TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
LEIDY SOUTH PROJECT

APPENDIX F
COMPRESSOR STATION 607A WETLAND AND WATERCOURSE DELINEATION REPORT
FAIRMOUNT TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

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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 607A (Project) located in Fairmount Township, Luzerne County, Pennsylvania (Figure 1 – Project Location Map). The purpose of this investigation was to determine if 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, April 2019 and May 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 quadrangle for Sweet Valley, Pennsylvania, was reviewed in the vicinity of the project area. For more detailed topographic information, PAMAP LiDAR (2-foot Intervals) were 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 Wetlands Map. According to NWI mapping there are no NWI wetlands located within the investigation area.

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 Luzerne County, Pennsylvania. In addition, the hydric soils list for Luzerne County was reviewed to determine if these soils are Hydric Soils or contain Hydric Inclusion. There are 12 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
BkB	Bath channery silt loam	3 to 8	No
LaB	Lackawanna channery silt loam	3 to 8	No
LaC	Lackawanna channery silt loam	8 to 15	No
LaD	Lackawanna channery silt loam	15 to 25	No
LcB	Lackawanna channery silt loam, extremely stony	3 to 8	No
LcD	Lackawanna channery silt loam, extremely stony	8 to 25	No
MoB	Morris channery silt loam	0 to 8	Yes
MsB	Morris channery silt loam, extremely stony	0 to 8	Yes
OlC	Oquaga and Lordstown channery silt loam	8 to 15	No
OpD	Oquaga and Lordstown extremely stony silt loam	8 to 25	No
OXF	Oquaga and Lordstown extremely stony silt loam	Steep	No
WlB	Wellsboro channery silt loam	3 to 8	No

Table 2-1: 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

Ten wetlands were identified during the delineation. Most wetlands delineated are isolated. One large Palustrine Emergent (PEM)/Palustrine Forested (PFO) wetland complex was identified in the southeast corner and is hydrologically connected several stream channels. A PEM/ Palustrine scrub-shrub (PSS) wetland complex was identified in the northern portion of the investigation area. A total of 183,688 square feet of PEM wetlands, 980 square feet of PSS wetlands, and 43,760 square feet of PFO wetlands were identified during the delineation.

3.2 WATERWAYS

Nine stream channels were identified during the delineation. All channels delineated were intermittent but one, which was ephemeral. All channels flowed in an eastern direction. A total of 26,845 square feet of channel were identified. Approximately

298 square feet of ephemeral channel and 26,547 square feet of intermittent channels were identified.

4.0 CONCLUSIONS

Based on the results of the field investigation 228,408 square feet of wetlands 26,845 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.

6.0 REFERENCES

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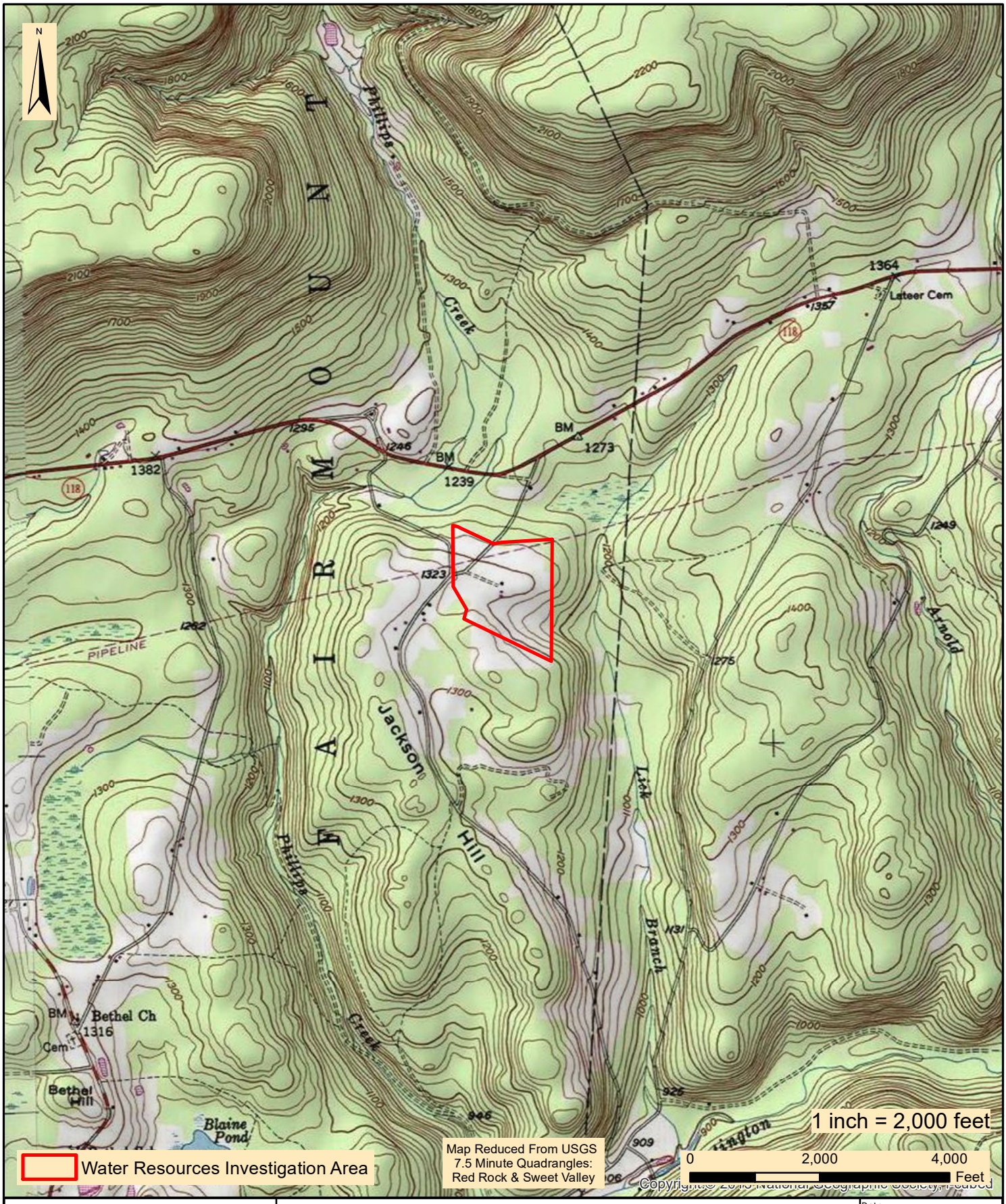
FIGURES



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State College, PA 16803
Tele: 814.689.1650 Fax: 814.689.1557

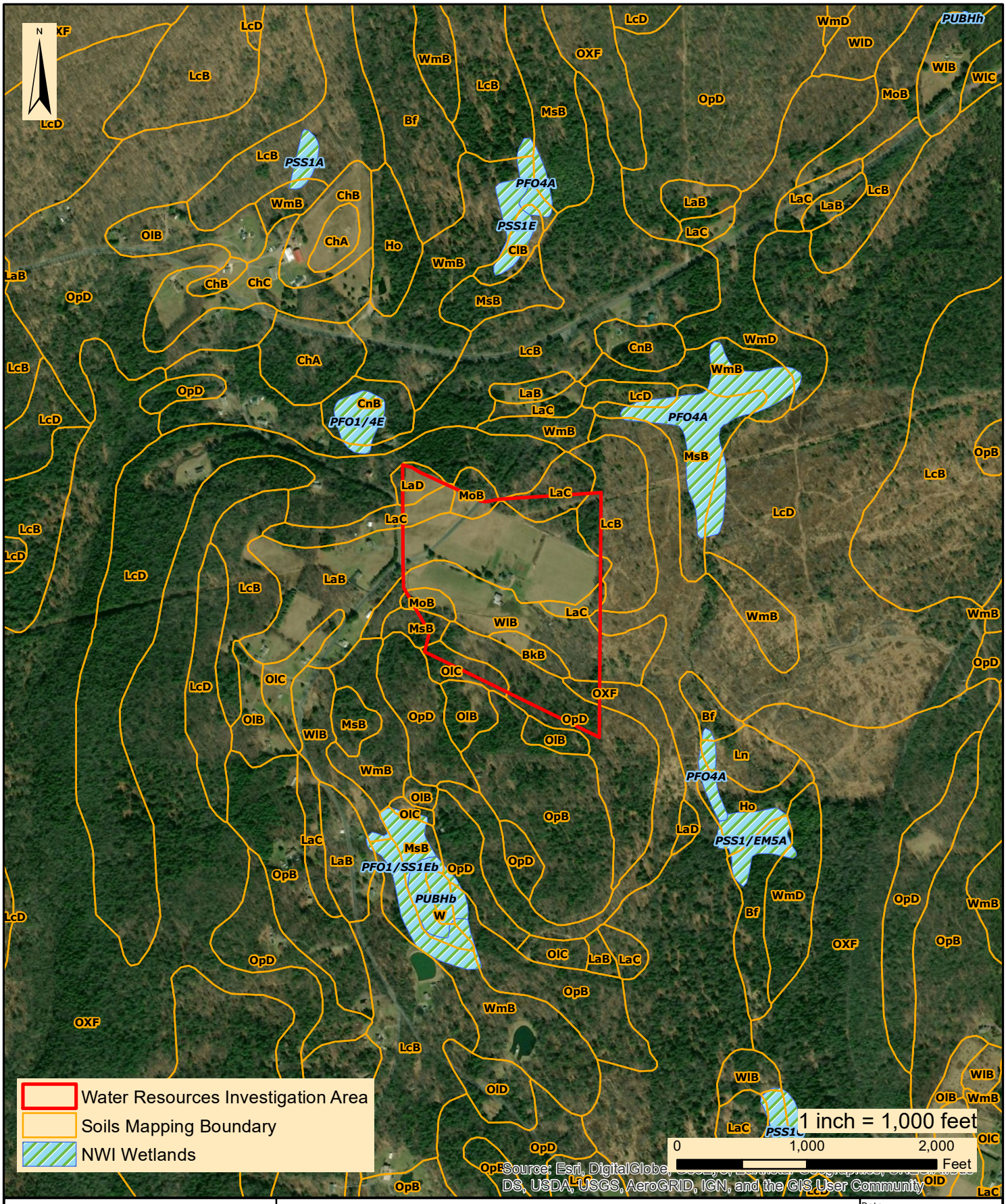
TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC

LEIDY SOUTH PROJECT
COMPRESSOR STATION 607-A

PROJECT LOCATION MAP

FAIRMOUNT TOWNSHIP LUZERNE COUNTY PENNSYLVANIA

Date:	02/22/19
WHM Drawing Number:	WILLIAMS204A001
Drawn By:	JSJ
Figure Number:	1



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LEIDY SOUTH PROJECT
COMPRESSOR STATION 607-A

USDA-NRCS SOILS AND NWI WETLANDS MAP

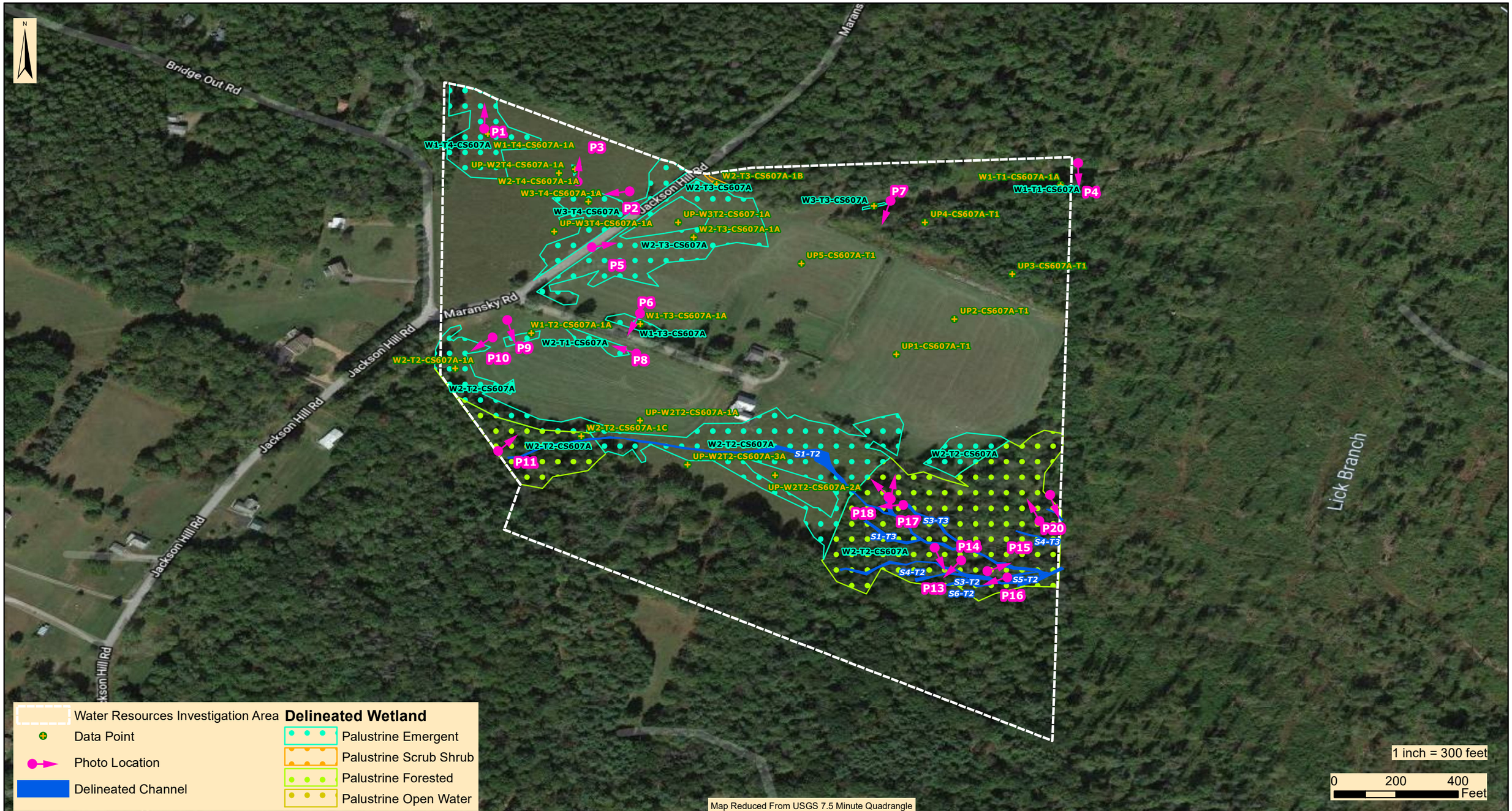
FAIRMOUNT TOWNSHIP | LUZERNE COUNTY | PENNSYLVANIA

Date:	02/22/19
WHM Drawing Number:	WILLIAMS204A002
Drawn By:	JSJ
Figure Number:	2

ATTACHMENT A

WETLAND AND WATER RESOURCE DELINEATION DATA PACKAGE

WATER RESOURCES DELINEATION MAP



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TRANSCONTINENTAL GAS PIPE LINE COMAPNY, LLC

LEIDY SOUTH PROJECT

COMPRESSOR STATION 607-A

WATER RESOURCES DELINEATION MAP

FAIRMOUNT TOWNSHIP | LUZERNE COUNTY | PENNSYLVANIA

Date: 07/03/19

WHM DRAWING NUMBER: WILLIAMS204A003

Drawn By: NJD

Figure Number: 3

PHOTOGRAPHIC DOCUMENTATION

ID: Photo 1

Date: 04/03/19

Taken by: JH

Comments: The photo shows a view of wetland W1-T4-CS607A.

ID: Photo 2

Date: 04/03/19

Taken by: JH

Comments: The photo shows a view of wetland W3-T4-CS607A.

ID: Photo 3

Date: 04/03/19

Taken by: JH

Comments: The photo shows a view of wetland W2-T4-CS607A.

ID: Photo 4

Date: 04/03/19

Taken by: JH

Comments: The photo shows a view of wetland W1-T4-CS607A.

ID: Photo 5

Date: 03/27/19

Taken by: JH

Comments:
The photo shows a view of wetland W2-T3-CS607A.

ID: Photo 6

Date: 03/27/19

Taken by: JH

Comments:
The photo shows a view of wetland W1-T3-CS607A.

ID: Photo 7

Date: 03/27/19

Taken by: JH

Comments:
The photo shows a view of wetland W3-T3-CS607A.

ID: Photo 8

Date: 03/26/19

Taken by: DW

Comments:
The photo shows a view of wetland W2-T1-CS607A.

ID: Photo 9

Date: 03/27/19

Taken by: DW

Comments: The photo shows a view of wetland W1-T2-CS607A.

ID: Photo 10

Date: 03/27/19

Taken by: DW

Comments: The photo shows a view of wetland W2-T2-CS607A.

ID: Photo 11

Date: 03/27/19

Taken by: DW

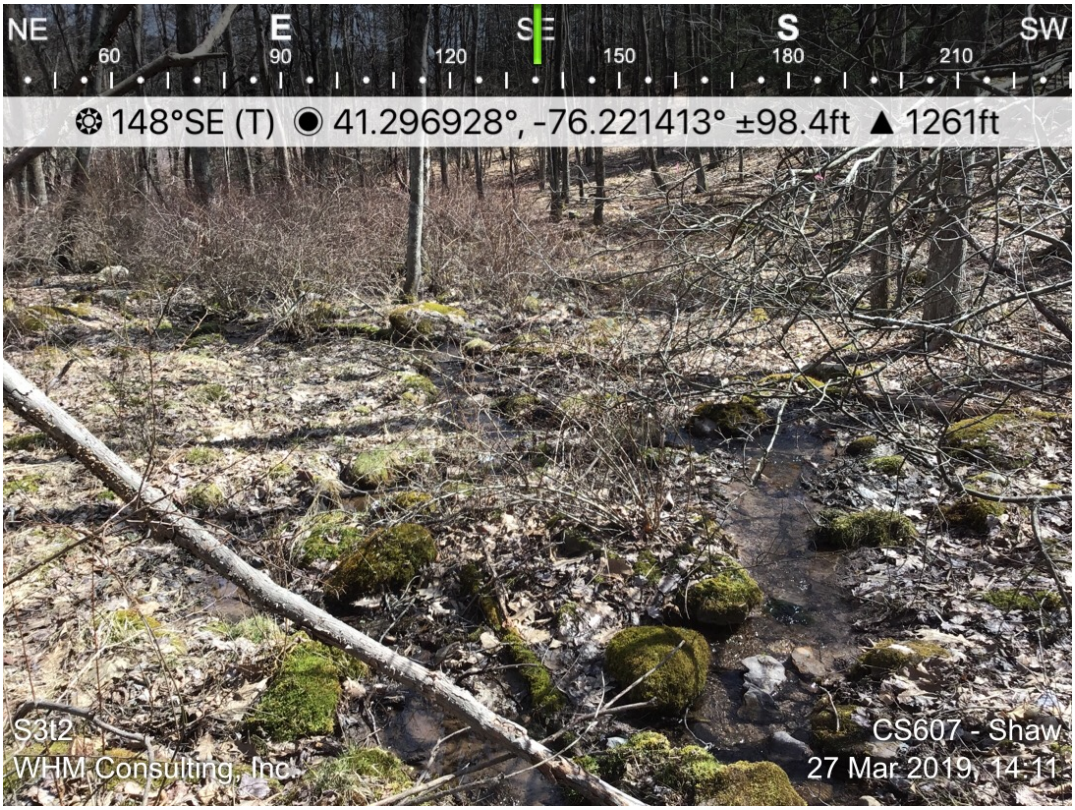
Comments:
The photo shows a view of stream S1-T2-CS607A within a PFO potion of wetland W2-T2-CS607A.

ID: Photo 12

Date: 03/27/19

Taken by: DW

Comments:
The photo shows a view of stream S2-T2-CS607A.

