/> 31-45° (3:1)	<input checked="" type="checkbox"/> 46-60° (2:1)	<input checked="" type="checkbox"/> 46-60° (2:1)	<input type="checkbox"/> 61-90° (1:1)	<input type="checkbox"/> 61-90° (1:1)	Riparian Vegetation <input checked="" type="checkbox"/> yes, list ID: HB- _____ <input type="checkbox"/> no If yes, list: <u>Red Maple, Multiflora Rose, Silky Dogwood</u> Width of riparian corridor (ft): _____ Stream Fringe (5' or less including both banks and does not meet wetland criteria) <input type="checkbox"/> yes, width (ft): _____ <input checked="" type="checkbox"/> no If yes, list : _____ Aquatic Vegetation <input type="checkbox"/> yes <input checked="" type="checkbox"/> no If yes, list: _____															
Left Bank*	Right Bank*																											
Height (ft): <u>4'</u>	Height (ft): <u>4'</u>																											
Slope: <input type="checkbox"/> 0-30° (4:1)	Slope: <input type="checkbox"/> 0-30° (4:1)																											
<input type="checkbox"/> 31-45° (3:1)	<input type="checkbox"/> 31-45° (3:1)																											
<input checked="" type="checkbox"/> 46-60° (2:1)	<input checked="" type="checkbox"/> 46-60° (2:1)																											
<input type="checkbox"/> 61-90° (1:1)	<input type="checkbox"/> 61-90° (1:1)																											
	ASSOCIATED SPECIES																											
	Aquatic Organisms <input type="checkbox"/> yes <input checked="" type="checkbox"/> no If yes, list: _____ Riparian/Terrestrial Organisms <input type="checkbox"/> yes <input checked="" type="checkbox"/> no If yes, list: _____ Stream has potential for fish presence <input type="checkbox"/> yes <input checked="" type="checkbox"/> no T&E Species <input type="checkbox"/> yes, list ID: WL/VG- _____ <input checked="" type="checkbox"/> no																											
OHWM Criteria – Ordinary High Water Mark	Geometry: <input type="checkbox"/> Meandering <input checked="" type="checkbox"/> Relatively Straight																											
<input checked="" type="checkbox"/> clear, natural line impressed on bank <input type="checkbox"/> changes in character of soil <input type="checkbox"/> shelving <input type="checkbox"/> vegetation matted down, bent or absent <input type="checkbox"/> leaf litter disturbed or washed away <input type="checkbox"/> sediment deposition <input type="checkbox"/> water staining <input type="checkbox"/> presence of litter and debris <input type="checkbox"/> destruction of terrestrial vegetation <input type="checkbox"/> presence of wrack line <input type="checkbox"/> sediment sorting <input type="checkbox"/> scour <input type="checkbox"/> abrupt change in plant community <input type="checkbox"/> other (list): _____ Discontinuous OHWM: <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	Presence of: <input checked="" type="checkbox"/> run <input type="checkbox"/> pools <input checked="" type="checkbox"/> riffles Explain: _____ Is the stream/tributary: <input checked="" type="checkbox"/> natural <input type="checkbox"/> manmade – Explain: _____ <input type="checkbox"/> man-altered – Explain: _____ NOTES: _____																											

