Aquatic Resource Report Addendum for the Pennsylvania Pipeline Project, Southcentral Region, Perry County, Pennsylvania

Prepared By:

Tetra Tech, Inc.

For

Sunoco Pipeline, LP

525 Fritztown Road

Sinking Spring, PA

March 2016

TABLE OF CONTENTS

ACRONYMS

1987 Manual	Corps of Engineers Wetland Delineation Manual
Corps Regional Supplement	Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region
FAC	Facultative
FACU	Facultative Upland
FACW	Facultative Wetland
GIS	Geographic Information Systems
GPS	Global Positioning System
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OBL	Obligate
PA	Pennsylvania
PEM	Palustrine Emergent
PFO	Palustrine Forested
Project	Southcentral Region, Pennsylvania Pipeline Project
PSS	Palustrine Scrub Shrub
ROW	Right-of-Way
SPLP	Sunoco Pipeline, LP
UNT	Unnamed Tributary
UPL	Upland
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

1.0 INTRODUCTION

On behalf of Sunoco Pipeline, LP (SPLP), Tetra Tech, Inc. (Tetra Tech), has prepared this Aquatic Resource Addendum Report for Perry County to support the Pennsylvania Pipeline Project (Project). Additional aquatic resource surveys were determined to be necessary to accommodate additional Project area changes. This report is an addendum to the original Aquatic Resources Report prepared for Perry County, Pennsylvania (PA) and dated July 2015. The two reports provide a comprehensive delineation of aquatic resources to be or likely to be impacted by the proposed Project. Wetland areas were delineated onsite using methodology outlined within the United States Army Corps of Engineers (USACE) *Wetland Delineation Manual* (Environmental Laboratory, 1987; *1987 Manual*), as amended by the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region*, April 2012 (Environmental Laboratory, 2012; *Corps Regional Supplement*).

The content of this report presents the methodology, results, and conclusions of wetland delineation and stream identification activities completed for addendum study areas. This report provides additional baseline, existing environment information in regards to aquatic resources so that proper avoidance and minimization measures can be implemented. This report does not reference a detailed project description or present impacts, or discuss Clean Water Act jurisdiction.

2.0 METHODOLOGY

USACE requires the use of the procedures enumerated in the *1987 Manual* (Environmental Laboratory, 1987) and the *Corps Regional Supplement* (Environmental Laboratory, 2012) for making jurisdictional determinations. According to the *1987 Manual*, an area is defined as a wetland if, under normal circumstances, it meets all three of the following criteria:

1. Predominance of hydrophytic vegetation (plants which are adapted for life in saturated soil conditions);
2. Hydric soils (soils which were formed under water, or in saturated conditions); and
3. Wetland hydrology (or the presence of inundated or saturated soils at some time during the growing season).

Wetlands identified in the field were classified in accordance with the U.S. Fish and Wildlife Service's (USFWS) *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al., 1979). Wetland classifications are as follows: palustrine emergent (PEM), palustrine scrub-shrub (PSS), and palustrine forested (PFO). Dominant vegetation was identified and classified according to The National Wetland Plant List: 2014 Update of Wetland Ratings (Lichvar, 2014). Plant classifications are as follows:

Obligate (OBL) - essentially always found in wetlands; estimated probability >99%

Facultative Wetland (FACW) - usually found in wetlands; estimated probability 67%-99%

Facultative (FAC) - equally likely to occur in wetlands and non-wetlands;
estimated probability 34%-66%

Facultative Upland (FACU) – sometimes occurs in wetlands; estimated probability 1%-33%

Upland (UPL) - rarely occurs in wetlands; estimated probability <1%

The field investigations for modifications to the proposed pipeline Project were performed during numerous field visits from November 2013 through March 2016. The study area was limited to the modification areas illustrated on the Project mapping. Preliminary site reconnaissance of the study area was conducted through a review of available Geographic Information Systems (GIS) resources. Existing information reviewed included the following:

- United States Geological Survey (USGS) topographic mapping (Figures 1-1 to 1-2; USGS, 2009)
- Natural Resources Conservation Service (NRCS) National Cooperative Soil Survey (Figures 2-1 to 2-2; NRCS, 2014)
- United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Mapping (Figures 3-1 to 3-2; USFWS, 2009)

The delineation consisted of the establishment of the wetland/upland margin with flagging hung at intervals that accurately depicted the outline of the boundary. The individual flags were then located using a Global Positioning System (GPS) receiver and later added to the Project area mapping. Wetland flagging was limited to the bounds of the investigated study area and wetlands are shown as closed or partially closed systems on the detail map (Figures 4-1 to 4-3).