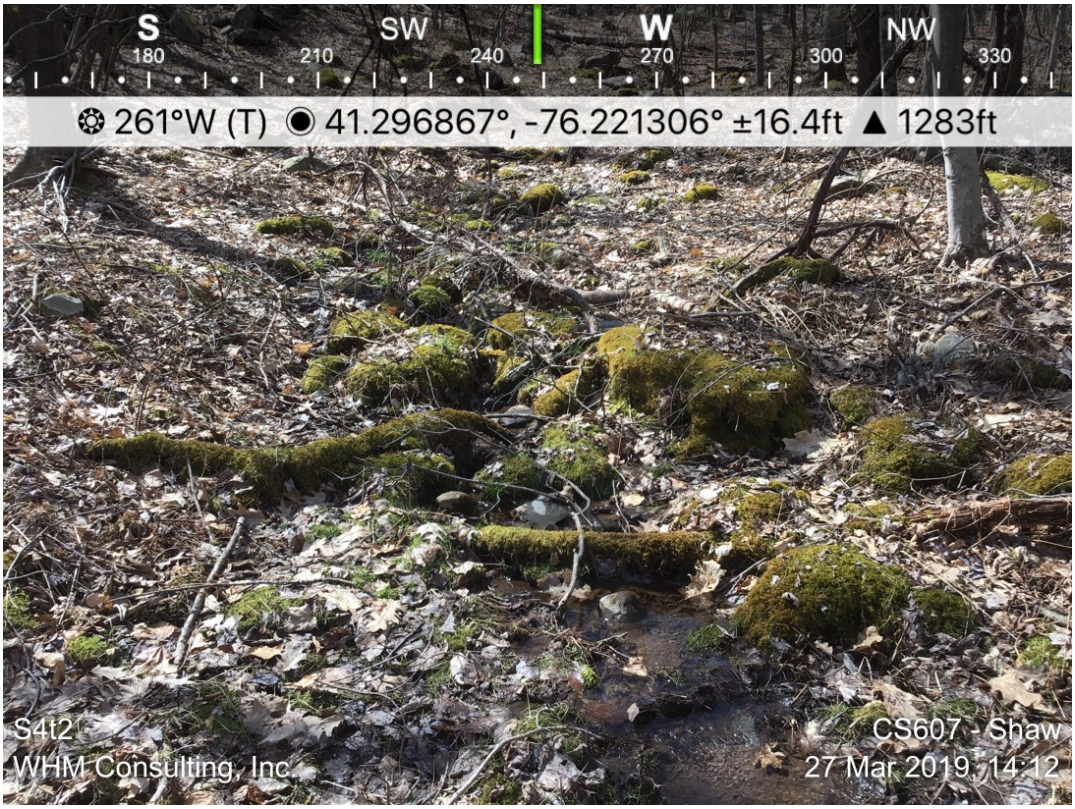


ID: Photo 13

Date: 03/27/19

Taken by: DW

Comments:
The photo shows a view of stream S3-T2-CS607A.



ID: Photo 14

Date: 03/27/19

Taken by: DW

Comments:
The photo shows a view of stream S4-T2-CS607A.

ID: Photo 15

Date: 03/27/19

Taken by: DW

Comments:
The photo shows a view of stream S5-T2-CS607A.

ID: Photo 16

Date: 03/27/19

Taken by: DW

Comments:
The photo shows a view of stream S6-T2-CS607A.

ID: Photo 17

Date: 03/27/19

Taken by: JH

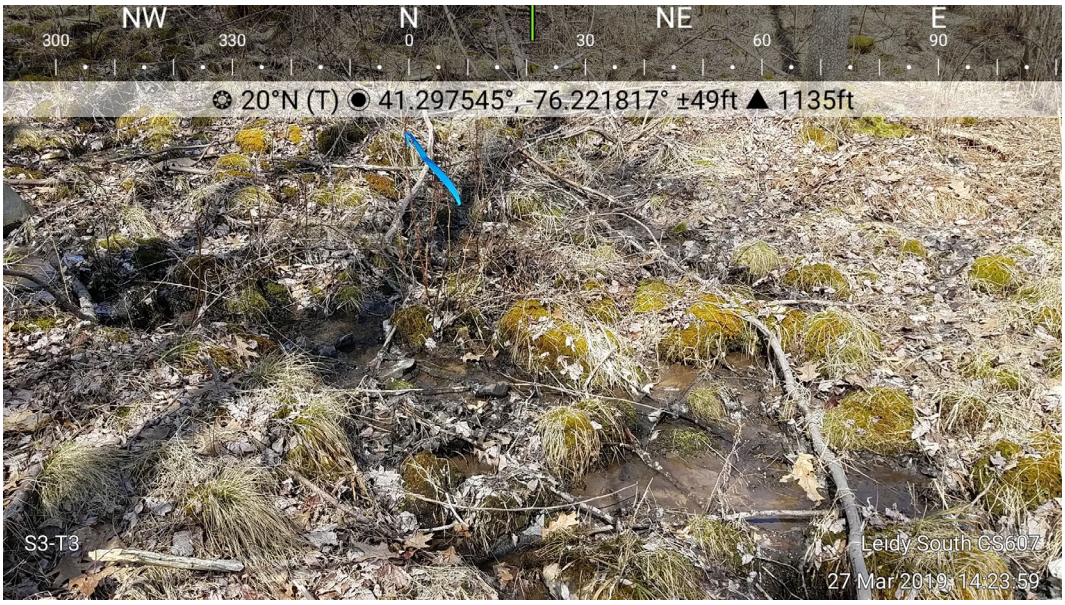
Comments:
The photo shows a view of stream S1-T3-CS607A.

ID: Photo 18

Date: 03/27/19

Taken by: JH

Comments:
The photo shows a view of stream S2-T3-CS607A.



ID: Photo 19

Date: 03/27/19

Taken by: JH

Comments:
The photo shows a view of stream S3-T3-CS607A.

ID: Photo 20

Date: 03/27/19

Taken by: JH

Comments:
The photo shows a view of stream S4-T3-CS607A.

WETLAND, UPLAND, AND WATERWAYS DATA FORMS

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 3/26/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point W1-T1-CS607A-1A

Investigator(s): DW, CG Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): concave Slope (%): 3 to 8%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.300257 Long.: -76.220326 Datum: NAD 83

Soil Map Unit Name: Lackawanna channery silt loam (LcB) 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?	Yes	**Is the sampled area within a wetland?**	Yes X No ____
Hydric soil present?	Yes		
Wetland hydrology present?	Yes		

Remarks: W1-T1-CS607-1A is located within a PEM wetland that is on the edge of a forested area.

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
X Surface Water (A1)	____ Water-Stained Leaves (B9)	____ Surface Soil Cracks (B6)
____ High Water Table (A2)	____ Aquatic Fauna (B13)	____ Drainage Patterns (B10)
X Saturation (A3)	____ Marl Deposits (B15)	____ Moss Trim Lines (B16)
____ Water Marks (B1)	____ Hydrogen Sulfide Odor (C1)	____ Dry-Season Water Table (C2)
____ Sediment Deposits (B2)	____ Oxidized Rhizospheres on Living Roots (C3)	____ Crayfish Burrows (C8)
____ Drift Deposits (B3)	____ Presence of Reduced Iron (C4)	____ Saturation Visible on Aerial Imagery (C9)
____ Algal Mat or Crust (B4)	____ Recent Iron Reduction in Tilled Soils (C6)	____ Stunted or Stressed Plants (D1)
____ Iron Deposits (B5)	____ Thin Muck Surface (C7)	____ Geomorphic Position (D2)
____ Inundation Visible on Aerial Imagery (B7)	____ Other (Explain in Remarks)	____ Shallow Aquitard (D3)
____ Sparsely Vegetated Concave Surface (B8)		____ FAC-Neutral Test (D5)
		____ Microtopographic Relief (D4)

Field Observations:

Surface water present? Yes X No ____ Depth (inches): 4"

Water table present? Yes ____ No X Depth (inches): ____

Saturation present? Yes X No ____ Depth (inches): 0"

(includes capillary fringe)

Wetland hydrology present? Yes X No ____

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: W1-T1-CS607A-1A

Tree Stratum (Plot Size:_____30'____)		Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
		=	Total Cover	

Sapling/Shrub Stratum (Plot Size:____15'____		Absolute % Cover	Dominant Species	Indicator Staus
1	*Tsuga canadensis*	5	Yes	FACU
2	*Vaccinium corybosum*	5	Yes	FACW
3				
4				
5				
6				
7				
		=	Total Cover	

Herb Stratum (Plot Size:_____5'_____)		Absolute % Cover	Dominant Species	Indicator Staus
1	*Osmundastrum cinnamomeum*	15	Yes	FACW
2	*Rubus hispidus*	10	Yes	FACW
3	*Spiraea alba*	10	Yes	FACW
4	*Betula lenta*	2	No	FACU
5				
6				
7				
8				
		37* =	Total Cover	

Woody Vine Stratum (Plot Size:_____30'_____		Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
		=	Total Cover	

Dominance Test Worksheet

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

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

Percent of Dominant Species that are OBL, FACW, or FAC: 80.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

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 - Morphogical 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: (Include photo numbers here or on a separate sheet)
*Sphagnum moss covered 60% of aerial coverage.

SOIL **Sampling Point:** W1-T1-CS607A-1A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-6"	10YR 4/2	90	7.5 YR 5/6	10	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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Rock refusal (frozen)

Depth (inches): 6"

Hydric soil present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 3/27/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: W1-T2-CS607A-1A

Investigator(s): DW, CC Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): concave Slope (%): 3 to 8%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.298947 Long.: -76.225016 Datum: NAD 83

Soil Map Unit Name: Wellsboro channery silt loam (WIB) 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? Yes	**Is the sampled area within a wetland?** Yes X No ____
Hydric soil present? Yes	
Wetland hydrology present? Yes	

Remarks: W1-T2-CS607A-1A is located within PEM wetland. The wetland is located in a field between wetlands W2-T2-CS607A and W2-T1-CS607A.

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
___ Surface Water (A1)	___ Water-Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Drainage Patterns (B10)
X Saturation (A3)	___ Marl Deposits (B15)	___ Moss Trim Lines (B16)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Dry-Season Water Table (C2)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Crayfish Burrows (C8)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Saturation Visible on Aerial Imagery (C9)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Stunted or Stressed Plants (D1)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Geomorphic Position (D2)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	___ Shallow Aquitard (D3)
___ Sparsely Vegetated Concave Surface (B8)		x FAC-Neutral Test (D5)
		___ Microtopographic Relief (D4)

Field Observations:

Surface water present? Yes ____ No X Depth (inches): ____

Water table present? Yes ____ No X Depth (inches): ____

Saturation present? Yes X No ____ Depth (inches): surface

(includes capillary fringe)

Wetland hydrology present? Yes X No ____

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: W1-T2-CS607A-1A

Tree Stratum (Plot Size:_____30'____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	=	Total Cover	

Sapling/Shrub Stratum (Plot Size:____15'____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	=	Total Cover	

Herb Stratum (Plot Size:_____5'_____)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Carex lurida*	60	Yes	OBL
2 *Poa trivialis*	30	Yes	FACW
3 *Carex sp.* *	15	No	-
4 *Juncus effusus*	10	No	OBL
5			
6			
7			
8			
	115 =	Total Cover	

Woody Vine Stratum (Plot Size:_____30'_____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
	=	Total Cover	

Dominance Test Worksheet

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

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

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

Prevalence Index Worksheet

Total % Cover of:

OBL species ____ x 1 = ____

FACW species ____ x 2 = ____

FAC species ____ x 3 = ____

FACU species ____ x 4 = ____

UPL species ____ x 5 = ____

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 - Morphogical 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: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** W1-T2-CS607A-1A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10"	10YR 4/1	80	7.5YR 5/6	20	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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: rock

Depth (inches): 10"

Hydric soil present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 3/27/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: W1-T3-CS607A-1A

Investigator(s): JH, CG Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): concave Slope (%): 0 to 8%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.299025 Long.: -76.224049 Datum: NAD 83

Soil Map Unit Name: Lackawanna channery silt loam (LaC) 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? Yes	**Is the sampled area within a wetland?** Yes X No ____
Hydric soil present? Yes	
Wetland hydrology present? Yes	

Remarks: W1-T3-CS607A-1A is located within a PEM wetland in a field along an farm lane.

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
___ Surface Water (A1)	___ Water-Stained Leaves (B9)	___ Surface Soil Cracks (B6)
X High Water Table (A2)	___ Aquatic Fauna (B13)	___ Drainage Patterns (B10)
X Saturation (A3)	___ Marl Deposits (B15)	___ Moss Trim Lines (B16)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Dry-Season Water Table (C2)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Crayfish Burrows (C8)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Saturation Visible on Aerial Imagery (C9)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Stunted or Stressed Plants (D1)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Geomorphic Position (D2)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	___ Shallow Aquitard (D3)
___ Sparsely Vegetated Concave Surface (B8)		___ FAC-Neutral Test (D5)
		___ Microtopographic Relief (D4)

Field Observations:

Surface water present? Yes ____ No X Depth (inches): ____

Water table present? Yes X No ____ Depth (inches): 10"

Saturation present? Yes X No ____ Depth (inches): ____

(includes capillary fringe)

Wetland hydrology present? Yes X No ____

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: W1-T3-CS607A-1A

Tree Stratum (Plot Size:_____30'____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	= Total Cover		

Sapling/Shrub Stratum (Plot Size:____15'____	Absolute % Cover	Dominant Species	Indicator Staus
1 *Phleum pratense*	25	Yes	FACU
2 *Carex lurida*	20	Yes	OBL
3 *Carex vulpinoidea*	15	No	OBL
4 *Juncus effusus*	15	No	FACW
5 *Carex scoparia*	15	No	FACW
6			
7			
	90 = Total Cover		

Herb Stratum (Plot Size:_____5'_____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
8			
	= Total Cover		

Woody Vine Stratum (Plot Size:_____30'_____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
	= 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: 2 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species	35	x 1 =	35
FACW species	30	x 2 =	60
FAC species		x 3 =	
FACU species	25	x 4 =	100
UPL species		x 5 =	
Column totals	90 (A)		195 (B)

Prevalence Index = B/A = 2.17

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid test for hydrophytic vegetation
- ___ 2 - Dominance test is >50%
- X 3 - Prevalence index is ≤3.0*
- ___ 4 - Morphogical 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: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** W1-T3-CS607A-1A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8"	10YR 4/2	95	7.5YR 4/6	5	C	M	clay loam	
8-12"	10YR4/3	85	7.5YR 4/6	15	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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 4/3/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: W1-T4-CS607A-1A

Investigator(s): DW, JH Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 15 to 25%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.300398 Long.: -76.224627 Datum: NAD 83

Soil Map Unit Name: Lackawanna channery silt loam (LaD) 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? Yes	**Is the sampled area within a wetland?** Yes X No ___
Hydric soil present? Yes	
Wetland hydrology present? Yes	

Remarks: W1-T4-CS607A-1A is located within a PEM wetland located in a hayfield. Wheel ruts were observed in the wetland.

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
___ Surface Water (A1)	X Water-Stained Leaves (B9)	___ Surface Soil Cracks (B6)
___ High Water Table (A2)	___ Aquatic Fauna (B13)	___ Drainage Patterns (B10)
X Saturation (A3)	___ Marl Deposits (B15)	___ Moss Trim Lines (B16)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Dry-Season Water Table (C2)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Crayfish Burrows (C8)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Saturation Visible on Aerial Imagery (C9)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Stunted or Stressed Plants (D1)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Geomorphic Position (D2)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	___ Shallow Aquitard (D3)
___ Sparsely Vegetated Concave Surface (B8)		___ FAC-Neutral Test (D5)
		___ Microtopographic Relief (D4)

Field Observations:

Surface water present? Yes ___ No X Depth (inches): ___

Water table present? Yes ___ No X Depth (inches): ___

Saturation present? Yes X No ___ Depth (inches): surface

(includes capillary fringe)

Wetland hydrology present? Yes X No ___

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: W1-T4-CS607A-1A

Tree Stratum (Plot Size:_____30'____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	= Total Cover		

Sapling/Shrub Stratum (Plot Size:____15'____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	= Total Cover		

Herb Stratum (Plot Size:_____5'_____)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Juncus effusus*	40	Yes	OBL
2 *Poaceae sp.*	30	Yes	-
3 *Scirpus cyperinus*	25	Yes	FACW
4 *Scirpus atrovirens*	15	No	OBL
5 *Carex sp.*	15	No	-
6			
7			
8			
	125 = Total Cover		

Woody Vine Stratum (Plot Size:_____30'_____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
	= Total Cover		

Dominance Test Worksheet

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

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

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

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 - Morphogical 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: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** W1-T4-CS607A-1A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10"	7.5YR 4/2	85	5YR 5/6	15	C	M	silt loam	
0-14"	7.5YR 5/3	85	5YR 5/6	15	C	M	gravelly 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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 3/26/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point W2-T1-CS607A-1A

Investigator(s): DW, CG Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): Hilltop Local relief (concave, convex, none): concave Slope (%): 3 to 8%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.298862 Long.: -76.224436 Datum: NAD 83

Soil Map Unit Name: Wellsboro channery silt loam (WIB) 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?	Yes	**Is the sampled area within a wetland?**	Yes X No ____
Hydric soil present?	Yes		
Wetland hydrology present?	Yes		

Remarks: W2-T1-CS607A-1A is a depressional PEM wetland located on the side of an existing driveway.

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
X Surface Water (A1)	X Water-Stained Leaves (B9)	____ Surface Soil Cracks (B6)
____ High Water Table (A2)	____ Aquatic Fauna (B13)	____ Drainage Patterns (B10)
X Saturation (A3)	____ Marl Deposits (B15)	____ Moss Trim Lines (B16)
____ Water Marks (B1)	____ Hydrogen Sulfide Odor (C1)	____ Dry-Season Water Table (C2)
____ Sediment Deposits (B2)	____ Oxidized Rhizospheres on Living Roots (C3)	____ Crayfish Burrows (C8)
____ Drift Deposits (B3)	____ Presence of Reduced Iron (C4)	____ Saturation Visible on Aerial Imagery (C9)
____ Algal Mat or Crust (B4)	____ Recent Iron Reduction in Tilled Soils (C6)	____ Stunted or Stressed Plants (D1)
____ Iron Deposits (B5)	____ Thin Muck Surface (C7)	____ Geomorphic Position (D2)
____ Inundation Visible on Aerial Imagery (B7)	____ Other (Explain in Remarks)	____ Shallow Aquitard (D3)
____ Sparsely Vegetated Concave Surface (B8)		____ FAC-Neutral Test (D5)
		____ Microtopographic Relief (D4)

Field Observations:

Surface water present? Yes X No ____ Depth (inches): 3"

Water table present? Yes ____ No X Depth (inches): ____

Saturation present? Yes X No ____ Depth (inches): 0"

(includes capillary fringe)

Wetland hydrology present? Yes X No ____

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: W2-T1-CS607A-1A

Tree Stratum (Plot Size:_____30'____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	=	Total Cover	

Sapling/Shrub Stratum (Plot Size:____15'____	Absolute % Cover	Dominant Species	Indicator Staus
1 *Cornus amomum*	5	Yes	FACW
2			
3			
4			
5			
6			
7			
	=	Total Cover	

Herb Stratum (Plot Size:_____5'_____)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Scirpus atrovirens*	30	Yes	OBL
2 *Phleum pratense*	30	Yes	FACU
3 *Juncus effusus*	20	Yes	FACW
4 *Carex stricta*	10	No	OBL
5 *Dichanthelium clandestinum*	5	No	FACW
6			
7			
8			
	95 =	Total Cover	

Woody Vine Stratum (Plot Size:_____30'_____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
	=	Total Cover	

Dominance Test Worksheet

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

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

Percent of Dominant Species that are OBL, FACW, or FAC: 75.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species ____ x 1 = ____

FACW species ____ x 2 = ____

FAC species ____ x 3 = ____

FACU species ____ x 4 = ____

UPL species ____ x 5 = ____

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 - Morphogical 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: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** W2-T1-CS607A-1A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-7"	10YR 2/2	95	10YR 4/6	5			Clay loam	
7-14"	10YR 4/4	100					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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 3/27/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: W2-T2-CS607A-1A

Investigator(s): DW, CC Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): concave Slope (%): 3 to 8%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.298632 Long.: -76.225689 Datum: NAD 83

Soil Map Unit Name: Wellsboro channery silt loam (WIB) 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?	Yes	**Is the sampled area within a wetland?**	Yes X No ____
Hydric soil present?	Yes		
Wetland hydrology present?	Yes		

Remarks: W2-T2-CS607-1A is located within the PEM portion of a PEM/PFO wetland complex that is located wihtin a field. S1-T2 flows throughout the wetland. Evidence of grazing was present within this portion wetland.