<input type="checkbox"/> ROW <input checked="" type="checkbox"/> Project Facility STATE <u>PA</u> <input type="checkbox"/> Access Road <input type="checkbox"/> Staging/Storage Area																												
County: Schuylkill	Stream Name: <input checked="" type="checkbox"/> UNNAMED <input type="checkbox"/> NAMED: _____																											
Date: 03/20/2019	Stream Type: <input type="checkbox"/> STREAM <input checked="" type="checkbox"/> DITCH/CANAL																											
Map No. :	Observers: CG, PD																											
CHARACTERISTICS																												
Water Present: <input type="checkbox"/> yes <input checked="" type="checkbox"/> no Flow Type: <input type="checkbox"/> Perennial <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Ephemeral Stream Flow Direction: <u>Southwest</u> Width (ft) (water's edge to water's edge): <u>4'</u> Width (ft) (bank to bank): <u>6'</u> (above OHWM; use OHWM Criteria below)	<table style="width:100%; border: none;"> <tr> <td style="width:33%;">Substrate Type</td> <td style="width:33%;">Probed Stream Depth</td> <td style="width:33%;">Water Clarity</td> </tr> <tr> <td><input type="checkbox"/> Bedrock</td> <td><input checked="" type="checkbox"/> N/A</td> <td><input type="checkbox"/> Clear</td> </tr> <tr> <td><input type="checkbox"/> Gravel</td> <td><input type="checkbox"/> 0 – 6"</td> <td><input type="checkbox"/> Discolored</td> </tr> <tr> <td><input checked="" type="checkbox"/> Sand</td> <td><input type="checkbox"/> 7 – 12"</td> <td><input type="checkbox"/> Oily Film</td> </tr> <tr> <td><input checked="" type="checkbox"/> Silt</td> <td><input type="checkbox"/> 13 – 24"</td> <td><input type="checkbox"/> Other _____</td> </tr> <tr> <td><input type="checkbox"/> Cobbles</td> <td><input type="checkbox"/> 25 – 36"</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Clay</td> <td><input type="checkbox"/> 37"+</td> <td></td> </tr> <tr> <td><input type="checkbox"/> Concrete</td> <td></td> <td></td> </tr> <tr> <td><input type="checkbox"/> Other _____</td> <td></td> <td></td> </tr> </table>	Substrate Type	Probed Stream Depth	Water Clarity	<input type="checkbox"/> Bedrock	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Clear	<input type="checkbox"/> Gravel	<input type="checkbox"/> 0 – 6"	<input type="checkbox"/> Discolored	<input checked="" type="checkbox"/> Sand	<input type="checkbox"/> 7 – 12"	<input type="checkbox"/> Oily Film	<input checked="" type="checkbox"/> Silt	<input type="checkbox"/> 13 – 24"	<input type="checkbox"/> Other _____	<input type="checkbox"/> Cobbles	<input type="checkbox"/> 25 – 36"		<input type="checkbox"/> Clay	<input type="checkbox"/> 37"+		<input type="checkbox"/> Concrete			<input type="checkbox"/> Other _____		
Substrate Type	Probed Stream Depth	Water Clarity																										
<input type="checkbox"/> Bedrock	<input checked="" type="checkbox"/> N/A	<input type="checkbox"/> Clear																										
<input type="checkbox"/> Gravel	<input type="checkbox"/> 0 – 6"	<input type="checkbox"/> Discolored																										
<input checked="" type="checkbox"/> Sand	<input type="checkbox"/> 7 – 12"	<input type="checkbox"/> Oily Film																										
<input checked="" type="checkbox"/> Silt	<input type="checkbox"/> 13 – 24"	<input type="checkbox"/> Other _____																										
<input type="checkbox"/> Cobbles	<input type="checkbox"/> 25 – 36"																											
<input type="checkbox"/> Clay	<input type="checkbox"/> 37"+																											
<input type="checkbox"/> Concrete																												
<input type="checkbox"/> Other _____																												
BANK HEIGHT AND SLOPE																												
<table style="width:100%; border: none;"> <tr> <td style="width:50%;">Left Bank*</td> <td style="width:50%;">Right Bank*</td> </tr> <tr> <td>Height (ft): <u>4'</u></td> <td>Height (ft): <u>4'</u></td> </tr> <tr> <td>Slope: <input type="checkbox"/> 0-30° (4:1)</td> <td>Slope: <input type="checkbox"/> 0-30° (4:1)</td> </tr> <tr> <td><input type="checkbox"/> 31-45° (3:1)</td> <td><input type="checkbox"/> 31-45° (3:1)</td> </tr> <tr> <td><input checked="" type="checkbox"/> 46-60° (2:1)</td> <td><input checked="" type="checkbox"/> 46-60° (2:1)</td> </tr> <tr> <td><input type="checkbox"/> 61-90° (1:1)</td> <td><input type="checkbox"/> 61-90° (1:1)</td> </tr> </table> Height (ft) (OHWM from stream bed): _____ *Direction when facing downstream Evidence of Erosion: <input checked="" type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Sloughing <input type="checkbox"/> Undercutting <input type="checkbox"/> Impact from Cattle <input type="checkbox"/> Other: _____	Left Bank*	Right Bank*	Height (ft): <u>4'</u>	Height (ft): <u>4'</u>	Slope: <input type="checkbox"/> 0-30° (4:1)	Slope: <input type="checkbox"/> 0-30° (4:1)	<input type="checkbox"/> 31-45° (3:1)	<input type="checkbox"/> 31-45° (3:1)	<input checked="" type="checkbox"/> 46-60° (2:1)	<input checked="" type="checkbox"/> 46-60° (2:1)	<input type="checkbox"/> 61-90° (1:1)	<input type="checkbox"/> 61-90° (1:1)	<table style="width:100%; border: none;"> <tr> <td style="width:50%;">ASSOCIATED HABITAT</td> <td style="width:50%;">ASSOCIATED