Stream data sheets detailing stream characteristics are provided in Appendix A. Appendix B contains photographs of streams located within the study area. Appendix C provides a list of hydric soils known to occur within Perry County. Resumes of project personnel are included in Appendix D.

3.0 RESULTS

The field investigations identified three areas within Perry County, PA, located within the Southcentral Region of the proposed Pennsylvania Pipeline Project Addendum Study Area that met the wetland criteria outlined in the 1987 Manual, as amended by the *Corps Regional Supplement*. Six streams were identified within the Project study area. A narrative summary of field data collected for these systems is presented below. The detail maps provided as Figures 4-1 to 4-3 illustrate the wetland and stream locations in relation to the Addendum Study Area.

3.1 WETLAND IDENTIFICATION AND DELINEATION

Hydric soils and soils with hydric components are often associated with wetlands. The NRCS Soil Survey hydric soil list for Perry County, PA is included in Appendix C. The NRCS soil survey maps are included as Figures 2-1 to 2-2. Confirmation of the soil mapping units was not performed during this site evaluation.

See Figures 3-1 to 3-2 for NWI wetlands that fall within the Addendum Study Area.

Based on field evidence and best professional judgment, it was determined that three wetlands are present within the study area. The areas demonstrated the presence of all three wetland parameters required by the *1987 Manual* and the *Corps Regional Supplement*. The vegetative community was dominated by hydrophytic plant species, the soils exhibited hydric characteristics, and the area contained wetland hydrology indicators.

Wetland W-L2

W-L2 is a previously identified wetland that was extended into the Addendum Study Area (Figure 4-1). No new data was collected for this wetland extension.

Wetland W-L1

W-L1 is a previously identified wetland that was extended into the Addendum Study Area (Figure 4-1). No new data was collected for this wetland extension.

Wetland W-J70

W-J70 is a previously identified wetland that was extended into the Addendum Study Area (Figure 4-2). No new data was collected for this wetland extension.

3.2 STREAM IDENTIFICATION AND EVALUATION

Based on field evidence and best professional judgment, it was determined that six streams are located within the evaluated study area. A data sheet that details the bank and channel characteristics, substrate composition, aquatic habitat, and hydrology was prepared for one stream (Appendix A).

Stream J71

Stream J71 (S-J71) is an ephemeral unnamed tributary (UNT) to Bull Run (Figure 4-3). The stream bank is approximately 2.5 feet in width. The bank height is 6 inches. The stream bed contains a boulder, cobble, gravel, and organic substrate. The stream exhibited no flow at the time of the field investigation.

Stream S-Q70

S-Q70 is a previously identified stream that was extended into the Addendum Study Area (Figure 4-1). No new data was collected for this stream extension.

Stream S-L6

S-L6 is a previously identified stream that was extended into the Addendum Study Area (Figure 4-1). No new data was collected for this stream extension.

Stream S-J74

S-J74 is a previously identified stream that was extended into the Addendum Study Area (Figure 4-2). No new data was collected for this stream extension.

Stream S-J75

S-J75 is a previously identified stream that was extended into the Addendum Study Area (Figure 4-2). No new data was collected for this stream extension.

Stream S-J76

S-J76 is a previously identified stream that was extended into the Addendum Study Area (Figure 4-2). No new data was collected for this stream extension.