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
___ Surface Water (A1)	___ Water-Stained Leaves (B9)	___ Surface Soil Cracks (B6)
X High Water Table (A2)	___ Aquatic Fauna (B13)	___ Drainage Patterns (B10)
X Saturation (A3)	___ Marl Deposits (B15)	___ Moss Trim Lines (B16)
___ Water Marks (B1)	___ Hydrogen Sulfide Odor (C1)	___ Dry-Season Water Table (C2)
___ Sediment Deposits (B2)	X Oxidized Rhizospheres on Living Roots (C3)	___ Crayfish Burrows (C8)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Saturation Visible on Aerial Imagery (C9)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Stunted or Stressed Plants (D1)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Geomorphic Position (D2)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	___ Shallow Aquitard (D3)
___ Sparsely Vegetated Concave Surface (B8)		x FAC-Neutral Test (D5)
		___ Microtopographic Relief (D4)

Field Observations:

Surface water present? Yes ____ No X Depth (inches): ____

Water table present? Yes X No ____ Depth (inches): 2"

Saturation present? Yes X No ____ Depth (inches): surface

(includes capillary fringe)

Wetland hydrology present? Yes X No ____

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: W2-T2-CS607A-1A

Tree Stratum (Plot Size:_____30'____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	= Total Cover		

Sapling/Shrub Stratum (Plot Size:____15'____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	= Total Cover		

Herb Stratum (Plot Size:_____5'_____)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Juncus effusus*	50	Yes	OBL
2 *Carex sp.*	30	Yes	-
3 *Poa trivialis*	20	Yes	FACW
4			
5			
6			
7			
8			
	100 = Total Cover		

Woody Vine Stratum (Plot Size:_____30'_____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
	= Total Cover		

Dominance Test Worksheet

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

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

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

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 - Morphogical 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: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** W2-T2-CS607A-1A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14"	10YR 4/1	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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: rock

Depth (inches): 10"

Hydric soil present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 3/27/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: UP-W2T2-CS607A-1A

Investigator(s): DW, CC Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): none Slope (%): 3 to 8%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.298947 Long.: -76.225016 Datum: NAD 83

Soil Map Unit Name: Wellsboro channery silt loam (WIB) 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?	No	**Is the sampled area within a wetland?**	Yes	____	No X
Hydric soil present?	No				
Wetland hydrology present?	No				

Remarks: UP-W2T2-CS607A-1A is located within an upland area just north of wetland W2-T2-CS607A in a hayfield.

HYDROLOGY

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

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes	____	No	X	Depth (inches):	____
Water table present?	Yes	____	No	X	Depth (inches):	____
Saturation present? (includes capillary fringe)	Yes	____	No	X	Depth (inches):	____

Wetland hydrology present? Yes ____ No X

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: UP-W2T2-CS607A-1A

Tree Stratum (Plot Size:_____30'____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	= 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 *Phleum pratense*	60	Yes	FACU
2 *Dactylis glomerata*	30	Yes	FACU
3 *Lolium perenne*	20	No	FACU
4 Schizachyrium scoparium	5	No	FACU
5			
6			
7			
8			
	115 = Total Cover		

Woody Vine Stratum (Plot Size:_____30'_____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
	= 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: 2 (B)

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

Prevalence Index Worksheet

Total % Cover of:

OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species	115	x 4 =	460
UPL species		x 5 =	
Column totals	115 (A)		460 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid test for hydrophytic vegetation

___ 2 - Dominance test is >50%

___ 3 - Prevalence index is ≤3.0*

___ 4 - Morphogical 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: (Include photo numbers here or on a separate sheet) UP-W2T2-CS607A-1A was taken in a hayfield.

SOIL **Sampling Point:** UP-W2T2-CS607A-1A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12"	10YR 4/3	100				M	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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: rock

Depth (inches): 12"

Hydric soil present? Yes ___ No X

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 3/27/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: UP-W2T2-CS607A-2A

Investigator(s): DW, CC Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): none Slope (%): 3 to 8%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.297686 Long.: -76.222856 Datum: NAD 83

Soil Map Unit Name: Wellsboro channery silt loam (WIB) 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?	No	**Is the sampled area within a wetland?**	Yes ____	No X
Hydric soil present?	No			
Wetland hydrology present?	No			

Remarks: UP-W2T2-CS607A-2a is located within an upland area adjacent to W2-T2-CS607A.

HYDROLOGY

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

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes ____	No X	Depth (inches): ____	**Wetland hydrology present?**	Yes ____ No X
Water table present?	Yes ____	No X	Depth (inches): ____		
Saturation present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____		

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: UP-W2T2-CS607A-2A

Tree Stratum (Plot Size:_____30'____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	= Total Cover		

Sapling/Shrub Stratum (Plot Size:____15'____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	= Total Cover		

Herb Stratum (Plot Size:_____5'_____)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Festuca rubra*	60	Yes	FACU
2 *Potentillia pensylvanica*	15	Yes	FACU
3 *Juncus effusus*	5	No	OBL
4			
5			
6			
7			
8			
	80 = Total Cover		

Woody Vine Stratum (Plot Size:_____30'_____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
	= 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: 2 (B)

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

Prevalence Index Worksheet

Total % Cover of:

OBL species	5	x 1 =	5
FACW species		x 2 =	
FAC species		x 3 =	
FACU species	75	x 4 =	300
UPL species		x 5 =	
Column totals	80 (A)		305 (B)

Prevalence Index = B/A = 3.81

Hydrophytic Vegetation Indicators:

___ 1 - Rapid test for hydrophytic vegetation

___ 2 - Dominance test is >50%

___ 3 - Prevalence index is ≤3.0*

___ 4 - Morphogical 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: (Include photo numbers here or on a separate sheet) UP-W2T2-CS607A-2A was taken in a horse pasture.

SOIL **Sampling Point:** UP-W2T2-CS607A-2A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8"	10YR 3/1	100					silt loam	
8-12"	10YR 3/2	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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: rock

Depth (inches): 12"

Hydric soil present? Yes ___ No X

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 3/27/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: UP-W2T2-CS607A-3A

Investigator(s): DW, CC Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): none Slope (%): 3 to 8%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.297781 Long.: -76.223632 Datum: NAD 83

Soil Map Unit Name: Wellsboro channery silt loam (WIB) 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?	No	**Is the sampled area within a wetland?**	Yes ____ No X
Hydric soil present?	No		
Wetland hydrology present?	No		

Remarks: UP-W2T2-CS607A-3a is located within an upland area adjacent to W2-T2-CS607A.

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
____ Surface Water (A1)	____ Water-Stained Leaves (B9)	____ Surface Soil Cracks (B6)
____ High Water Table (A2)	____ Aquatic Fauna (B13)	____ Drainage Patterns (B10)
____ Saturation (A3)	____ Marl Deposits (B15)	____ Moss Trim Lines (B16)
____ Water Marks (B1)	____ Hydrogen Sulfide Odor (C1)	____ Dry-Season Water Table (C2)
____ Sediment Deposits (B2)	____ Oxidized Rhizospheres on Living Roots (C3)	____ Crayfish Burrows (C8)
____ Drift Deposits (B3)	____ Presence of Reduced Iron (C4)	____ Saturation Visible on Aerial Imagery (C9)
____ Algal Mat or Crust (B4)	____ Recent Iron Reduction in Tilled Soils (C6)	____ Stunted or Stressed Plants (D1)
____ Iron Deposits (B5)	____ Thin Muck Surface (C7)	____ Geomorphic Position (D2)
____ Inundation Visible on Aerial Imagery (B7)	____ Other (Explain in Remarks)	____ Shallow Aquitard (D3)
____ Sparsely Vegetated Concave Surface (B8)		____ FAC-Neutral Test (D5)
		____ Microtopographic Relief (D4)

Field Observations:

Surface water present? Yes ____ No X Depth (inches): ____

Water table present? Yes ____ No X Depth (inches): ____

Saturation present? Yes ____ No X Depth (inches): ____

(includes capillary fringe)

Wetland hydrology present? Yes ____ No X

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: UP-W2T2-CS607A-3A

Tree Stratum (Plot Size:_____30'____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	=	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 *Festuca rubra*	60	Yes	FACU
2 *Polytrichum sp.*	20	No	-
3 *Schizachyrium scoparium*	10	No	FACU
4 Fragaria virginiana	10	No	FACU
5 *Carex sp.*	10	No	-
6			
7			
8			
	110 =	Total Cover	

Woody Vine Stratum (Plot Size:_____30'_____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
	=	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		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species	80	x 4 =	320
UPL species		x 5 =	
Column totals	80 (A)		320 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid test for hydrophytic vegetation

___ 2 - Dominance test is >50%

___ 3 - Prevalence index is ≤3.0*

___ 4 - Morphogical 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: (Include photo numbers here or on a separate sheet) UP-W2T2-CS607A-3A was taken in a horse pasture.

SOIL **Sampling Point:** UP-W2T2-CS607A-3A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-4"	10YR 3/1	100					silt loam	
4-12"	10YR 3/3	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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: rock

Depth (inches): 12"

Hydric soil present? Yes ___ No X

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 3/27/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: W2-T2-CS607A-1C

Investigator(s): DW, CC Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): concave Slope (%): 0 to 8%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.298034 Long.: -76.224574 Datum: NAD 83

Soil Map Unit Name: Morris channery silt loam (MoB) 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?	Yes	**Is the sampled area within a wetland?**	Yes X No ____
Hydric soil present?	Yes		
Wetland hydrology present?	Yes		

Remarks:W2-T2-CS607A-1C is located in the western PFO portion of W2-T2-CS607A, a large PEM/PFO wetland complex. Channel S1-T2 flows throughout this portion of the wetland.

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
X Surface Water (A1)	X Water-Stained Leaves (B9)	____ Surface Soil Cracks (B6)
____ High Water Table (A2)	____ Aquatic Fauna (B13)	____ Drainage Patterns (B10)
X Saturation (A3)	____ Marl Deposits (B15)	____ Moss Trim Lines (B16)
____ Water Marks (B1)	X Hydrogen Sulfide Odor (C1)	____ Dry-Season Water Table (C2)
____ Sediment Deposits (B2)	____ Oxidized Rhizospheres on Living Roots (C3)	____ Crayfish Burrows (C8)
____ Drift Deposits (B3)	____ Presence of Reduced Iron (C4)	____ Saturation Visible on Aerial Imagery (C9)
____ Algal Mat or Crust (B4)	____ Recent Iron Reduction in Tilled Soils (C6)	____ Stunted or Stressed Plants (D1)
____ Iron Deposits (B5)	____ Thin Muck Surface (C7)	____ Geomorphic Position (D2)
____ Inundation Visible on Aerial Imagery (B7)	____ Other (Explain in Remarks)	____ Shallow Aquitard (D3)
____ Sparsely Vegetated Concave Surface (B8)		____ FAC-Neutral Test (D5)
		____ Microtopographic Relief (D4)

Field Observations:

Surface water present? Yes X No ____ Depth (inches): 6"

Water table present? Yes ____ No X Depth (inches): ____

Saturation present? Yes X No ____ Depth (inches): surface

(includes capillary fringe)

Wetland hydrology present? Yes X No ____

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: W2-T2-CS607A-1C

Tree Stratum (Plot Size:_____30'____)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Acer rubrum*	80	Yes	FAC
2			
3			
4			
5			
6			
7			
	=	Total Cover	

Sapling/Shrub Stratum (Plot Size:____15'____	Absolute % Cover	Dominant Species	Indicator Staus
1 *Vaccinium corymbosum*	10	Yes	FACW
2 *Rosa multiflora*	5	Yes	FACU
3			
4			
5			
6			
7			
	15 =	Total Cover	

Herb Stratum (Plot Size:_____5'_____)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Onoclea sensibilis*	20	Yes	FACW
2 *Carex sp.*	20	Yes	-
3			
4			
5			
6			
7			
8			
	=	Total Cover	

Woody Vine Stratum (Plot Size:_____30'_____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
	=	Total Cover	

Dominance Test Worksheet

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

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

Percent of Dominant Species that are OBL, FACW, or FAC: 60.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

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 - Morphogical 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: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** W2-T2-CS607A-1C

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14"	10YR 5/1	90	7.5YR 5/6	10	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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 3/27/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: W2-T3-CS607A-1A

Investigator(s): JH, CG Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0 to 8%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.299797 Long.: -76.223577 Datum: NAD 83

Soil Map Unit Name: Lackawanna channery silt loam (LaB) 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?	Yes	**Is the sampled area within a wetland?**	Yes X No ___
Hydric soil present?	Yes		
Wetland hydrology present?	Yes		

Remarks: W2-T3-CS607A-1A is located within wetland W2-T3-CS607A, a PEM/PSS wetland complex located within a hayfield above a pipeline ROW. Water conveys across pipeline and into PSS wetland.

HYDROLOGY

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

- X Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present?	Yes X	No ___	Depth (inches):	1-2"	
Water table present?	Yes ___	No X	Depth (inches):	___	**Wetland hydrology present?** Yes X No ___
Saturation present? (includes capillary fringe)	Yes X	No ___	Depth (inches):	0"	

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: W2-T3-CS607A-1A

Tree Stratum (Plot Size:_____30'____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	=	Total Cover	

Sapling/Shrub Stratum (Plot Size:____15'____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	=	Total Cover	

Herb Stratum (Plot Size:_____5'_____)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Scirpus atrovirens*	25	Yes	OBL
2 *Scirpus cyperinus*	25	Yes	FACW
3 *Juncus effusus*	20	Yes	FACW
4 *Carex lurida*	15	No	OBL
5 *Onoclea sensibilis*	15	No	FACW
6			
7			
8			
	100 =	Total Cover	

Woody Vine Stratum (Plot Size:_____30'_____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
	=	Total Cover	

Dominance Test Worksheet

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

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

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

Prevalence Index Worksheet

Total % Cover of:

OBL species ____ x 1 = ____

FACW species ____ x 2 = ____

FAC species ____ x 3 = ____

FACU species ____ x 4 = ____

UPL species ____ x 5 = ____

Column totals ____ (A) ____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

X 1 - Rapid test for hydrophytic vegetation

X 2 - Dominance test is >50%

___ 3 - Prevalence index is ≤3.0*

___ 4 - Morphogical 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: (Include photo numbers here or on a separate sheet)

SOIL

Sampling Point: W2-T3-CS607A-1A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10"	10YR 4/2	90	7.5YR 4/6	10	C	M	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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 3/27/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: UP-W2T3-CS607-1A

Investigator(s): JH, CG Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0 to 8%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.299928 Long.: -76.223715 Datum: NAD 83

Soil Map Unit Name: Lackawanna channery silt loam (LaB) 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 Y , soil N , or hydrology N significantly disturbed? Are "normal circumstances" present? Yes ____ No X

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? No

Hydric soil present? Yes

Wetland hydrology present? No

Is the sampled area within a wetland? Yes ____ No X

Remarks: UP-W3T2-CS607-1A is located within an upland area in the center of wetland W2-T3-CS607A. Area was recently disturbed by pipeline construction. Wetlands surround most of this area except within a portion of the recently disturbed pipeline ROW.

HYDROLOGY

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present? Yes ____ No X Depth (inches): ____

Water table present? Yes ____ No X Depth (inches): ____

Saturation present? Yes ____ No X Depth (inches): ____

(includes capillary fringe)

Wetland hydrology present? Yes ____ No X

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: UP-W2T3-CS607-1A

Tree Stratum (Plot Size:_____30'____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	=	Total Cover	

Sapling/Shrub Stratum (Plot Size:____15'____	Absolute % Cover	Dominant Species	Indicator Staus
1 *Lolium perenne*	80	Yes	FACU
2			
3			
4			
5			
6			
7			
	80* =	Total Cover	

Herb Stratum (Plot Size:_____5'_____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
8			
	=	Total Cover	

Woody Vine Stratum (Plot Size:_____30'_____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
	=	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		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species	80	x 4 =	320
UPL species		x 5 =	
Column totals	80 (A)		320 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid test for hydrophytic vegetation

___ 2 - Dominance test is >50%

___ 3 - Prevalence index is ≤3.0*

___ 4 - Morphogical 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: (Include photo numbers here or on a separate sheet)

* 20% of coverage comprised of rock and bare ground.

SOIL **Sampling Point:** UP-W2T3-CS607-1A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10"	10YR 4/2	80	7.5YR 4/6	20	C	M		soils were disturbed

*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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 3/27/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: W2-T3-CS607A-1B

Investigator(s): JH, CG Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 0 to 8%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.300267 Long.: -76.223373 Datum: NAD 83

Soil Map Unit Name: Morris channery silt loam (MoB) 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 ____ No X

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?	Yes	**Is the sampled area within a wetland?**	Yes X No ____
Hydric soil present?	Yes		
Wetland hydrology present?	Yes		

Remarks: W2-T3-CS607A-1B is located within the PSS portion of wetland W2-T3-CS607, a PEM/PSS wetland complex located within a hayfield along a pipeline ROW. The PSS area recieves hydrology from the PEM portion of the wetland. Recent soil deposition.

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
X Surface Water (A1)	___ Water-Stained Leaves (B9)	___ Surface Soil Cracks (B6)
X High Water Table (A2)	___ Aquatic Fauna (B13)	___ Drainage Patterns (B10)
X Saturation (A3)	___ Marl Deposits (B15)	___ Moss Trim Lines (B16)
___ Water Marks (B1)	X Hydrogen Sulfide Odor (C1)	___ Dry-Season Water Table (C2)
___ Sediment Deposits (B2)	___ Oxidized Rhizospheres on Living Roots (C3)	___ Crayfish Burrows (C8)
___ Drift Deposits (B3)	___ Presence of Reduced Iron (C4)	___ Saturation Visible on Aerial Imagery (C9)
___ Algal Mat or Crust (B4)	___ Recent Iron Reduction in Tilled Soils (C6)	___ Stunted or Stressed Plants (D1)
___ Iron Deposits (B5)	___ Thin Muck Surface (C7)	___ Geomorphic Position (D2)
___ Inundation Visible on Aerial Imagery (B7)	___ Other (Explain in Remarks)	___ Shallow Aquitard (D3)
___ Sparsely Vegetated Concave Surface (B8)		___ FAC-Neutral Test (D5)
		___ Microtopographic Relief (D4)

Field Observations:

Surface water present? Yes X No ____ Depth (inches): 6"

Water table present? Yes X No ____ Depth (inches): 0"

Saturation present? Yes X No ____ Depth (inches): 0"

(includes capillary fringe)

Wetland hydrology present? Yes X No ____

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: W2-T3-CS607A-1B

Tree Stratum (Plot Size:_____30'____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	= Total Cover		

Sapling/Shrub Stratum (Plot Size:____15'____	Absolute % Cover	Dominant Species	Indicator Staus
1 *Rosa multiflora*	40	Yes	FACU
2 *Salix discolor*	20	Yes	FACW
3 *Berberis thunbergii*	10	No	FACU
4			
5			
6			
7			
	70 = Total Cover		

Herb Stratum (Plot Size:_____5'_____)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Microstegium vimineum*	15	Yes	FAC
2 *Onoclea sensibilis*	5	No	FACW
3 *Solidago rugosa*	5	No	FAC
4 *Dichanthelium clandestinum*	5	No	FACW
5			
6			
7			
8			
	30 = Total Cover		

Woody Vine Stratum (Plot Size:_____30'_____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
	= Total Cover		

Dominance Test Worksheet

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

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

Percent of Dominant Species that are OBL, FACW, or FAC: 67.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

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 - Morphogical 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: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** W2-T3-CS607A-1B

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-3"	10YR 3/1	100					silt loam	rock refusal

*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)
- X Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Rock refusal

Depth (inches): 3

Hydric soil present? Yes X No ___

Remarks: Soils were problematic due to recent construction.