SPECIES</td> </tr> <tr> <td> Riparian Vegetation <input checked="" type="checkbox"/> yes, list ID: HB- _____ <input type="checkbox"/> no If yes, list: Red Maple, White Pine, Pokeweed, Multiflora Rose Width of riparian corridor (ft): _____ Stream Fringe (5' or less including both banks and does not meet wetland criteria) <input type="checkbox"/> yes, width (ft): _____ <input checked="" type="checkbox"/> no If yes, list : _____ Aquatic Vegetation <input type="checkbox"/> yes <input checked="" type="checkbox"/> no If yes, list: _____ </td> <td> Aquatic Organisms <input type="checkbox"/> yes <input checked="" type="checkbox"/> no If yes, list: Riparian/Terrestrial Organisms <input type="checkbox"/> yes <input checked="" type="checkbox"/> no If yes, list: Stream has potential for fish presence <input type="checkbox"/> yes <input checked="" type="checkbox"/> no T&E Species <input type="checkbox"/> yes, list ID: WL/VG- _____ <input checked="" type="checkbox"/> no </td> </tr> </table>	ASSOCIATED HABITAT	ASSOCIATED SPECIES	Riparian Vegetation <input checked="" type="checkbox"/> yes, list ID: HB- _____ <input type="checkbox"/> no If yes, list: Red Maple, White Pine, Pokeweed, Multiflora Rose Width of riparian corridor (ft): _____ Stream Fringe (5' or less including both banks and does not meet wetland criteria) <input type="checkbox"/> yes, width (ft): _____ <input checked="" type="checkbox"/> no If yes, list : _____ Aquatic Vegetation <input type="checkbox"/> yes <input checked="" type="checkbox"/> no If yes, list: _____	Aquatic Organisms <input type="checkbox"/> yes <input checked="" type="checkbox"/> no If yes, list: Riparian/Terrestrial Organisms <input type="checkbox"/> yes <input checked="" type="checkbox"/> no If yes, list: Stream has potential for fish presence <input type="checkbox"/> yes <input checked="" type="checkbox"/> no T&E Species <input type="checkbox"/> yes, list ID: WL/VG- _____ <input checked="" type="checkbox"/> no											
Left Bank*	Right Bank*																											
Height (ft): <u>4'</u>	Height (ft): <u>4'</u>																											
Slope: <input type="checkbox"/> 0-30° (4:1)	Slope: <input type="checkbox"/> 0-30° (4:1)																											
<input type="checkbox"/> 31-45° (3:1)	<input type="checkbox"/> 31-45° (3:1)																											
<input checked="" type="checkbox"/> 46-60° (2:1)	<input checked="" type="checkbox"/> 46-60° (2:1)																											
<input type="checkbox"/> 61-90° (1:1)	<input type="checkbox"/> 61-90° (1:1)																											
ASSOCIATED HABITAT	ASSOCIATED SPECIES																											
Riparian Vegetation <input checked="" type="checkbox"/> yes, list ID: HB- _____ <input type="checkbox"/> no If yes, list: Red Maple, White Pine, Pokeweed, Multiflora Rose Width of riparian corridor (ft): _____ Stream Fringe (5' or less including both banks and does not meet wetland criteria) <input type="checkbox"/> yes, width (ft): _____ <input checked="" type="checkbox"/> no If yes, list : _____ Aquatic Vegetation <input type="checkbox"/> yes <input checked="" type="checkbox"/> no If yes, list: _____	Aquatic Organisms <input type="checkbox"/> yes <input checked="" type="checkbox"/> no If yes, list: Riparian/Terrestrial Organisms <input type="checkbox"/> yes <input checked="" type="checkbox"/> no If yes, list: Stream has potential for fish presence <input type="checkbox"/> yes <input checked="" type="checkbox"/> no T&E Species <input type="checkbox"/> yes, list ID: WL/VG- _____ <input checked="" type="checkbox"/> no																											
NOTES for HIGH BANK for Construction (if present)																												
Width (ft) Highest Bank to Highest Bank: _____ Highest Left Bank Height*: _____ Highest Left Bank Slope*: _____ Highest Right Bank Height*: _____ Highest Right Bank Slope*: _____ *Direction when facing downstream																												
OHWM Criteria – Ordinary High Water Mark																												
<input checked="" type="checkbox"/> clear, natural line impressed on bank <input type="checkbox"/> changes in character of soil <input type="checkbox"/> shelving <input type="checkbox"/> vegetation matted down, bent or absent <input type="checkbox"/> leaf litter disturbed or washed away <input type="checkbox"/> sediment deposition <input type="checkbox"/> water staining <input type="checkbox"/> presence of litter and debris <input type="checkbox"/> destruction of terrestrial vegetation <input type="checkbox"/> presence of wrack line <input type="checkbox"/> sediment sorting <input type="checkbox"/> scour <input type="checkbox"/> abrupt change in plant community <input type="checkbox"/> other (list): _____ Discontinuous OHWM: <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	Geometry: <input checked="" type="checkbox"/> Meandering <input type="checkbox"/> Relatively Straight Presence of: <input checked="" type="checkbox"/> run <input checked="" type="checkbox"/> pools <input checked="" type="checkbox"/> riffles Explain: All were present Is the stream/tributary: <input checked="" type="checkbox"/> natural <input type="checkbox"/> manmade – Explain: _____ <input type="checkbox"/> man-altered – Explain: _____ NOTES:																											