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 4/3/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: W2-T4-CS607A-1A

Investigator(s): DW, JH Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 8 to 15%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.300398 Long.: -76.224627 Datum: NAD 83

Soil Map Unit Name: Lackawanna channery silt loam (LaC) 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? Yes

Hydric soil present? Yes

Wetland hydrology present? Yes

Is the sampled area within a wetland? Yes X No ____

Remarks: W2-T4-CS607A-1A is located within wetland W2-T3-607A, a PEM wetland situated in a hayfield.

HYDROLOGY

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

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present? Yes ____ No X Depth (inches): ____

Water table present? Yes ____ No X Depth (inches): ____

Saturation present? Yes X No ____ Depth (inches): surface

(includes capillary fringe)

Wetland hydrology present? Yes X No ____

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: W2-T4-CS607A-1A

Tree Stratum (Plot Size:_____30'____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	=	Total Cover	

Sapling/Shrub Stratum (Plot Size:____15'____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	=	Total Cover	

Herb Stratum (Plot Size:_____5'_____)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Juncus effusus*	40	Yes	OBL
2 *Scirpus cyperinus*	30	Yes	FACW
3 *Poa trivialis*	20	Yes	FACW
4 *Carex sp.*	15		-
5			
6			
7			
8			
	105 =	Total Cover	

Woody Vine Stratum (Plot Size:_____30'_____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
	=	Total Cover	

Dominance Test Worksheet

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

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

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index Worksheet

Total % Cover of:

OBL species ____ x 1 = ____

FACW species ____ x 2 = ____

FAC species ____ x 3 = ____

FACU species ____ x 4 = ____

UPL species ____ x 5 = ____

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 - Morphogical 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: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** W2-T4-CS607A-1A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14"	7.5YR 4/1	90	7.5YR 5/6	10	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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 4/3/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: UP-W2T4-CS607A-1A

Investigator(s): DW, JH Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 8-15%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.300363 Long.: -76.224771 Datum: NAD 83

Soil Map Unit Name: Lackawanna channery silt loam (LaC) 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?	No	**Is the sampled area within a wetland?**	Yes ____ No X
Hydric soil present?	No		
Wetland hydrology present?	No		

Remarks: UP-W2T4-CS607A-1A is located within an upland area just west of wetland W2-T4-CS607A in a hayfield.

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
____ Surface Water (A1)	____ Water-Stained Leaves (B9)	____ Surface Soil Cracks (B6)
____ High Water Table (A2)	____ Aquatic Fauna (B13)	____ Drainage Patterns (B10)
____ Saturation (A3)	____ Marl Deposits (B15)	____ Moss Trim Lines (B16)
____ Water Marks (B1)	____ Hydrogen Sulfide Odor (C1)	____ Dry-Season Water Table (C2)
____ Sediment Deposits (B2)	____ Oxidized Rhizospheres on Living Roots (C3)	____ Crayfish Burrows (C8)
____ Drift Deposits (B3)	____ Presence of Reduced Iron (C4)	____ Saturation Visible on Aerial Imagery (C9)
____ Algal Mat or Crust (B4)	____ Recent Iron Reduction in Tilled Soils (C6)	____ Stunted or Stressed Plants (D1)
____ Iron Deposits (B5)	____ Thin Muck Surface (C7)	____ Geomorphic Position (D2)
____ Inundation Visible on Aerial Imagery (B7)	____ Other (Explain in Remarks)	____ Shallow Aquitard (D3)
____ Sparsely Vegetated Concave Surface (B8)		____ FAC-Neutral Test (D5)
		____ Microtopographic Relief (D4)

Field Observations:			
Surface water present?	Yes ____ No X	Depth (inches): ____	**Wetland hydrology present?** Yes ____ No X
Water table present?	Yes ____ No X	Depth (inches): ____	
Saturation present? (includes capillary fringe)	Yes ____ No X	Depth (inches): ____	

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: UP-W2T4-CS607A-1A

Tree Stratum (Plot Size:_____30'____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	=	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 *Poacaea sp.*	60	60	-
2 *Plantago lanceolata*	25	25	UPL
3 *Schizachyrium scoparium*	25	25	FACU
4 Rubus hispidus	10	10	FACW
5			
6			
7			
8			
	120 =	Total Cover	

Woody Vine Stratum (Plot Size:_____30'_____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
	=	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: 3 (B)

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

Prevalence Index Worksheet

Total % Cover of:

OBL species		x 1 =		
FACW species	10	x 2 =	20	
FAC species		x 3 =		
FACU species	25	x 4 =	100	
UPL species	25	x 5 =	125	
Column totals	60	(A)	245	(B)

Prevalence Index = B/A = 4.08

Hydrophytic Vegetation Indicators:

___ 1 - Rapid test for hydrophytic vegetation

___ 2 - Dominance test is >50%

___ 3 - Prevalence index is ≤3.0*

___ 4 - Morphogical 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: (Include photo numbers here or on a separate sheet) UP-W2T4-CS607A-1A was taken in a hayfield.

SOIL **Sampling Point:** UP-W2T4-CS607A-1A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8"	7.5YR 4/4	100					gravelly silt loam	Rock refusal

*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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: rock

Depth (inches): 8"

Hydric soil present? Yes ___ No X

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 3/27/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: W3-T3-CS607A-1A

Investigator(s): JH, CG Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): concave Slope (%): 0 to 8%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.300071 Long.: -76.22198 Datum: NAD 83

Soil Map Unit Name: Lackawanna channery silt loam (LaC) 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? Yes	**Is the sampled area within a wetland?** Yes X No ____
Hydric soil present? Yes	
Wetland hydrology present? Yes	

Remarks: W3-T3-CS607A-1A is located within wetland W3-T3-CS607A that is in an exsiting pipeline ROW.

HYDROLOGY

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

- ____ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present? Yes ____ No X Depth (inches): ____

Water table present? Yes X No ____ Depth (inches): 5"

Saturation present? Yes X No ____ Depth (inches): 0"

(includes capillary fringe)

Wetland hydrology present? Yes X No ____

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: W3-T3-CS607A-1A

Tree Stratum (Plot Size:_____30'____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	=	Total Cover	

Sapling/Shrub Stratum (Plot Size:____15'____	Absolute % Cover	Dominant Species	Indicator Staus
1 *Microstegium vimineum*	50	Yes	FAC
2 *Scirpus atrovirens*	25	Yes	OBL
3 *Carex scoparia*	15	No	FACW
4 *Juncus tenuis*	10	No	FAC
5			
6			
7			
	100 =	Total Cover	

Herb Stratum (Plot Size:_____5'_____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
8			
	=	Total Cover	

Woody Vine Stratum (Plot Size:_____30'_____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
	=	Total Cover	

Dominance Test Worksheet

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

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

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

Prevalence Index Worksheet

Total % Cover of:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

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 - Morphogical 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: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** W3-T3-CS607A-1A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8"	10YR 4/2	80	7.5YR 4/6	20	C	M	Rocky 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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8"

Hydric soil present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 4/3/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: UP-W3T4-CS607A-1A

Investigator(s): DW, JH Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0-8%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.299844 Long.: -76.224813 Datum: NAD 83

Soil Map Unit Name: Lackawanna channery silt loam (LaB) 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?	No	**Is the sampled area within a wetland?**	Yes ____ No X
Hydric soil present?	No		
Wetland hydrology present?	No		

Remarks: UP-W3T4-CS607A-1A is located within an upland area just west of wetland W3-T4-CS607A in a hayfield.

HYDROLOGY

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

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present? Yes ____ No X Depth (inches): ____

Water table present? Yes ____ No X Depth (inches): ____

Saturation present? Yes ____ No X Depth (inches): ____

(includes capillary fringe)

Wetland hydrology present? Yes ____ No X

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: UP-W3T4-CS607A-1A

Tree Stratum (Plot Size:_____30'____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	= 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 *Sorghum bicolor*	40	Yes	UPL
2 *Trifolium repens*	30	Yes	FACU
3 *Dactylis glomerata*	30	Yes	FACU
4 Plantago lanceolata	15	No	UPL
5			
6			
7			
8			
	115 = Total Cover		

Woody Vine Stratum (Plot Size:_____30'_____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
	= 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: 3 (B)

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

Prevalence Index Worksheet

Total % Cover of:

OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species	60	x 4 =	240
UPL species	55	x 5 =	275
Column totals	115 (A)		515 (B)

Prevalence Index = B/A = 4.48

Hydrophytic Vegetation Indicators:

___ 1 - Rapid test for hydrophytic vegetation

___ 2 - Dominance test is >50%

___ 3 - Prevalence index is ≤3.0*

___ 4 - Morphogical 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: (Include photo numbers here or on a separate sheet) UP-W3T4-CS607A-1A was taken in a hayfield.

SOIL

Sampling Point: UP-W3T4-CS607A-1A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8"	7.5YR 4/3	100					gravelly silt loam	soils were compacted
8-14"	7.5YR 4/4						gravelly silt loam	soils were compacted

*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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: rock

Depth (inches): 14"

Hydric soil present? Yes ___ No X

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 3/26/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point UP1-CS607A-T1

Investigator(s): DW, CG Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): convex Slope (%): 3 to 8%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.298758 Long.: -76.221782 Datum: NAD 83

Soil Map Unit Name: Lackawana channery silt loam (LaB) 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?	No	**Is the sampled area within a wetland?**	Yes ____ No X
Hydric soil present?	No		
Wetland hydrology present?	No		

Remarks: UP1-CS607A-T1 is located wihtin an upland area of a hayfield.

HYDROLOGY

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

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present? Yes ____ No X Depth (inches): ____

Water table present? Yes ____ No X Depth (inches): ____

Saturation present? Yes ____ No X Depth (inches): ____

(includes capillary fringe)

Wetland hydrology present? Yes ____ No X

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: UP1-CS607A-T1

Tree Stratum (Plot Size:_____30'____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	=	Total Cover	

Sapling/Shrub Stratum (Plot Size:____15'____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	=	Total Cover	

Herb Stratum (Plot Size:_____5'_____)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Dactylis glmoerata*	50	Yes	FACU
2 *Phleum pratense*	50	Yes	FACU
3			
4			
5			
6			
7			
8			
	100 =	Total Cover	

Woody Vine Stratum (Plot Size:_____30'_____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
	=	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: 2 (B)

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

Prevalence Index Worksheet

Total % Cover of:

OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species	100	x 4 =	400
UPL species		x 5 =	
Column totals	100 (A)		400 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid test for hydrophytic vegetation

___ 2 - Dominance test is >50%

___ 3 - Prevalence index is ≤3.0*

___ 4 - Morphogical 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: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** UP1-CS607A-T1

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12"	10YR 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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand 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 - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 3/26/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point UP2-CS607A-T1

Investigator(s): DW, CG Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): convex Slope (%): 3 to 8%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.299069 Long.: -76.221266 Datum: NAD 83

Soil Map Unit Name: Lackawanna channery silt loam (LaB) 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?	No	**Is the sampled area within a wetland?**	Yes ____ No X
Hydric soil present?	No		
Wetland hydrology present?	No		

Remarks: UP2-CS607A-T1 is located within an upland area of a hayfield

HYDROLOGY

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

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present? Yes ____ No X Depth (inches): ____

Water table present? Yes ____ No X Depth (inches): ____

Saturation present? Yes ____ No X Depth (inches): ____

(includes capillary fringe)

Wetland hydrology present? Yes ____ No X

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: UP2-CS607A-T1

Tree Stratum (Plot Size:_____30'____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	=	Total Cover	

Sapling/Shrub Stratum (Plot Size:____15'____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	=	Total Cover	

Herb Stratum (Plot Size:_____5'_____)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Phleum pratense*	50	Yes	FACU
2 *Dactylis glomerata*	30	Yes	FACU
3 *Schizachyrium scoparium*	10	Yes	FACU
4			
5			
6			
7			
8			
	90* =	Total Cover	

Woody Vine Stratum (Plot Size:_____30'_____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
	=	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: 2 (B)

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

Prevalence Index Worksheet

Total % Cover of:

OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species	90	x 4 =	360
UPL species		x 5 =	
Column totals	90 (A)		360 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid test for hydrophytic vegetation

___ 2 - Dominance test is >50%

___ 3 - Prevalence index is ≤3.0*

___ 4 - Morphogical 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: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** UP2-CS607A-T1

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-8"	10YR 4/4	100					Silt loam	
8-14"	10YR 4/6	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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand 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 - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 3/26/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point UP3-CS607A-T1

Investigator(s): DW, CG Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): none Slope (%): 0-8

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.299468 Long.: -76.220755 Datum: NAD 83

Soil Map Unit Name: Lackawanna channery silt loam (LaB) 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? No	**Is the sampled area within a wetland?** Yes ____ No X
Hydric soil present? No	
Wetland hydrology present? No	

Remarks: UP3-CS607A-T1 is located in an upland area

HYDROLOGY

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

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present? Yes ____ No X Depth (inches): ____

Water table present? Yes ____ No X Depth (inches): ____

Saturation present? Yes ____ No X Depth (inches): ____

(includes capillary fringe)

Wetland hydrology present? Yes ____ No X

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: UP3-CS607A-T1

Tree Stratum (Plot Size:_____30'____)		Absolute % Cover	Dominant Species	Indicator Staus
1	*Pinus strobus*	75	Yes	FACU
2	*Tsuga canadensis*	25	Yes	FACU
3	*Acer rubrum*	10	No	FAC
4				
5				
6				
7				
		110 =	Total Cover	

Sapling/Shrub Stratum (Plot Size:____15'____		Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
5				
6				
7				
		=	Total Cover	

Herb Stratum (Plot Size:_____5'_____)		Absolute % Cover	Dominant Species	Indicator Staus
1	*Lycopodium obscurum*	40	Yes	UPL
2				
3				
4				
5				
6				
7				
8				
		40 =	Total Cover	

Woody Vine Stratum (Plot Size:_____30'_____		Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
		=	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: 3 (B)

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

Prevalence Index Worksheet

Total % Cover of:

OBL species		x 1 =	
FACW species		x 2 =	
FAC species	10	x 3 =	30
FACU species	100	x 4 =	400
UPL species	40	x 5 =	200
Column totals	150 (A)		630 (B)

Prevalence Index = B/A = 4.20

Hydrophytic Vegetation Indicators:

___ 1 - Rapid test for hydrophytic vegetation

___ 2 - Dominance test is >50%

___ 3 - Prevalence index is ≤3.0*

___ 4 - Morphogical 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: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** UP3-CS607A-T1

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12"	10YR 4/4	100						

*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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand 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 - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 3/26/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point UP4-CS607A-T1

Investigator(s): DW, CG Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): none Slope (%): 3 to 8%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.299928 Long.: -76.221528 Datum: NAD 83

Soil Map Unit Name: Lackawanna channery silt loam (LaB) 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?	No	**Is the sampled area within a wetland?**	Yes ____ No X
Hydric soil present?	No		
Wetland hydrology present?	No		

Remarks: UP4-CS607A-T1 is located within an upland forest situated between a field and an exsiting pipeline ROW.

HYDROLOGY

Primary Indicators (minimum of one is required; check all that apply)		Secondary Indicators (minimum of two required)
____ Surface Water (A1)	____ Water-Stained Leaves (B9)	____ Surface Soil Cracks (B6)
____ High Water Table (A2)	____ Aquatic Fauna (B13)	____ Drainage Patterns (B10)
____ Saturation (A3)	____ Marl Deposits (B15)	____ Moss Trim Lines (B16)
____ Water Marks (B1)	____ Hydrogen Sulfide Odor (C1)	____ Dry-Season Water Table (C2)
____ Sediment Deposits (B2)	____ Oxidized Rhizospheres on Living Roots (C3)	____ Crayfish Burrows (C8)
____ Drift Deposits (B3)	____ Presence of Reduced Iron (C4)	____ Saturation Visible on Aerial Imagery (C9)
____ Algal Mat or Crust (B4)	____ Recent Iron Reduction in Tilled Soils (C6)	____ Stunted or Stressed Plants (D1)
____ Iron Deposits (B5)	____ Thin Muck Surface (C7)	____ Geomorphic Position (D2)
____ Inundation Visible on Aerial Imagery (B7)	____ Other (Explain in Remarks)	____ Shallow Aquitard (D3)
____ Sparsely Vegetated Concave Surface (B8)		____ FAC-Neutral Test (D5)
		____ Microtopographic Relief (D4)

Field Observations:			
Surface water present?	Yes ____ No X	Depth (inches): ____	
Water table present?	Yes ____ No X	Depth (inches): ____	**Wetland hydrology present?** Yes ____ No X
Saturation present? (includes capillary fringe)	Yes ____ No X	Depth (inches): ____	

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: UP4-CS607A-T1

Tree Stratum (Plot Size:_____30'____)		Absolute % Cover	Dominant Species	Indicator Staus
1	*Acer rubrum*	30	Yes	FAC
2	*Pinus strobus*	20	Yes	FACU
3	*Fraxinus americana*	20	Yes	FACU
4	*Populus grandidentata*	10	No	FACU
5				
6				
7				
		80 =	Total Cover	

Sapling/Shrub Stratum (Plot Size:____15'____		Absolute % Cover	Dominant Species	Indicator Staus
1	*Tsuga canadensis*	5	Yes	FACU
2	*Vaccinium corymbosum*	5	Yes	FACW
3				
4				
5				
6				
7				
		10 =	Total Cover	

Herb Stratum (Plot Size:_____5'_____)		Absolute % Cover	Dominant Species	Indicator Staus
1	*Vaccinium angustifolium*	20	Yes	FACU
2	*Lycopodium clavatum*	15	Yes	FAC
3	*Lycopodium dendroideum*	15	Yes	FACU
4	*Mitchella repens*	15	Yes	FACU
5	*Poacaea sp.*	10	-	-
6				
7				
8				
		75 =	Total Cover	

Woody Vine Stratum (Plot Size:_____30'_____		Absolute % Cover	Dominant Species	Indicator Staus
1				
2				
3				
4				
		=	Total Cover	

Dominance Test Worksheet

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

Total Number of Dominant Species Across all Strata: 9 (B)

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

Prevalence Index Worksheet

Total % Cover of:

OBL species		x 1 =	
FACW species	5	x 2 =	10
FAC species	45	x 3 =	135
FACU species	105	x 4 =	420
UPL species	0	x 5 =	0
Column totals	155 (A)		565 (B)

Prevalence Index = B/A = 3.65

Hydrophytic Vegetation Indicators:

___ 1 - Rapid test for hydrophytic vegetation

___ 2 - Dominance test is >50%

___ 3 - Prevalence index is ≤3.0*

___ 4 - Morphogical 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: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** UP4-CS607A-T1

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-10"	10YR 4/4	100					gravelly 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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 10"

Hydric soil present? Yes X No ___

Remarks:

WETLAND DETERMINATION DATA FORM - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 3/26/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point UP5-CS607A-T1

Investigator(s): DW, CG Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hilltop Local relief (concave, convex, none): convex Slope (%): 0-8

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.299561 Long.: -76.222624 Datum: NAD 83

Soil Map Unit Name: Lackawanna channery silt loam (LaB) 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?	No	**Is the sampled area within a wetland?**	Yes ____ No X
Hydric soil present?	No		
Wetland hydrology present?	No		

Remarks: UP5-CS607A-T1 is located within an upland area of a hayfield.

HYDROLOGY

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

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- ____ Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- ____ Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present? Yes ____ No X Depth (inches): ____

Water table present? Yes ____ No X Depth (inches): ____

Saturation present? Yes ____ No X Depth (inches): ____

(includes capillary fringe)

Wetland hydrology present? Yes ____ No X

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: UP5-CS607A-T1

Tree Stratum (Plot Size:_____30'____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	=	Total Cover	

Sapling/Shrub Stratum (Plot Size:____15'____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	=	Total Cover	

Herb Stratum (Plot Size:_____5'_____)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Phleum pratense*	50	Yes	FACU
2 *Dactylis glomerata*	40	Yes	FACU
3 *Schizachyrium scoparium*	10	No	FACU
4			
5			
6			
7			
8			
	100 =	Total Cover	

Woody Vine Stratum (Plot Size:_____30'_____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
	=	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: 3 (B)

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

Prevalence Index Worksheet

Total % Cover of:

OBL species		x 1 =	
FACW species		x 2 =	
FAC species		x 3 =	
FACU species	100	x 4 =	400
UPL species		x 5 =	
Column totals	100 (A)		400 (B)

Prevalence Index = B/A = 4.00

Hydrophytic Vegetation Indicators:

___ 1 - Rapid test for hydrophytic vegetation

___ 2 - Dominance test is >50%

___ 3 - Prevalence index is ≤3.0*

___ 4 - Morphogical 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: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** UP5-CS607A-T1

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-12"	10YR 3/3	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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

*Indicators of hydrophytic vegetation and weltand 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 - Northcentral and Northeast Region

Project/Site: Compressor Station 607-A City/County: Luzerne County Sampling Date: 4/3/19

Applicant/Owner: Transcontinental Gas Pipe Line Company, LLC State: PA Sampling Point: W3-T4-CS607A-1A

Investigator(s): DW, JH Section, Township, Range: Fairmont Township

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): none Slope (%): 0 to 8%

Subregion (LRR or MLRA): MLRA 140 Lat.: 41.300111 Long.: -76.224509 Datum: NAD 83

Soil Map Unit Name: Lackawanna channery silt loam (LaB) 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? Yes	**Is the sampled area within a wetland?** Yes X No ____
Hydric soil present? Yes	
Wetland hydrology present? Yes	

Remarks: W3-T4-CS607A-1A is located within a PEM wetland situated in a field along an existing road.

HYDROLOGY

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

- ____ Surface Water (A1)
- ____ High Water Table (A2)
- X Saturation (A3)
- ____ Water Marks (B1)
- ____ Sediment Deposits (B2)
- ____ Drift Deposits (B3)
- ____ Algal Mat or Crust (B4)
- ____ Iron Deposits (B5)
- ____ Inundation Visible on Aerial Imagery (B7)
- ____ Sparsely Vegetated Concave Surface (B8)
- ____ Water-Stained Leaves (B9)
- ____ Aquatic Fauna (B13)
- ____ Marl Deposits (B15)
- ____ Hydrogen Sulfide Odor (C1)
- X Oxidized Rhizospheres on Living Roots (C3)
- ____ Presence of Reduced Iron (C4)
- ____ Recent Iron Reduction in Tilled Soils (C6)
- ____ Thin Muck Surface (C7)
- ____ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

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

Field Observations:

Surface water present? Yes ____ No X Depth (inches): ____

Water table present? Yes ____ No X Depth (inches): ____

Saturation present? Yes X No ____ Depth (inches): surface

(includes capillary fringe)

Wetland hydrology present? Yes X No ____

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

Remarks:

VEGETATION - Use scientific names of plants

Sampling Point: W3-T4-CS607A-1A

Tree Stratum (Plot Size:_____30'____)	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	=	Total Cover	

Sapling/Shrub Stratum (Plot Size:____15'____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
5			
6			
7			
	=	Total Cover	

Herb Stratum (Plot Size:_____5'_____)	Absolute % Cover	Dominant Species	Indicator Staus
1 *Juncus effusus*	40	Yes	OBL
2 *Scirpus cyperinus*	25	Yes	FACW
3 *Theylypteris sp.*	20	No	FACW
4 *Poacaea sp.*	20	No	-
5			
6			
7			
8			
	105 =	Total Cover	

Woody Vine Stratum (Plot Size:_____30'_____	Absolute % Cover	Dominant Species	Indicator Staus
1			
2			
3			
4			
	=	Total Cover	

Dominance Test Worksheet

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

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

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

Prevalence Index Worksheet

Total % Cover of:

OBL species ____ x 1 = ____

FACW species ____ x 2 = ____

FAC species ____ x 3 = ____

FACU species ____ x 4 = ____

UPL species ____ x 5 = ____

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 - Morphogical 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: (Include photo numbers here or on a separate sheet)

SOIL **Sampling Point:** W3-T4-CS607A-1A

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

Depth (Inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type*	Loc**	Texture	Remarks
0-14"	7.5YR 4/2	85	7.5YR 5/6	15	C	M, PL	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)
- ___ Depleted Below Dark Suface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Dark Surface (S7) (**LRR R, MLRA 149B**)
- ___ Polyvalue Below Surface (S8) (**LRR R, MLRA 149B**)
- ___ Thin Dark Surface (S9) (**LRR R, MLRA 149B**
- ___ Loamy Mucky Mineral (F1) (**LRR K, L**)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)

Indicators for Problematic Hydric Soils:

- ___ 2 cm Muck (A10) (**LRR K, L, MLRA 149B**
- ___ Coast Prairie Redox (A16) (**LRR K, L, R**)
- ___ 5 cm Mucky Peat or Peat (S3) (**LRR K, L, R**)
- ___ Dark Surface (S7) (**LRR K, L**
- ___ Polyvalue Below Surface (S8) (**LRR K, L**)
- ___ Thin Dark Surface (S9) (**LRR K, L**)
- ___ Iron-Manganese Masses (F12) (**LRR K, L, R**)
- ___ Piedmont Floodplain Soils (F19) (**MLRA 149B**)
- ___ Mesic Spodic (TA6) (**MLRA 144A, 145, 149B**)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric soil present? Yes X No ___

Remarks:

STREAM ID: S1-T2-CS607a

STREAM DATA

☐ ROW ☑ Project Facility **STATE** PA
☐ Access Road ☐ Staging/Storage Area

County: Luzerne

Stream Name: ☑ UNNAMED ☐ NAMED:

Date: 3/27/19

Stream Type: ☑ STREAM ☐ DITCH/CANAL

Map No. :

Observers: DW/ CC

CHARACTERISTICS

Water Present: ☑ yes ☐ no

Flow Type: ☐ Perennial ☑ Intermittent ☐ Ephemeral

Stream Flow Direction: East

Width (ft) (water's edge to water's edge): 1-2'

Width (ft) (bank to bank): 1-2'
(above OHWM; use OHWM Criteria below)

CHARACTERISTICS

Substrate Type
- ☐ Bedrock
- ☑ Gravel
- ☑ Sand
- ☐ Silt
- ☐ Cobbles
- ☐ Clay
- ☐ Concrete
- ☑ Other Muck

Probed Stream Depth
- ☐ N/A
- ☑ 0 – 6"
- ☐ 7 – 12"
- ☐ 13 – 24"
- ☐ 25 – 36"
- ☐ 37"+

Water Clarity
- ☐ Clear
- ☐ Discolored
- ☐ Oily Film
- ☐ Other

BANK HEIGHT AND SLOPE

Left Bank*	Right Bank*
Height (ft): 1	Height (ft): 1
Slope: ☐ 0-30º (4:1)	Slope: ☐ 0-30º (4:1)
☐ 31-45º (3:1)	☐ 31-45º (3:1)
☐ 46-60º (2:1)	☐ 46-60º (2:1)
☑ 61-90º (1:1)	☑ 61-90º (1:1)

Height (ft) (OHWM from stream bed):
*Direction when facing downstream

Evidence of Erosion: ☑ yes ☐ no

☐ Sloughing ☐ Undercutting ☐ Impact from Cattle

☑ Other: impacted from a horse

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

ASSOCIATED HABITAT

Riparian Vegetation
☑ yes, list ID: HB-
☐ no
If yes, list:
red maple, eastern hemlock, red oak, white oak

Width of riparian corridor (ft): 0-150 ft

Stream Fringe (5' or less including both banks and does not meet wetland criteria)
☐ yes, width (ft):
☑ no
If yes, list :

Aquatic Vegetation
☐ yes
☑ no
If yes, list:

ASSOCIATED SPECIES

Aquatic Organisms
☐ yes
☑ no
If yes, list:

Riparian/Terrestrial Organisms
☐ yes
☑ no
If yes, list:

Stream has potential for fish presence
☐ yes
☑ no

T&E Species
☐ yes, list ID: WL/VG-
☑ no

OHWM Criteria – Ordinary High Water Mark

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

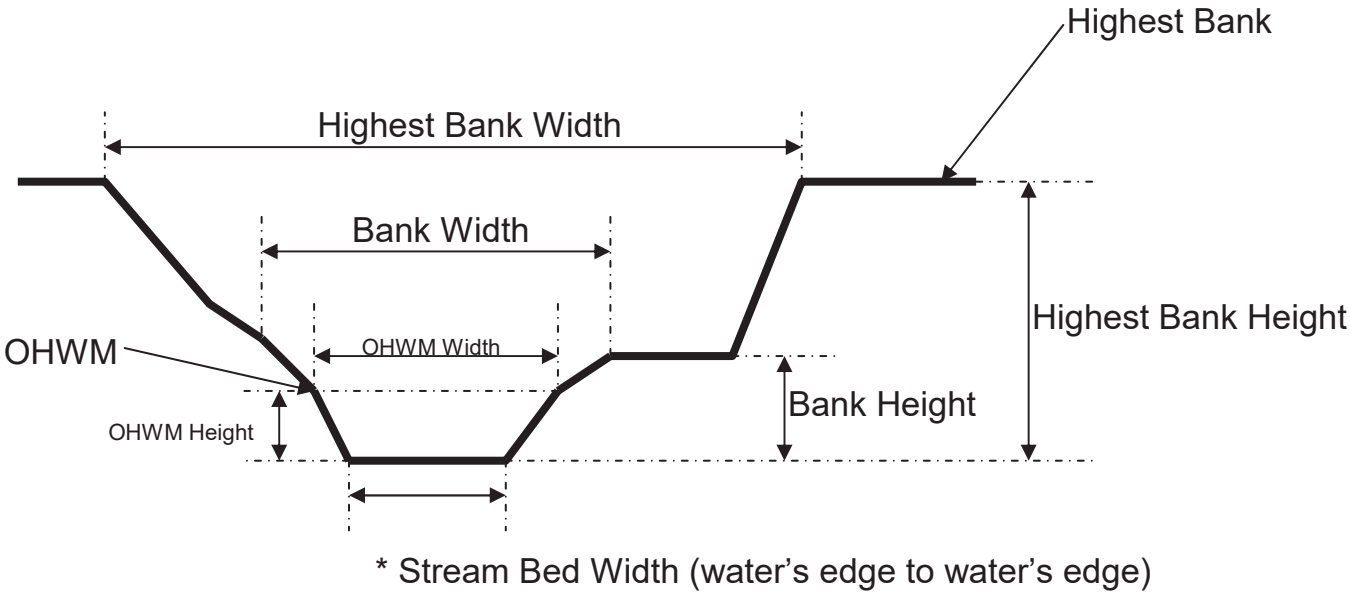
Discontinuous OHWM: ☐ yes ☑ no

Geometry: ☑ Meandering ☐ Relatively Straight

Presence of: ☑ run ☑ pools ☑ riffles
Explain:

Is the stream/tributary:
☑ natural
☐ manmade – Explain:
☐ man-altered – Explain:

NOTES:
Culvert present on portion of stream
This channel begins in the forested portion of W2-T2 and flows throughout the wetland. It is hydrologically connected to S1-T3, S2-T3, S3-T3, S5-T2, and S3-T2.



*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.

STREAM ID: SS S1-T3-CS607a

STREAM DATA

☐ ROW ☑ Project Facility **STATE** PA
☐ Access Road ☐ Staging/Storage Area

County: Luzerne

Stream Name: ☑ UNNAMED ☐ NAMED:

Date: 3/27/2019

Stream Type: ☑ STREAM ☐ DITCH/CANAL

Map No. :

Observers: CG, JH

CHARACTERISTICS

Water Present: ☑ yes ☐ no

Flow Type: ☐ Perennial ☑ Intermittent ☐ Ephemeral

Stream Flow Direction: East

Width (ft) (water's edge to water's edge): 2'

Width (ft) (bank to bank): 3'
(above OHWM; use OHWM Criteria below)

CHARACTERISTICS

Substrate Type
- ☐ Bedrock
- ☑ Gravel
- ☑ Sand
- ☐ Silt
- ☑ Cobbles
- ☐ Clay
- ☐ Concrete
- ☐ Other

Probed Stream Depth
- ☐ N/A
- ☑ 0 – 6"
- ☐ 7 – 12"
- ☐ 13 – 24"
- ☐ 25 – 36"
- ☐ 37"+

Water Clarity
- ☑ Clear
- ☐ Discolored
- ☐ Oily Film
- ☐ Other

BANK HEIGHT AND SLOPE

Left Bank*	Right Bank*
Height (ft): 1'	Height (ft): 1'
Slope: ☐ 0-30º (4:1)	Slope: ☐ 0-30º (4:1)
☑ 31-45º (3:1)	☑ 31-45º (3:1)
☐ 46-60º (2:1)	☐ 46-60º (2:1)
☐ 61-90º (1:1)	☐ 61-90º (1:1)

Height (ft) (OHWM from stream bed):
*Direction when facing downstream

Evidence of Erosion: ☐ yes ☑ no

☐ Sloughing ☐ Undercutting ☐ Impact from Cattle

☐ 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

ASSOCIATED HABITAT

Riparian Vegetation
☑ yes, list ID: HB-
☐ no
If yes, list:
Multiflora rose, Silky Dogwood, Rubus sp., Green Ash, Red Maple

Width of riparian corridor (ft):

Stream Fringe (5' or less including both banks and does not meet wetland criteria)
☐ yes, width (ft):
☑ no
If yes, list :

Aquatic Vegetation
☐ yes
☑ no
If yes, list:

ASSOCIATED SPECIES

Aquatic Organisms
☐ yes
☑ no
If yes, list:

Riparian/Terrestrial Organisms
☐ yes
☑ no
If yes, list:

Stream has potential for fish presence
☐ yes
☑ no

T&E Species
☐ yes, list ID: WL/VG-
☑ no

OHWM Criteria – Ordinary High Water Mark

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

Discontinuous OHWM: ☐ yes ☑ no

Geometry: ☐ Meandering ☑ Relatively Straight

Presence of: ☐ run ☑ pools ☑ riffles
Explain:

Is the stream/tributary:
☑ natural
☐ manmade – Explain:
☐ man-altered – Explain:

NOTES:

STREAM ID: S2-T2-CS607a

STREAM DATA

☐ ROW ☑ Project Facility **STATE** PA
☐ Access Road ☐ Staging/Storage Area

County: Luzerne

Stream Name: ☑ UNNAMED ☐ NAMED:

Date: 3/27/19

Stream Type: ☑ STREAM ☐ DITCH/CANAL

Map No. :

Observers: DW, CC

CHARACTERISTICS

Water Present: ☐ yes ☑ no

Flow Type: ☐ Perennial ☐ Intermittent ☑ Ephemeral

Stream Flow Direction: East

Width (ft) (water's edge to water's edge): 1-2'

Width (ft) (bank to bank): 1-2'
(above OHWM; use OHWM Criteria below)

CHARACTERISTICS

Substrate Type
- ☐ Bedrock
- ☐ Gravel
- ☐ Sand
- ☐ Silt
- ☑ Cobbles
- ☑ Clay
- ☐ Concrete
- ☑ Other leaf matter

Probed Stream Depth
- ☑ N/A
- ☐ 0 – 6"
- ☐ 7 – 12"
- ☐ 13 – 24"
- ☐ 25 – 36"
- ☐ 37"+

Water Clarity
- ☐ Clear
- ☐ Discolored
- ☐ Oily Film
- ☐ Other

BANK HEIGHT AND SLOPE

Left Bank*	Right Bank*
Height (ft):	Height (ft):
Slope: ☐ 0-30º (4:1)	Slope: ☐ 0-30º (4:1)
☐ 31-45º (3:1)	☐ 31-45º (3:1)
☐ 46-60º (2:1)	☐ 46-60º (2:1)
☑ 61-90º (1:1)	☑ 61-90º (1:1)

Height (ft) (OHWM from stream bed):
*Direction when facing downstream

Evidence of Erosion: ☐ yes ☐ no

☐ Sloughing ☐ Undercutting ☐ Impact from Cattle

☐ 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

ASSOCIATED HABITAT

Riparian Vegetation
☑ yes, list ID: HB-
☐ no
If yes, list:
white oak, red oak, red maple, green ash, silky dogwood, multiflora rose, barberry

Width of riparian corridor (ft):

Stream Fringe (5' or less including both banks and does not meet wetland criteria)
☐ yes, width (ft):
☑ no
If yes, list :

Aquatic Vegetation
☐ yes
☑ no
If yes, list:

ASSOCIATED SPECIES

Aquatic Organisms
☐ yes
☑ no
If yes, list:

Riparian/Terrestrial Organisms
☐ yes
☑ no
If yes, list:

Stream has potential for fish presence
☐ yes
☑ no

T&E Species
☐ yes, list ID: WL/VG-
☑ no

OHWM Criteria – Ordinary High Water Mark

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

Discontinuous OHWM: ☐ yes ☐ no

Geometry: ☐ Meandering ☑ Relatively Straight

Presence of: ☐ run ☐ pools ☐ riffles
Explain:

Is the stream/tributary:
☐ natural
☐ manmade – Explain:
☐ man-altered – Explain:

NOTES:
Is hydrologically connected to wetland W2-T2-607A.