ATTACHMENT B
WETLAND AND WATER RESOURCE SUMMARY TABLES

WETLAND RESOURCE SUMMARY TABLE

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC (TRANSCO)

LEIDY SOUTH PROJECT - COMPRESSOR STATION 620A

WETLAND RESOURCE SUMMARY TABLE

Wetland ID	Dataform ID	Cowardin Code	Resource Size			Open-Ended Boundary	Waters Types	Latitude (dd nad83)	Longitude (dd nad83)	Chapter 105.17 Wetland Designation	Watershed Information			Wetland Description
			Length (feet)	Width (feet)	Area (sq. ft.)						Watershed Name	PA Code Chapter 93 Water Quality Designated Use	PA Code Chapter 93 Water Quality Existing Use	
W1-T1-CS620A	W1-T1-CS620A-1a, W1-T1-CS620A-2a	PEM	1,361	99	73,238	Yes	RPWWD	40.671557	-76.471581	Other	Deep Creek	CWF, MF	-	A PEM and PFO wetland complex that abuts Deep Creek. Areas of the wetland extend into active crop fields. Saturation, a depleted matrix and algal mats were present in the crop field.
	W1-T1-CS620A-1c	PFO	1,200	218	147,517			40.67169	-76.472393					
W1-T2-CS620A	W1-T2-CS620A-1a	PEM	75	25	1,774	No	RPWWD	40.670565	-76.470599	Other	Deep Creek	CWF, MF	-	A PEM floodplain wetland that abuts Deep Creek.
Total PEM Wetlands					75,012									
Total PSS Wetlands					0									
Total PFO Wetlands					147,517									
Total POW Wetlands					0									
TOTAL					222,529									

WATERCOURSE RESOURCE SUMMARY TABLE

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC (TRANSCO)
LEIDY SOUTH PROJECT - COMPRESSOR STATION 620A

WATERCOURSE RESOURCE SUMMARY TABLE

Watercourse ID	Stream Name	Type	Resource Size			Open-Ended Boundary	Waters Types	Latitude (dd nad83)	Longitude (dd nad83)	Watershed Name	PA Code Chapter 93 Water Quality		PFBC Classification			Watercourse Description
			Length (feet)	Width (feet)	Area (sq. ft.)						PA Code Chapter 93 Water Quality Designated Use	PA Code Chapter 93 Water Quality Existing Use	Stocked Trout	Naturally Reproducing Trout	Class A Wild Trout	
S1-T2-620A	Deep Creek	Perennial	1,841	50	94,066	Yes	RPW	40.671372	-76.469668	Deep Creek	CWF, MF	-	Yes	No	No	Flows acrossed the northern limits of the survey area. Fish observed within the stream. Erosion present.
S2-T2-620A	UNT to Deep Creek	Intermittent	565	4	2,258	Yes	RPW	40.674784	-76.474914	Deep Creek	CWF, MF	-	Yes	No	No	Begins at the woodline of a crop field. Erosion present
S3-T2-620A	UNT to Deep Creek	Ephemeral	92	4	368	No	NRPW	40.674568	-76.474778	Deep Creek	CWF, MF	-	Yes	No	No	Begins at the woodline of a crop field and flows into S2-T2-620A. Erosion present
Total Ephemeral Channels					368											
Total Intermittent Channels					2,258											
Total Perennial Channels					94,066											
TOTAL					96,692											