STREAM ID: SS S2-T3-CS607a

STREAM DATA

☐ ROW ☑ Project Facility **STATE** PA
☐ Access Road ☐ Staging/Storage Area

County: Luzerne

Stream Name: ☑ UNNAMED ☐ NAMED:

Date: 3/27/2019

Stream Type: ☑ STREAM ☐ DITCH/CANAL

Map No. :

Observers: CG, JH

CHARACTERISTICS

Water Present: ☑ yes ☐ no

Flow Type: ☐ Perennial ☑ Intermittent ☐ Ephemeral

Stream Flow Direction: East

Width (ft) (water's edge to water's edge): 1'

Width (ft) (bank to bank): 3'
(above OHWM; use OHWM Criteria below)

CHARACTERISTICS

Substrate Type
- ☐ Bedrock
- ☐ Gravel
- ☑ Sand
- ☑ Silt
- ☑ Cobbles
- ☐ Clay
- ☐ Concrete
- ☐ Other

Probed Stream Depth
- ☐ N/A
- ☑ 0 – 6"
- ☐ 7 – 12"
- ☐ 13 – 24"
- ☐ 25 – 36"
- ☐ 37"+

Water Clarity
- ☑ Clear
- ☐ Discolored
- ☐ Oily Film
- ☐ Other

BANK HEIGHT AND SLOPE

Left Bank*
Height (ft): 1'

Slope:
- ☐ 0-30º (4:1)
- ☑ 31-45º (3:1)
- ☐ 46-60º (2:1)
- ☐ 61-90º (1:1)

Right Bank*
Height (ft): 1'

Slope:
- ☐ 0-30º (4:1)
- ☑ 31-45º (3:1)
- ☐ 46-60º (2:1)
- ☐ 61-90º (1:1)

Height (ft) (OHWM from stream bed):
*Direction when facing downstream

Evidence of Erosion: ☐ yes ☑ no

☐ Sloughing ☐ Undercutting ☐ Impact from Cattle

☐ 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

ASSOCIATED HABITAT

Riparian Vegetation
☑ yes, list ID: HB-
☐ no
If yes, list:
Multiflora rose, Rubus sp., Green Ash, Red Maple

Width of riparian corridor (ft):

Stream Fringe (5' or less including both banks and does not meet wetland criteria)
☐ yes, width (ft):
☑ no
If yes, list :

Aquatic Vegetation
☐ yes
☑ no
If yes, list:

ASSOCIATED SPECIES

Aquatic Organisms
☐ yes
☑ no
If yes, list:

Riparian/Terrestrial Organisms
☐ yes
☑ no
If yes, list:

Stream has potential for fish presence
☐ yes
☑ no

T&E Species
☐ yes, list ID: WL/VG-
☑ no

OHWM Criteria – Ordinary High Water Mark

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

Discontinuous OHWM: ☐ yes ☑ no

Geometry: ☐ Meandering ☑ Relatively Straight

Presence of: ☑ run ☐ pools ☑ riffles
Explain:

Is the stream/tributary:
☑ natural
☐ manmade – Explain:
☐ man-altered – Explain:

NOTES:

STREAM ID: S3-T2-CS607a

STREAM DATA

☐ ROW ☑ Project Facility **STATE** PA
☐ Access Road ☐ Staging/Storage Area

County: Luzerne

Stream Name: ☑ UNNAMED ☐ NAMED:

Date: 3/27/19

Stream Type: ☑ STREAM ☐ DITCH/CANAL

Map No. :

Observers: DW, CC

CHARACTERISTICS

Water Present: ☑ yes ☐ no

Flow Type: ☐ Perennial ☑ Intermittent ☐ Ephemeral

Stream Flow Direction: East

Width (ft) (water's edge to water's edge): 2

Width (ft) (bank to bank): 2
(above OHWM; use OHWM Criteria below)

CHARACTERISTICS

Substrate Type
- ☐ Bedrock
- ☑ Gravel
- ☑ Sand
- ☐ Silt
- ☑ Cobbles
- ☐ Clay
- ☐ Concrete
- ☑ Other muck and boulders

Probed Stream Depth
- ☐ N/A
- ☑ 0 – 6"
- ☐ 7 – 12"
- ☐ 13 – 24"
- ☐ 25 – 36"
- ☐ 37"+

Water Clarity
- ☐ Clear
- ☐ Discolored
- ☐ Oily Film
- ☐ Other

BANK HEIGHT AND SLOPE

Left Bank*	Right Bank*
Height (ft): 1	Height (ft): 1
Slope: ☐ 0-30º (4:1)	Slope: ☐ 0-30º (4:1)
☐ 31-45º (3:1)	☐ 31-45º (3:1)
☐ 46-60º (2:1)	☐ 46-60º (2:1)
☑ 61-90º (1:1)	☑ 61-90º (1:1)

Height (ft) (OHWM from stream bed):
*Direction when facing downstream

Evidence of Erosion: ☐ yes ☑ no

☐ Sloughing ☐ Undercutting ☐ Impact from Cattle

☐ 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

ASSOCIATED HABITAT

Riparian Vegetation
☑ yes, list ID: HB-
☐ no
If yes, list:

Width of riparian corridor (ft):

Stream Fringe (5' or less including both banks and does not meet wetland criteria)
☐ yes, width (ft):
☑ no
If yes, list :

Aquatic Vegetation
☐ yes
☑ no
If yes, list:

ASSOCIATED SPECIES

Aquatic Organisms
☐ yes
☑ no
If yes, list:

Riparian/Terrestrial Organisms
☐ yes
☑ no
If yes, list:

Stream has potential for fish presence
☐ yes
☑ no

T&E Species
☐ yes, list ID: WL/VG-
☑ no

OHWM Criteria – Ordinary High Water Mark

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

Discontinuous OHWM: ☐ yes ☐ no

Geometry: ☐ Meandering ☑ Relatively Straight

Presence of: ☑ run ☑ pools ☑ riffles
Explain:

Is the stream/tributary:
☑ natural
☐ manmade – Explain:
☐ man-altered – Explain:

NOTES:
Channel has some small braids. Is hydrologically connected to wetland W2-T2-607A.

STREAM ID: SS S3-T3-CS607a

STREAM DATA

☐ ROW ☑ Project Facility **STATE** PA
☐ Access Road ☐ Staging/Storage Area

County: Luzerne

Stream Name: ☑ UNNAMED ☐ NAMED:

Date: 3/27/2019

Stream Type: ☑ STREAM ☐ DITCH/CANAL

Map No. :

Observers: CG, JH

CHARACTERISTICS

Water Present: ☑ yes ☐ no

Flow Type: ☐ Perennial ☑ Intermittent ☐ Ephemeral

Stream Flow Direction: East

Width (ft) (water's edge to water's edge): 1'

Width (ft) (bank to bank): 3'
(above OHWM; use OHWM Criteria below)

CHARACTERISTICS

Substrate Type
- ☐ Bedrock
- ☐ Gravel
- ☑ Sand
- ☑ Silt
- ☑ Cobbles
- ☐ Clay
- ☐ Concrete
- ☐ Other

Probed Stream Depth
- ☐ N/A
- ☑ 0 – 6"
- ☐ 7 – 12"
- ☐ 13 – 24"
- ☐ 25 – 36"
- ☐ 37"+

Water Clarity
- ☑ Clear
- ☐ Discolored
- ☐ Oily Film
- ☐ Other

BANK HEIGHT AND SLOPE

Left Bank*
Height (ft): 1'

Slope:
- ☐ 0-30º (4:1)
- ☑ 31-45º (3:1)
- ☐ 46-60º (2:1)
- ☐ 61-90º (1:1)

Right Bank*
Height (ft): 1'

Slope:
- ☐ 0-30º (4:1)
- ☑ 31-45º (3:1)
- ☐ 46-60º (2:1)
- ☐ 61-90º (1:1)

Height (ft) (OHWM from stream bed):
*Direction when facing downstream

Evidence of Erosion: ☐ yes ☑ no

☐ Sloughing ☐ Undercutting ☐ Impact from Cattle

☐ 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

ASSOCIATED HABITAT

Riparian Vegetation
☑ yes, list ID: HB-
☐ no
If yes, list:
Multiflora rose, Rubus sp., Ironwood, Green Ash, Moss

Width of riparian corridor (ft):

Stream Fringe (5' or less including both banks and does not meet wetland criteria)
☐ yes, width (ft):
☑ no
If yes, list :

Aquatic Vegetation
☐ yes
☑ no
If yes, list:

ASSOCIATED SPECIES

Aquatic Organisms
☐ yes
☑ no
If yes, list:

Riparian/Terrestrial Organisms
☐ yes
☑ no
If yes, list:

Stream has potential for fish presence
☐ yes
☑ no

T&E Species
☐ yes, list ID: WL/VG-
☑ no

OHWM Criteria – Ordinary High Water Mark

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

Discontinuous OHWM: ☐ yes ☑ no

Geometry: ☐ Meandering ☑ Relatively Straight

Presence of: ☑ run ☐ pools ☑ riffles
Explain:

Is the stream/tributary:
☑ natural
☐ manmade – Explain:
☐ man-altered – Explain:

NOTES:

STREAM ID: S4-T2-CS607a

STREAM DATA

☐ ROW ☑ Project Facility **STATE** PA
☐ Access Road ☐ Staging/Storage Area

County: Luzerne

Stream Name: ☑ UNNAMED ☐ NAMED:

Date: 3/27/19

Stream Type: ☑ STREAM ☐ DITCH/CANAL

Map No. :

Observers: DW, CC

CHARACTERISTICS

Water Present: ☑ yes ☐ no

Flow Type: ☐ Perennial ☑ Intermittent ☐ Ephemeral

Stream Flow Direction: East

Width (ft) (water's edge to water's edge): 2

Width (ft) (bank to bank): 2
(above OHWM; use OHWM Criteria below)

CHARACTERISTICS

Substrate Type
- ☐ Bedrock
- ☑ Gravel
- ☑ Sand
- ☐ Silt
- ☑ Cobbles
- ☐ Clay
- ☐ Concrete
- ☑ Other muck and boulders

Probed Stream Depth
- ☐ N/A
- ☑ 0 – 6"
- ☐ 7 – 12"
- ☐ 13 – 24"
- ☐ 25 – 36"
- ☐ 37"+

Water Clarity
- ☐ Clear
- ☐ Discolored
- ☐ Oily Film
- ☐ Other

BANK HEIGHT AND SLOPE

Left Bank*	Right Bank*
Height (ft): 1	Height (ft): 1
Slope: ☐ 0-30º (4:1)	Slope: ☐ 0-30º (4:1)
☐ 31-45º (3:1)	☐ 31-45º (3:1)
☐ 46-60º (2:1)	☐ 46-60º (2:1)
☑ 61-90º (1:1)	☑ 61-90º (1:1)

Height (ft) (OHWM from stream bed):
*Direction when facing downstream

Evidence of Erosion: ☐ yes ☐ no

☐ Sloughing ☐ Undercutting ☐ Impact from Cattle

☐ 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

ASSOCIATED HABITAT

Riparian Vegetation
☑ yes, list ID: HB-
☐ no
If yes, list:

Width of riparian corridor (ft):

Stream Fringe (5' or less including both banks and does not meet wetland criteria)
☐ yes, width (ft):
☑ no
If yes, list :
white oak, red oak, red maple, green ash, silky dogwood, multiflora rose, barberry

Aquatic Vegetation
☐ yes
☑ no
If yes, list:

ASSOCIATED SPECIES

Aquatic Organisms
☐ yes
☑ no
If yes, list:

Riparian/Terrestrial Organisms
☐ yes
☑ no
If yes, list:

Stream has potential for fish presence
☐ yes
☑ no

T&E Species
☐ yes, list ID: WL/VG-
☑ no

OHWM Criteria – Ordinary High Water Mark

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

Discontinuous OHWM: ☐ yes ☑ no

Geometry: ☐ Meandering ☑ Relatively Straight

Presence of: ☑ run ☑ pools ☑ riffles
Explain:

Is the stream/tributary:
☑ natural
☐ manmade – Explain:
☐ man-altered – Explain:

NOTES:
Channel has some small braids. Is hydrologically connected to wetland W2-T2-607A.

STREAM ID: S5-T2-CS607a

STREAM DATA

☐ ROW ☑ Project Facility **STATE** PA
☐ Access Road ☐ Staging/Storage Area

County: Luzerne

Stream Name: ☑ UNNAMED ☐ NAMED:

Date: 3/27/19

Stream Type: ☑ STREAM ☐ DITCH/CANAL

Map No. :

Observers: DW/CC

CHARACTERISTICS

Water Present: ☑ yes ☐ no

Flow Type: ☐ Perennial ☑ Intermittent ☐ Ephemeral

Stream Flow Direction: East

Width (ft) (water's edge to water's edge): 1

Width (ft) (bank to bank): 1
(above OHWM; use OHWM Criteria below)

CHARACTERISTICS

Substrate Type
- ☐ Bedrock
- ☑ Gravel
- ☐ Sand
- ☐ Silt
- ☑ Cobbles
- ☐ Clay
- ☐ Concrete
- ☑ Other boulder

Probed Stream Depth
- ☐ N/A
- ☑ 0 – 6"
- ☐ 7 – 12"
- ☐ 13 – 24"
- ☐ 25 – 36"
- ☐ 37"+

Water Clarity
- ☑ Clear
- ☐ Discolored
- ☐ Oily Film
- ☐ Other

BANK HEIGHT AND SLOPE

Left Bank*	Right Bank*
Height (ft): 1/2	Height (ft): 1/2
Slope: ☐ 0-30º (4:1)	Slope: ☐ 0-30º (4:1)
☐ 31-45º (3:1)	☐ 31-45º (3:1)
☐ 46-60º (2:1)	☐ 46-60º (2:1)
☑ 61-90º (1:1)	☑ 61-90º (1:1)

Height (ft) (OHWM from stream bed):
*Direction when facing downstream

Evidence of Erosion: ☐ yes ☑ no

☐ Sloughing ☐ Undercutting ☐ Impact from Cattle

☐ 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

ASSOCIATED HABITAT

Riparian Vegetation
☑ yes, list ID: HB-
☐ no
If yes, list:
white oak, red oak, red maple, green ash, silky dogwood, multiflora rose, barberry

Width of riparian corridor (ft):

Stream Fringe (5' or less including both banks and does not meet wetland criteria)
☐ yes, width (ft):
☑ no
If yes, list :

Aquatic Vegetation
☐ yes
☑ no
If yes, list:

ASSOCIATED SPECIES

Aquatic Organisms
☐ yes
☑ no
If yes, list:

Riparian/Terrestrial Organisms
☐ yes
☑ no
If yes, list:

Stream has potential for fish presence
☐ yes
☑ no

T&E Species
☐ yes, list ID: WL/VG-
☑ no

OHWM Criteria – Ordinary High Water Mark

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

Discontinuous OHWM: ☐ yes ☑ no

Geometry: ☐ Meandering ☑ Relatively Straight

Presence of: ☑ run ☐ pools ☑ riffles
Explain:

Is the stream/tributary:
☑ natural
☐ manmade – Explain:
☐ man-altered – Explain:

NOTES:
Is hydrologically connected to wetland W2-T2-607A.

STREAM ID: S6-T2-CS607a

STREAM DATA

☐ ROW ☑ Project Facility **STATE** PA
☐ Access Road ☐ Staging/Storage Area

County: Luzerne

Stream Name: ☑ UNNAMED ☐ NAMED:

Date: 3/27/19

Stream Type: ☑ STREAM ☐ DITCH/CANAL

Map No. :

Observers: DW,CC

CHARACTERISTICS

Water Present: ☑ yes ☐ no

Flow Type: ☐ Perennial ☑ Intermittent ☐ Ephemeral

Stream Flow Direction: East

Width (ft) (water's edge to water's edge): 1

Width (ft) (bank to bank): 1
(above OHWM; use OHWM Criteria below)

CHARACTERISTICS

Substrate Type
- ☐ Bedrock
- ☐ Gravel
- ☑ Sand
- ☐ Silt
- ☑ Cobbles
- ☐ Clay
- ☐ Concrete
- ☑ Other muck

Probed Stream Depth
- ☐ N/A
- ☑ 0 – 6"
- ☐ 7 – 12"
- ☐ 13 – 24"
- ☐ 25 – 36"
- ☐ 37"+

Water Clarity
- ☑ Clear
- ☐ Discolored
- ☐ Oily Film
- ☐ Other

BANK HEIGHT AND SLOPE

Left Bank*	Right Bank*
Height (ft): 1/2	Height (ft): 1/2
Slope: ☐ 0-30º (4:1)	Slope: ☐ 0-30º (4:1)
☐ 31-45º (3:1)	☐ 31-45º (3:1)
☐ 46-60º (2:1)	☐ 46-60º (2:1)
☑ 61-90º (1:1)	☑ 61-90º (1:1)

Height (ft) (OHWM from stream bed):
*Direction when facing downstream

Evidence of Erosion: ☐ yes ☑ no

☐ Sloughing ☐ Undercutting ☐ Impact from Cattle

☐ 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

ASSOCIATED HABITAT

Riparian Vegetation
☑ yes, list ID: HB-
☐ no
If yes, list:
white oak, red oak, red maple, green ash, silky dogwood, multiflora rose, barberry

Width of riparian corridor (ft):

Stream Fringe (5' or less including both banks and does not meet wetland criteria)
☐ yes, width (ft):
☑ no
If yes, list :

Aquatic Vegetation
☐ yes
☑ no
If yes, list:

ASSOCIATED SPECIES

Aquatic Organisms
☐ yes
☑ no
If yes, list:

Riparian/Terrestrial Organisms
☐ yes
☑ no
If yes, list:

Stream has potential for fish presence
☐ yes
☑ no

T&E Species
☐ yes, list ID: WL/VG-
☑ no

OHWM Criteria – Ordinary High Water Mark

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

Discontinuous OHWM: ☐ yes ☑ no

Geometry: ☐ Meandering ☑ Relatively Straight

Presence of: ☑ run ☐ pools ☑ riffles
Explain:

Is the stream/tributary:
☐ natural
☐ manmade – Explain:
☐ man-altered – Explain:

NOTES:
Is hydrologically connected to wetland W2-T2-607A.

ATTACHMENT B
WETLAND AND WATER RESOURCE SUMMARY TABLES

WETLAND RESOURCE SUMMARY TABLE

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC (TRANSCO)
LEIDY SOUTH PROJECT - COMPRESSOR STATION 607A
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-CS607A	W1-T1-CS607A-1A	PEM	8	16	79	No	ISOLATE	41.300257	-76.220326	Other	Lick Branch	HQ-CWF, MF	-	Sphagnum moss was observed.
W2-T1-CS607A	W2-T1-CS607A-1A	PEM	119	36	5,198	No	ISOLATE	41.298862	-76.224436	Other	Lick Branch	HQ-CWF, MF	-	A depressional wetland located along the side of an existing drive-way.
W1-T2-CS607A	W1-T2-CS607A-1A	PEM	86	28	2,293	No	ISOLATE	41.298947	-76.225016	Other	Lick Branch	HQ-CWF, MF	-	Located in a field between wetlands W2-T2-CS607A and W2-T1-CS607A
W2-T2-CS607A	W2-T2-CS607A-1A	PEM	448	102	33,049	Yes	RPWWD	41.298632	-76.225689	EV	Lick Branch	HQ-CWF, MF	-	A PEM/PFO wetland complex that is located wihtin a field. S1-T2 flows throughout the wetland. Evidence of grazing was present within the PEM portions of the wetland.
	W2-T2-CS607A-1C	PFO	263	185	43,760	Yes	RPWWD	41.298034	-76.224574					
W1-T3-CS607A	W1-T3-CS607A-1A	PEM	123	40	4,238	No	ISOLATE	41.299025	-76.224094	Other	Phillips Creek	HQ-CWF, MF	-	Located in a field along an existing farm road.
W2-T3-CS607A	W2-T3-CS607-1A	PEM	96	464	69,952	Yes	DELINEATE	41.299797	-76.223577	Other	Phillips Creek	HQ-CWF,MF	-	Located in a hayfield along an existing road and above an existing pipeline ROW. Water conveys acorss the existing ROW into the PSS portion of the wetland. This wetland is hydrologically connected to wetland W3-T4-CS607A.
	W2-T3-CS607-1B	PSS	30	25	980		DELINEATE	41.300267	-76.223373					
W3-T3-CS607A	W3-T3-CS607A-1A	PEM	12	58	436	No	ISOLATE	41.300071	-76.221980	Other	Lick Branch	HQ-CWF,MF	-	Located within an existing pipeline ROW.
W1-T4-CS607A	W1-T4-CS607A-1A	PEM	198	200	37,317	Yes	ISOLATE	41.300710	-76.225400	Other	Phillips Creek	HQ-CWF, MF	-	Located within a hayfield. Wheel ruts were observed within the wetland.
W2-T4-CS607A	W2-T4-CS607A-1A	PEM	15	31	371	No	ISOLATE	41.300398	-76.224627	Other	Phillips Creek	HQ-CWF, MF	-	Located within a hayfield.
W3-T4-CS607A	W3-T4-CS607A-1A	PEM	200	148	30,735	Yes	DELINEATE	41.300111	-76.224509	Other	Phillips Creek	HQ-CWF, MF	-	Located within a hayfield along an existing road. This wetland is hydrologically connected to wetland W2-T3-CS607A.

Total PEM Wetlands	183,668
Total PSS Wetlands	980
Total PFO Wetlands	43,760
TOTAL	**228,408**

WATERCOURSE RESOURCE SUMMARY TABLE

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC (TRANSCO)
LEIDY SOUTH PROJECT - COMPRESSOR STATION 607A
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-CS607A	UNT to Lick Branch	Intermittent	9,699	1.5	14,548	Yes	RPW	41.297606	-76.222571	Lick Branch	HQ-CWF, MF	-	N	Y	Y	0-6" deep. Impacted by horses. Culvert present, Starts at W2-T2-CS607A and flows through the wetland. Hydrologically connected to S1-T3, S2-T3, S3-T3, S5-T2, S3-T2(CS607A)
S2-T2-CS607A	UNT to Lick Branch	Ephemeral	298	1	298	Yes	NRPW	41.297342	-76.220372	Lick Branch	HQ-CWF, MF	-	N	Y	Y	No water present at the time of survey. No erosion was noted. Hydrologically connected to W2-T2-CS607A
S3-T2-CS607A	UNT to Lick Branch	Intermittent	2,849	2	5,697	Yes	RPW	41.296816	-76.221194	Lick Branch	HQ-CWF, MF	-	N	Y	Y	0-6" water depth, No erosion noted. Channel braided. Hydrologically connected to W2-T2-CS607A
S4-T2-CS607A	UNT to Lick Branch	Intermittent	484	2	968	No	RPW	41.296791	-76.221428	Lick Branch	HQ-CWF, MF	-	N	Y	Y	0-6" water depth, No erosion noted. Channel braided. Hydrologicalled connected to W2-T2-607A
S5-T2-CS607A	UNT to Lick Branch	Intermittent	597	1	597	No	RPW	41.296805	-76.220669	Lick Branch	HQ-CWF, MF	-	N	Y	Y	Hydrologically connected to wetland W2-T2-CS607A
S6-T2-CS607A	UNT to Lick Branch	Intermittent	913	1	913	No	RPW	41.29673	-76.221132	Lick Branch	HQ-CWF, MF	-	N	Y	Y	Hydrologically connected to wetland W2-T2-CS607A
S1-T3-CS607A	UNT to Lick Branch	Intermittent	515	3	1,544	No	RPW	41.297157	-76.221847	Lick Branch	HQ-CWF, MF	-	N	Y	Y	0-6" water depth, No erosion noted.
S2-T3-CS607A	UNT to Lick Branch	Intermittent	178	3	535	No	RPW	41.297424	-76.221854	Lick Branch	HQ-CWF, MF	-	N	Y	Y	0-6" water depth, No erosion noted.
S3-T3-CS607A	UNT to Lick Branch	Intermittent	582	3	1,745	No	RPW	41.297275	-76.22147	Lick Branch	HQ-CWF, MF	-	N	Y	Y	0-6" water depth, No erosion noted.
				Total Intermittent Channels	26,547											
				Total Ephemeral Channels	298											
				TOTAL	26,845											

ATTACHMENT C

PENNSYLVANIA LEVEL 2 RAPID ASSESSMENT REPORT

TRANSCONTINENTAL GAS PIPE LINE COMPANY, LLC
LEIDY SOUTH PROJECT

ATTACHMENT C

COMPRESSOR STATION 607A LEVEL 2 RAPID ASSESSMENT REPORT

FAIRMOUNT TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

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TRANSCONTINENTAL GAS PIPELINE COMPANY, LLC
LEIDY SOUTH PROJECT

ATTACHMENT C

COMPRESSOR STATION 607A LEVEL 2 RAPID ASSESSMENT REPORT

FAIRMOUNT TOWNSHIP, LUZERNE COUNTY, PENNSYLVANIA

1.0 INTRODUCTION

WHM Consulting, Inc. (WHM) was retained by Transcontinental Gas Pipe Line Company, LLC (Williams) to conduct a Functional Assessment of wetland and water resources associated with the Leidy South Project – Compressor Station 607A Loop (Project) located in Fairmount Township, Luzerne County, Pennsylvania, on the Sweet Valley, Pennsylvania, USGS 7.5 Minute Quadrangle. The purpose of the Functional Assessment was to evaluate the condition of onsite aquatic resources that will be impacted as a result of the Project in order to meet the requirements as outlined in 25 Pa. Code Chapter 105 regulations. This report provides information on the methodology, data collected, field findings, and conclusions pertaining to the condition of wetland and water resources to be impacted. The Functional Assessment was conducted by WHM from March 2019 through August 2019.

2.0 METHODOLOGY

The Functional Assessment was conducted in accordance with the procedures and technical guidelines outlined in the Pennsylvania Department of Environmental Protection's (PADEP) Level 2 Rapid Assessment Protocols. A desktop analysis was conducted to determine assessment areas (AA) and zones of influence (ZOI). Field data was collected, and the desktop and field data were used in conjunction to arrive at the overall condition scores. The observations made represent the assessor's best professional judgement exercised with the guidance of the Rapid Assessment Protocols.

2.1 WETLAND CONDITION ASSESSMENT

The Functional Assessment of the onsite wetlands was conducted in accordance with the guidelines and procedures outlined in the *Pennsylvania Wetland Condition Level 2 Rapid Assessment Protocol* (Wetland Protocol). Aerial and satellite imagery combined with ArcGIS were utilized to determine the AA. The AA was determined based on the following criteria as outlined in the Wetland Protocol:

1. The AA is comprised of the entire wetland if the wetland is less than or equal to 1.0 acre in size.
2. If the wetland is larger than 1.0 acre in size and the impact area is less than 1.0 acre, the AA will be established around the impact area until the AA is 1.0 acre in size. In general, the AA will be a representative sampling of the entire wetland while still encompassing the impact area.
3. The AA is comprised of the entire wetland impact area if the proposed impact is greater than 1.0 acre in size.

Once the AA has been established, the wetland Zone of Influence (ZOI) is determined and is comprised of the land extending 300 ft. beyond the perimeter of the AA. The AA or ZOI is then assessed using the six condition indices outlined in Table 1. As noted in the table, two sub-indices are utilized to evaluate Vegetation Condition and Water Quality Stressors.

Index	Assessment Method	Zone Assessed
Wetland ZOI Condition	Desktop Analysis of Aerial Imagery Field Observation	ZOI
Roadbed Presence Condition	Desktop Analysis of Aerial Imagery Field Observation	ZOI
Vegetation Condition		
Invasive Species Presence Sub-Index	Field Observation	AA
Vegetation Stressor Presence Sub-Index	Field Observation	AA
Hydrologic Modification Stressor	Field Observation	AA
Sediment Stressor	Field Observation	AA
Water Quality Stressor		
Eutrophication Stressor Presence Sub-Index	Field Observation	AA
Contaminant/Toxicity Stressor Presence Sub-Index	Field Observation	AA

Table 1. Wetland Condition Indices.

According to the Wetland Protocol, the Wetland Condition Index Form (WCIF) and three supplemental worksheets (Roadbed Worksheet, Invasive Presence Worksheet, and Stressor Worksheet) are used to calculate the Overall Condition Index for the wetland being assessed. Using the WCIF, each of the six indices discussed in Table 1 are scored on a scale of 1 to 20, with 20 being the optimal condition. The Overall Condition Index is calculated by summing the six main indices and then dividing by 6. In general, the closer a score is to one, the better the condition the wetland is.

2.2 RIVERINE CONDITION ASSESSMENT

The Functional Assessment of onsite perennial and intermittent streams was conducted in accordance with the guidelines and procedures outlined in the *Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol* (Riverine Protocol). Aerial and satellite imagery and ArcGIS were utilized to determine the upper and lower boundaries of the AA. The boundaries of the AA were determined based on all or some of the following criteria as outlined in the Riverine Protocol:

1. The upstream influence of backwater projected as part of the hydrologic and hydraulic (H&H) analysis and application of the same distance downstream; or
2. 20 times the channel width at bankfull stage upstream and downstream; or
3. 100 feet upstream and downstream of the proposed location, whichever is greater.

Once the upper and lower boundaries of the AA were established, the Riparian Vegetation and Riparian ZOI were established. The Riparian Vegetation Areas was established using the following the criteria as outlined in the Riverine Protocol. The following criteria are listed in order of the method that is preferred by PADEP:

1. Hydrologic modeling analysis to determine the 100-year storm event; or
2. 100-year Federal Emergency Management Agency (FEMA) floodplain mapping; or
3. In FEMA unmapped areas, the flood prone area width is estimated by determining the elevation that corresponds to twice the maximum depth of the bankfull channel as taken from the established bankfull stage; or
4. In FEMA unmapped areas where hydrologic modeling analysis and stream cross-section data is not available, estimate the flood prone area width by extending 100 feet from the stream bank towards the valley margins. Best professional judgement is to be utilized by the assessor if one or more of the valley margins are less than 100 feet from the bank and adjust boundaries.

In areas where a mapped FEMA floodplain was available, ArcGIS was used to determine the boundary. In all instances, best professional judgement was used to define the Riparian Vegetation areas in accordance with the criteria provided above.

Once the Riparian Vegetation Areas were established, Riparian ZOI boundaries were determined by extending 100 feet landward from the Riparian Vegetation Area boundaries on each side of the stream and along the entire length of the Riparian Vegetation Area. If assessing the uppermost headwaters of a watercourse, the area 100 feet above the watercourse may be included in the Riparian Zone boundary.

In accordance with the Riverine Protocol, the Riparian ZOI is not evaluated as part of the condition assessment for perennial streams with a drainage area greater than 100 square miles or less than 2,000 square miles. Likewise, the Instream Habitat condition will not be evaluated for intermittent streams. Neither of the aforementioned indices will be included in the assessment when evaluating those stream types unless deemed necessary by PADEP.

Once the AA and ZOI have been determined, the riverine condition is assessed using the five condition indices outlined in Table 2. As noted in the table, not all indices are used to determine the overall condition of the channel being evaluated, unless deemed necessary by PADEP.

Index	Watercourse Classification			Assessment Method	Zone Assessed
	Intermittent	**Perennial** (Drainage area ≤ 100 sq. miles)	**Perennial** (Drainage area >100 sq. miles but ≤ 2,000 sq. miles)		
Channel/Floodplain Condition	Yes	Yes	Yes	Field Observations	AA
Riparian Vegetation Condition	Yes	Yes	Yes	Desktop Analysis of Aerial Imagery Field Observations	AA Riparian Vegetation Area
Riparian Zone of Influence Condition	Yes	Yes	No	Desktop Analysis of Aerial Imagery Field Observations	Riparian ZOI
Instream Habitat Condition	No	Yes	Yes	Field Observations	AA
Channel Alteration Condition	Yes	Yes	Yes	Field Observations	AA

Table 2. Indices to be determined based on watercourse classification.

According to the Riverine Protocol, the Riverine Assessment Form 1 (RAF1) is to be used to calculate the Riverine Condition Index for the stream being assessed. Using RAF1, each of the six indices discussed in Table 2 are scored on a scale of 1 to 20, with 20 being the optimal condition. When calculating the Riparian Vegetation Condition Index and the Riparian ZOI Condition Index, the left and right sides are scored, summed together, and then divided by 2 for the overall score for each.

The indices evaluated in Table 2 are weighted equally when calculating the final score for the Riverine Condition Index (RCI). Therefore, to calculate RCI, each index score is added together and then divided by the number of indices evaluated. For example, when calculating RCI for an intermittent stream, the scores for the four indices assessed would be added together and divided by 4. In general, the closer the score is to 1, the better the condition of the stream being assessed.

3.0 RESULTS

Four (4) wetlands were evaluated during the assessment. No streams were assessed, because no streams are being impacted. Attachment A- Assessment Forms includes data collected for the wetlands and watercourses at the site. Attachment B - Figures includes mapping of the resources evaluated during the assessment and their respective AA and ZOI boundaries. The following provides a descriptive summary of the data collected during the Functional Assessment.

3.1 WETLANDS

Overall four (4) wetlands were assessed for the purposes of the Functional Assessment. Due to proximity, wetlands were combined as applicable, which resulted in a total of two (2) assessment areas. In general, the wetland ZOIs were comprised of forests, agricultural fields, driveways, an existing pipeline, and other stream and wetland features.

Leidy South - Compressor Station 607A Project - Wetland Condition Assessment Summary Table									
Assessment Area Number	Wetland ID	Assessment Area (Acres)	ZOI Condition Index	Roadbed Presence Index	Vegetation Condition Index	Hydrologic Modification Index	Sediment Stressor Index	Water Quality Stressor Index	Overall Condition Index
1	W2-T3-CS607A, W2-T2-CS607A, & W2-T1-CS607A	1.00	0.55	0.18	0.50	0.90	0.95	1.00	0.68
2	W3-T3-CS607A	0.10	0.68	0.85	0.43	0.85	0.95	1.00	0.79

Table 3 – Wetland Condition Assessment Summary Table

Functional assessments resulted in Overall Condition Index scores ranged from 0.68 to 0.79 for the two (2) wetland functional assessments. See Attachment A (Assessment Forms) and Attachment B (Figures) for more detail.

3.2 STREAMS

No streams were proposed to be impacted by the Project, so no stream assessments were completed.

4.0 CONCLUSIONS

Four (4) wetlands were evaluated during the Functional Assessment. Because some of the wetlands were located within the same area and possessed similar characteristics and habitat, they were grouped together in one assessment area. This resulted in two (2) wetland functional assessments being completed. The Overall Condition Index for wetlands ranged from 0.68 to 0.79, indicating that wetlands for the project were of marginal to high quality.

5.0 REFERENCES

1. Pennsylvania Code. 2017. http://www.pacode.com/secure/data/025/025toc.html.

2. Pennsylvania Department of Environmental Protection (PADEP). 2017. Pennsylvania Riverine Condition Level 2 Rapid Assessment Protocol. Version 2.0. Document Number 310-2137-003.

3. Pennsylvania Department of Environmental Protection (PADEP). 2017. Pennsylvania Wetland Condition Level 2 Rapid Assessment Protocol. Version 2.0. Document Number 310-2137-002.

4. United States Geological Survey (USGS). Topographic Quadrangle 7.5 minute Series, Sweet Valley, PA.

ATTACHMENT A
ASSESSMENT FORMS

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
Williams-18-204	Leidy South - Compressor Station 607A	8/6/2019	0.03	1	1.00	

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
Charly Bloom	41.299797, 41.2986, 41.298862	-76.2235, -76.225689, -76.224436	W2-T3-CS607A, W2-T2-CS607A, W2-T1-CS607A

General Comments:

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.				**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:	Optimal	Optimal	Suboptimal	Marginal	Poor		
Scoring:	% ZOI Area:	9%	32%	2%	51%	6%	0%	**Total Score:**
	Score:	19	17	13	7	1	0	**0.55**
	Total Sub-score:	1.71	5.44	0.26	3.57	0.06	0.00	**11.04**

Comments:

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.				**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.			**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.				**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.			**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	3	* (0.67)	2	
b. Roadbed 100-300:	5	* (0.33)	2	**0.18**
		Total Score:	**4**	

Comments:

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
a. Invasive Species Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: W2-T3-CS607A - mivi (15%), romu (40%), beth (10%) **W2-T2-CS607A** - romu (5%), potr (20%) **W2-T1-CS607A -** N/A

	Condition Category																			
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments:

a. Invasive Sub-Score:	6	**Total Score**	**0.50**
b. Vegetation Sub-Score:	14	**20**	

4. Hydrologic Modification Index

	Condition Category																			
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments:

Score:	**18**		**0.90**

5. Sediment Stressor Index

	Condition Category																			
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	High Optimal: No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments:

Score:	**19**		**0.95**

6. Water Quality Stressor Index

	Condition Category																			
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments:

	Condition Category																			
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**				
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments:

a. Eutrophication Score	20	**Total Score:**	**1.00**
b. Contaminant Score	20	**40**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.68**

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

Roadbed Worksheet

Project Name / Identifier			Date	Name(s) of Evaluator(s)
Leidy South - Compressor 607A			8/6/2019	Charly Bloom
Resource Identifier	**AA #**	**Lat (dd)**	**Long (dd)**	**Notes:**
W2-T3-CS607A, W2-T2-CS607A, W2-T1-CS607A	1	41.299797, 41.298600, 41.298862	-76.2235, -76.225689, -76.224436	

Roadbeds: Record the number of occurrences by roadbed type and distance category. Multiply the number of occurrences by the weighting factors for each roadbed type and distance category then sum the total score for each distance category. The total scores for each distance category are then compared to the condition category descriptions.

Roadbed Type	Distance	Occurrences	Weighting Factor	Score	Distance	Occurrences	Weighting Factor	Score
≥ 4 Lane Paved	0-100 ft.		4	0	100-300 ft.		4	0
2 Lane Paved	0-100 ft.	1	2	2	100-300 ft.	2	2	4
1 Lane Paved	0-100 ft.		1	0	100-300 ft.		1	0
Gravel Road	0-100 ft.	1	1	1	100-300 ft.	1	1	1
Dirt Road	0-100 ft.		2	0	100-300 ft.		2	0
Railroad	0-100 ft.		2	0	100-300 ft.		2	0
Other Roadbeds	0-100 ft.		1, 2 or 4		100-300 ft.		1, 2 or 4	
Total Scores:	0-100 ft.	3			100-300 ft.	5		

Road Comments:

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

STRESSOR WORKSHEET

2/4/2017

	Occurrence in AA		
	Y	#'s	N
Vegetation Alteration			
Mowing	X		
Moderate livestock grazing (within one year)			X
Crops (annual row crops, within one year)			X
Selective tree harvesting/cutting (>50% removal, within 5 years)			X
Right-of-way clearing (mechanical or chemical)	X		
Clear cutting or Brush cutting (mechanized removal of shrubs and saplings)			X
Removal of woody debris			X
Aquatic weed control (mechanical or herbicide)			X
Excessive herbivory (deer, muskrat, nutria, carp, insects, etc.)			X
Plantation (conversion from typical natural tree species, including orchards)			X
Other:			X
Total Number:	**2**		
Hydrologic Modification			
Ditching, tile draining, or other dewatering methods			X
Dike/weir/dam			X
Filling/grading			X
Dredging/excavation			X
Stormwater inputs (culvert or similar concentrated urban runoff)			X
Microtopographic alterations (e.g., plowing, forestry bedding, skidder/ATV tracks)	X		
Dead or dying trees (trunks still standing) *			X
Stream alteration (channelization or incision)			X
Other:			
Total Number:	**1**		
Sedimentation			
Sediment deposits/plumes			X
Eroding banks/slopes			X
Active construction (earth disturbance for development)			X
Active plowing (plowing for crop planting in past year)			X
Intensive livestock grazing (in one year, ground is >50% bare)			X
Active selective forestry harvesting (within one year)			X
Active forest harvesting (within two years, includes roads, borrow areas, pads, etc.)			X
Turbidity (moderate concentration of suspended solids in the water column, obvious sediment discharges)			X
Other:			X
Total Number:	**0**		
Eutrophication			
Direct discharges from agricultural feedlots, manure pits, etc.			X
Direct discharges from septic or sewage treatment plants, fish hatcheries, etc.			X
Heavy or moderately heavy formation of algal mats			X
Other:			X
Total Number:	**0**		
Contaminant/Toxicity			
Severe vegetation stress (source unknown or suspected)			X
Obvious spills, discharges, plumes, odors, etc.			X
Acidic drainages (mined sites, quarries, road cuts)			X
Point discharges from adjacent industrial facilities, landfills, railroad yards, or comparable sites			X
Chemical defoliation (majority of herbaceous and woody plants affected, within one year)			X
Fish or wildlife kills or obvious disease or abnormalities observed			X
Excessive garbage/dumping			X
Other:			X
Total Number:	**0**		

**** Dead or dying trees attributed to beaver activity or emerald ash borer (or other identifiable insect infestation) should not be recorded as a stressor present. The assessor is responsible for recording observations in the comment section concerning presence of these conditions.***

Pennsylvania Wetland Condition Level 2 Rapid Assessment
(Document No. 310-2137-002)
Pennsylvania Department of Environmental Protection

Invasive Species Presence Worksheet

Are invasive species (from list) present at the site in any layer? YES NO

If listed species present, enter the percent areal coverage for each species below:

Species Code	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%	*Species Code*	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%

Total % relative cover of all invasives, collectively on site: _____%

Comments:

Common Invasives/Aggressives List

Code	Common Name	*Scientific*	Status	Code	Common Name	*Scientific*	Status
aggi2	Redtop	*Agrostis gigantea*	FACW	luhe	Water primrose	*Ludwigia hexapetala*	OBLW
algl2	European Alder	*Alnus glutinosa*	FACW	lyvu	Garden loosestrife	*Lysimachia vulgaris*	OBLW
arhi3	Carpetgrass	*Arthraxon hispidus*	FAC-	lysa2	Purple loosestrife	*Lythrum salicaria*	FACW
beth	Japanese barberry	*Berberis thunbergii*	FACW	maqu	European waterclover	*Marsilea quadrifolia*	OBLW
bevu	European barberry	*Berberis vulgaris*	FACW	mivi	Japanese stiltgrass	*Microstegium vimineum*	FAC
butom	Flowering Rush	*Butomus umbellatus*	OBLW	nami2	Water cress	*Nasturtium officinale*	OBLW
calli6	Pond water-starwort	*Callitriche stagnalis*	OBLW	pelo	Low smartweed	*Persicaria longiseta*	FACW
egde	Brazilian waterweed	*Egeria densa*	OBLW	phar	Reed canary grass	*Phalaris arundinacea*	FACW
elan	Russian olive	*Elaeagnus angustifolia*	FACU	phau7	Common Reed	*Phragmites australis*	OBLW
elum	Autumn olive	*Elaeagnus umbellata*	FACU	potr	Rough bluegrass	*Poa trivialis*	FACW
ephi	Hairy willow-herb	*Epilobium hirsutum*	FACW	pocu6	Japanese knotweed	*Polygonum (Faloia) cuspidatum*	FAC-
eppa5	Willow-herb	*Epilobium parviflorum*	FACW	pgpf	Mile-a-minute	*Polygonum perfoliatum*	FAC-
fasa	Giant knotweed	*Fallopia sachalinensis*	OBLW	puera	Kudzu-vine	*Pueraria lobata*	FAC-
gldi	Mudmats	*Glossostigma diandrum*	OBLW	pysp1	Apple/crabapple/pear	*Pyrus sp.*	FAC?
hola	Velvetgrass	*Holcus lanatus*	FAC	rhfr	Glossy Buckthorn	*Rhamnus frangula*	FAC-
huja	Japanese Hops	*Humulus japonicus*	FACU	romu	Multiflora rose	*Rosa multiflora*	FACU
loja	Japanese honeysuckle	*Lonicera japonica*	FAC-	tyan	Cattail (hybrid)	*Typha angustifolia*	OBLW
lomo	Morrow's honeysuckle	*Lonicera morrowii*	NI	tygl	Hybrid cattail	*Typha x glauca*	OBLW
lota	Tartarian honeysuckle	*Lonicera tatarica*					

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
William-18-204	Leidy South - Compressor Station 607A	8/6/2019	0.01	2	.01	

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
Charly Bloom	41.300071	-76.221980	W3-T3-CS607A

General Comments:

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor					CI = Total Score/20
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.				**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:	Optimal	Suboptimal	Marginal				
Scoring:	% ZOI Area:	64%	2%	34%				**Total Score:**
	Score:	17	12	7				**0.68**
	Total Sub-score:	10.88	0.24	2.38	0.00	0.00	0.00	**13.50**

Comments:

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.				**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments:

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor					CI = Total Score/20
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.				**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	**0.85**
		Total Score:	**17**	

Comments:

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: mivi, Japanese Stiltgrass (*Microstegium vimineum*) (FAC) 50%

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments:

a. Invasive Sub-Score:	3	**Total Score**
b. Vegetation Sub-Score:	14	**17**

0.43

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments:

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments:

Score:	**19**

0.95

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments:

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments:

a. Eutrophication Score	20	**Total Score:**
b. Contaminant Score	20	**40**

1.00

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.79**

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

Roadbed Worksheet

Project Name / Identifier			Date	Name(s) of Evaluator(s)
Leidy South - Compressor Station 607A			8/6/2019	Charly Bloom
Resource Identifier	**AA #**	**Lat (dd)**	**Long (dd)**	**Notes:**
		41.300071	-76.221980	W3-T3CS607A

Roadbeds: Record the number of occurrences by roadbed type and distance category. Multiply the number of occurrences by the weighting factors for each roadbed type and distance category then sum the total score for each distance category. The total scores for each distance category are then compared to the condition category descriptions.

Roadbed Type	Distance	Occurrences	Weighting Factor	Score	Distance	Occurrences	Weighting Factor	Score
≥ 4 Lane Paved	0-100 ft.		4	0	100-300 ft.		4	0
2 Lane Paved	0-100 ft.		2	0	100-300 ft.		2	0
1 Lane Paved	0-100 ft.		1	0	100-300 ft.		1	0
Gravel Road	0-100 ft.		1	0	100-300 ft.		1	0
Dirt Road	0-100 ft.		2	0	100-300 ft.		2	0
Railroad	0-100 ft.		2	0	100-300 ft.		2	0
Other Roadbeds	0-100 ft.	1	1, 2 or 4	1	100-300 ft.	1	1, 2 or 4	1
Total Scores:	0-100 ft.	1			100-300 ft.	1		

Road Comments:

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

STRESSOR WORKSHEET

2/4/2017

	Occurrence in AA		
	Y	#'s	N
Vegetation Alteration			
Mowing	X		X
Moderate livestock grazing (within one year)			X
Crops (annual row crops, within one year)			X
Selective tree harvesting/cutting (>50% removal, within 5 years)			X
Right-of-way clearing (mechanical or chemical)	X	1	
Clear cutting or Brush cutting (mechanized removal of shrubs and saplings)			X
Removal of woody debris			X
Aquatic weed control (mechanical or herbicide)			X
Excessive herbivory (deer, muskrat, nutria, carp, insects, etc.)			X
Plantation (conversion from typical natural tree species, including orchards)			X
Other:			X
Total Number:	**2**		
Hydrologic Modification			
Ditching, tile draining, or other dewatering methods			X
Dike/weir/dam			X
Filling/grading			X
Dredging/excavation			X
Stormwater inputs (culvert or similar concentrated urban runoff)			X
Microtopographic alterations (e.g., plowing, forestry bedding, skidder/ATV tracks)	X		
Dead or dying trees (trunks still standing) *			X
Stream alteration (channelization or incision)			X
Other:			X
Total Number:	**1**		
Sedimentation			
Sediment deposits/plumes			X
Eroding banks/slopes			X
Active construction (earth disturbance for development)			X
Active plowing (plowing for crop planting in past year)			X
Intensive livestock grazing (in one year, ground is >50% bare)			X
Active selective forestry harvesting (within one year)			X
Active forest harvesting (within two years, includes roads, borrow areas, pads, etc.)			X
Turbidity (moderate concentration of suspended solids in the water column, obvious sediment discharges)			X
Other:			X
Total Number:	**0**		
Eutrophication			
Direct discharges from agricultural feedlots, manure pits, etc.			X
Direct discharges from septic or sewage treatment plants, fish hatcheries, etc.			X
Heavy or moderately heavy formation of algal mats			X
Other:			X
Total Number:	**0**		
Contaminant/Toxicity			
Severe vegetation stress (source unknown or suspected)			X
Obvious spills, discharges, plumes, odors, etc.			X
Acidic drainages (mined sites, quarries, road cuts)			X
Point discharges from adjacent industrial facilities, landfills, railroad yards, or comparable sites			X
Chemical defoliation (majority of herbaceous and woody plants affected, within one year)			X
Fish or wildlife kills or obvious disease or abnormalities observed			X
Excessive garbage/dumping			X
Other:			X
Total Number:	**0**		

**** Dead or dying trees attributed to beaver activity or emerald ash borer (or other identifiable insect infestation) should not be recorded as a stressor present. The assessor is responsible for recording observations in the comment section concerning presence of these conditions.***

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Invasive Species Presence Worksheet

Are invasive species (from list) present at the site in any layer? YES NO

If listed species present, enter the percent areal coverage for each species below:

Species Code	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%	*Species Code*	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%

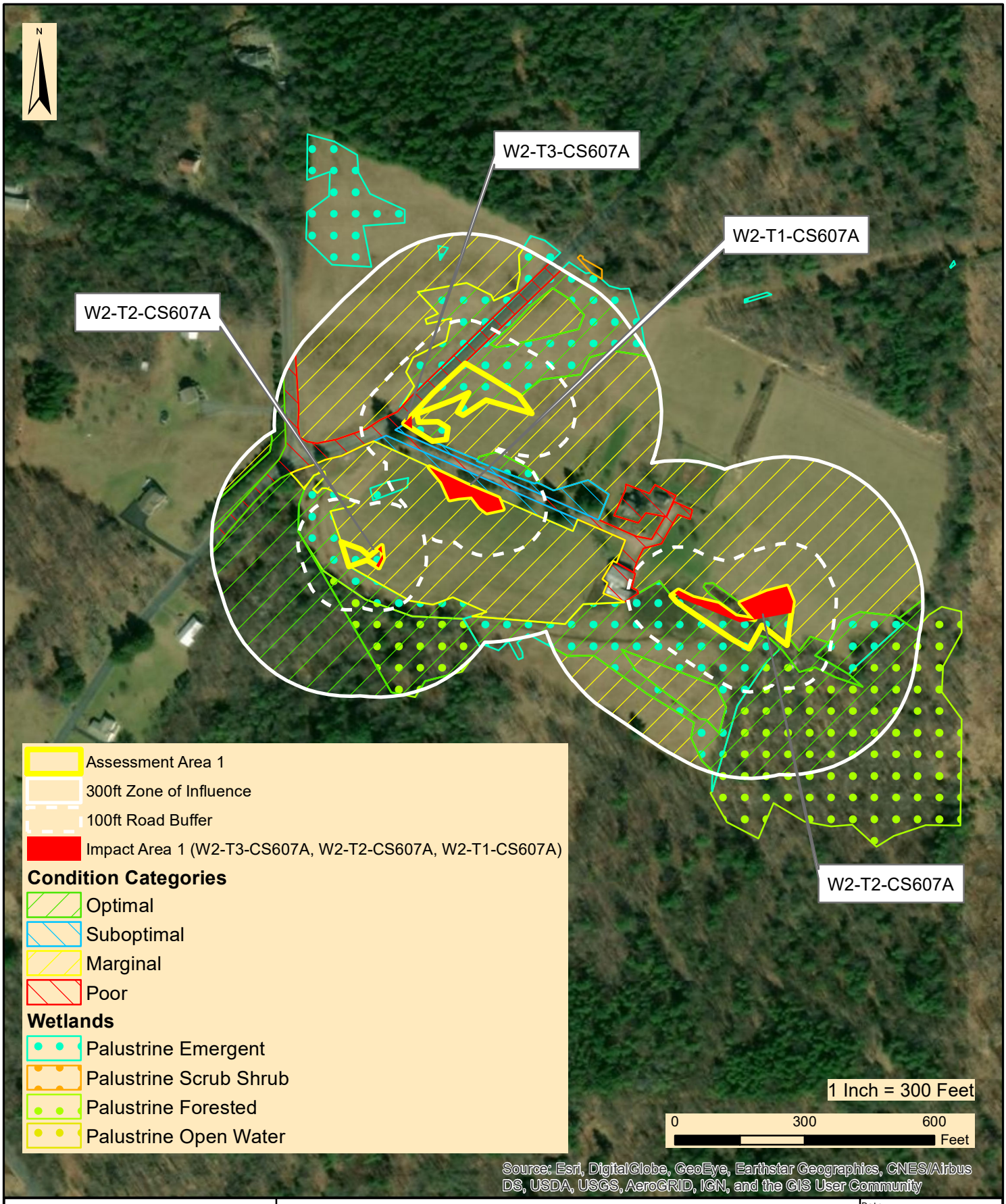
Total % relative cover of all invasives, collectively on site: _____%

Comments:

Common Invasives/Aggressives List

Code	Common Name	*Scientific*	Status	Code	Common Name	*Scientific*	Status
aggi2	Redtop	*Agrostis gigantea*	FACW	luhe	Water primrose	*Ludwigia hexapetala*	OBLW
algl2	European Alder	*Alnus glutinosa*	FACW	lyvu	Garden loosestrife	*Lysimachia vulgaris*	OBLW
arhi3	Carpetgrass	*Arthraxon hispidus*	FAC-	lysa2	Purple loosestrife	*Lythrum salicaria*	FACW
beth	Japanese barberry	*Berberis thunbergii*	FACW	maqu	European waterclover	*Marsilea quadrifolia*	OBLW
bevu	European barberry	*Berberis vulgaris*	FACW	mivi	Japanese stiltgrass	*Microstegium vimineum*	FAC
butom	Flowering Rush	*Butomus umbellatus*	OBLW	nami2	Water cress	*Nasturtium officinale*	OBLW
calli6	Pond water-starwort	*Callitriche stagnalis*	OBLW	pelo	Low smartweed	*Persicaria longiseta*	FACW
egde	Brazilian waterweed	*Egeria densa*	OBLW	phar	Reed canary grass	*Phalaris arundinacea*	FACW
elan	Russian olive	*Elaeagnus angustifolia*	FACU	phau7	Common Reed	*Phragmites australis*	OBLW
elum	Autumn olive	*Elaeagnus umbellata*	FACU	potr	Rough bluegrass	*Poa trivialis*	FACW
ephi	Hairy willow-herb	*Epilobium hirsutum*	FACW	pocu6	Japanese knotweed	*Polygonum (Faloia) cuspidatum*	FAC-
eppa5	Willow-herb	*Epilobium parviflorum*	FACW	pgpf	Mile-a-minute	*Polygonum perfoliatum*	FAC-
fasa	Giant knotweed	*Fallopia sachalinensis*	OBLW	puera	Kudzu-vine	*Pueraria lobata*	FAC-
gldi	Mudmats	*Glossostigma diandrum*	OBLW	pysp1	Apple/crabapple/pear	*Pyrus sp.*	FAC?
hola	Velvetgrass	*Holcus lanatus*	FAC	rhfr	Glossy Buckthorn	*Rhamnus frangula*	FAC-
huja	Japanese Hops	*Humulus japonicus*	FACU	romu	Multiflora rose	*Rosa multiflora*	FACU
loja	Japanese honeysuckle	*Lonicera japonica*	FAC-	tyan	Cattail (hybrid)	*Typha angustifolia*	OBLW
lomo	Morrow's honeysuckle	*Lonicera morrowii*	NI	tygl	Hybrid cattail	*Typha x glauca*	OBLW
lota	Tartarian honeysuckle	*Lonicera tatarica*					

ATTACHMENT B
FIGURES



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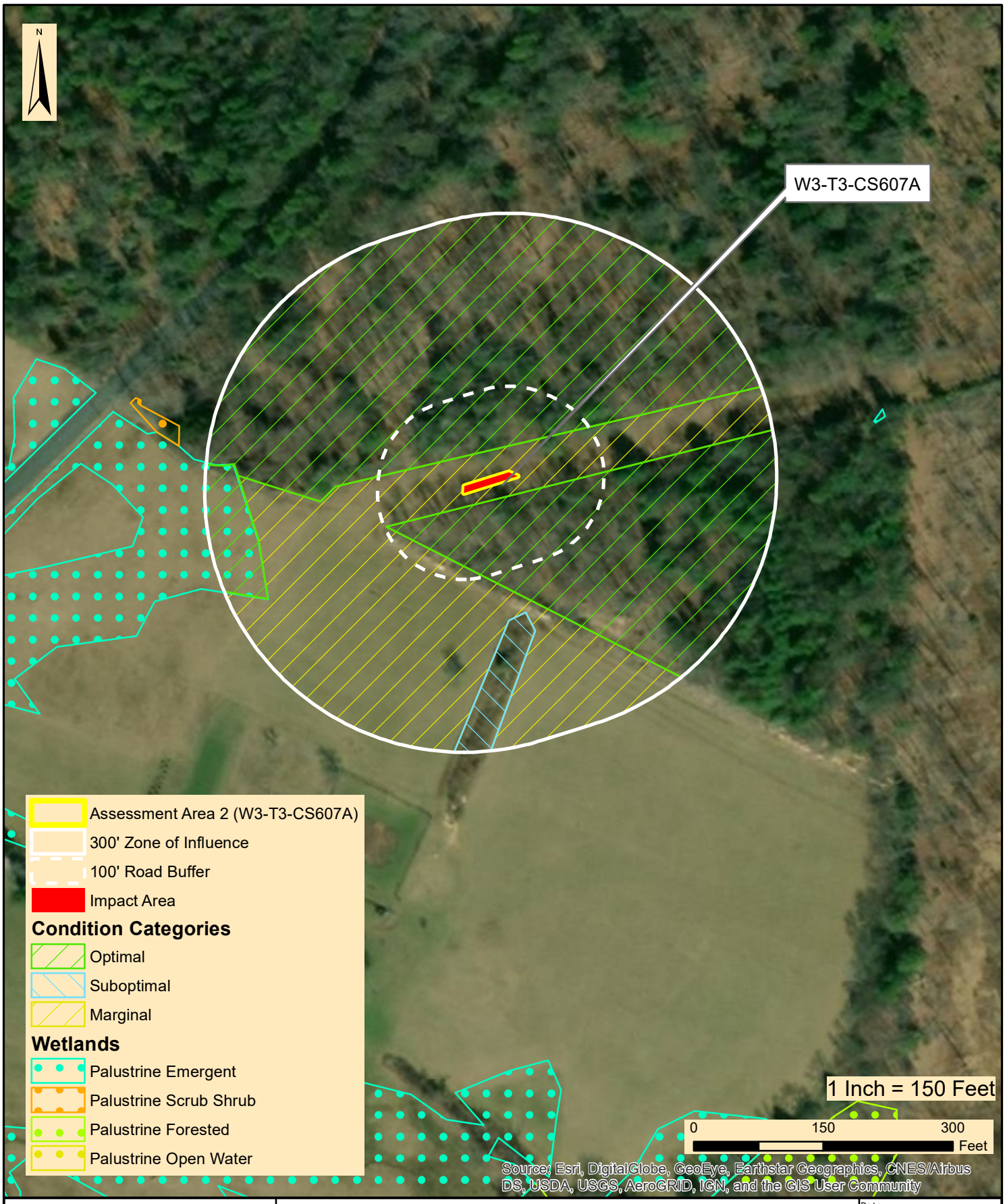
TRANSCONTINENTAL GAS PIPELINE COMPANY, LLC

LEIDY SOUTH PROJECT - COMPRESSOR STATION 607A

WETLAND FUNCTIONAL ASSESSMENT -
ASSESSMENT AREA 1
(W2-T3-CS607A, W2-T2-CS607A, W2-T1-CS607A)

FAIRMONT TOWNSHIP | LUZERNE COUNTY | PENNSYLVANIA

Date: 08/07/2019
WHM Drawing Number: WILLIAMS204A001
Drawn By: CSB
Figure Number: 1



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TRANSCONTINENTAL GAS PIPELINE COMPANY, LLC

LEIDY SOUTH PROJECT - COMPRESSOR STATION 607A

WETLAND FUNCTIONAL ASSESSMENT - ASSESSMENT AREA 2 (W3-T3-CS607A)

FAIRMONT TOWNSHIP | LUZERNE COUNTY | PENNSYLVANIA

Date: 08/07/2019
WHM Drawing Number: WILLIAMS204A002
Drawn By: CSB
Figure Number: 2