4.0 CONCLUSIONS

During the field investigations in Perry County, PA, located within the Southcentral Region of the proposed Pennsylvania Pipeline Project, three wetlands were identified within the Addendum Study Area which exhibited all three criteria necessary to be classified as a jurisdictional wetland in accordance with the *1987 Manual and the Regional Supplement*:

1. Predominance of hydrophytic vegetation (plants which are adapted for life in saturated soil conditions);
2. Hydric soils (soils which were formed under water, or in saturated conditions); and
3. Wetland hydrology (or the presence of inundated or saturated soils at some time during the growing season).

Six streams were identified within the evaluated study area.

REFERENCES

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe, 1979. Classification of Wetlands and Deepwater Habitats of the United States. United States Government Printing Office. Washington, D.C. GPO 024-010-00524-6. 103 pp.

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United States Geological Survey, 2009, Unites States Geological Survey Topographical Mapping. available at: http//nmviewogc.cr.usgs.gov/viewer.htm.

TABLE

Table 1
Wetland and Stream Summary
Pennsylvania Pipeline Project
1 of 1

Water Resource	Dominant Plant Community/Flow Regime	Bank Full Width (ft.)	Water Depth	Channel Depth	Wetland Size (Square Feet)	Wetland Size (Acres)	Associated Water Resource
Stream							
S-J71	Ephemeral	2.5	0.0"	6.0"	-	-	S-J70

' = Feet
" = Inches

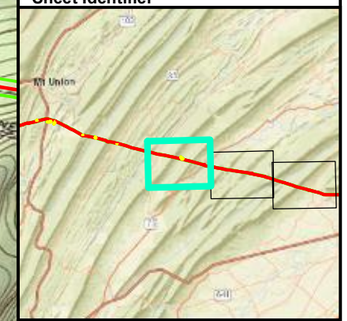
FIGURES

Start of Line
PADEP Southcentral Region
Perry County
Lat: 40° 17' 45.852" N
Lon: 77° 39' 55.875" W

Legend

- Access Road
- Alignment Centerline
- Study Area
- County Boundary

Sheet Identifier



N

0 1,000 2,000 Feet

0 300 600 Meters

USGS PROJECT LOCATION MAP
FIGURE 1-1
PENNSYLVANIA PIPELINE PROJECT
FEBRUARY 25, 2016 ALIGNMENT
SUNOCO LOGISTICS, L.P.
PERRY COUNTY, PA

TETRA TECH

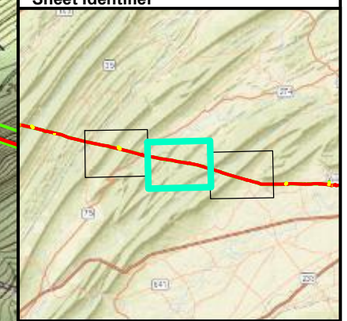
Notes:
1) Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).
2) Quadrangles being displayed are
Blain, Blairs Mills

P:\GIS\SUNOCO\MARINER EAST 2\MXD\PPP WETLANDS SC-1\PENNPIPELINE_PERRYCO_USGS.MXD 03/14/16 JN

Legend

- Access Road
- Alignment Centerline
- Study Area
- County Boundary

Sheet Identifier



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0 300 600 Meters

USGS PROJECT LOCATION MAP
FIGURE 1-2
PENNSYLVANIA PIPELINE PROJECT
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PERRY COUNTY, PA

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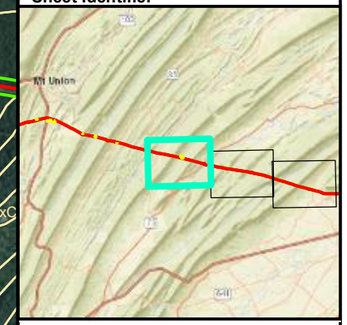
PADEP Southcentral Region
Perry County
Lat: 40° 17' 45.852" N
Lon: 77° 39' 55.875" W

Legend

- Access Road
- Alignment Centerline
- Study Area
- County Boundary
- NRCS Soils and Codes

Sheet Identifier



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NRCS SOILS MAP
FIGURE 2-1
PENNSYLVANIA PIPELINE PROJECT
FEBRUARY 25, 2016 ALIGNMENT
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PERRY COUNTY, PA

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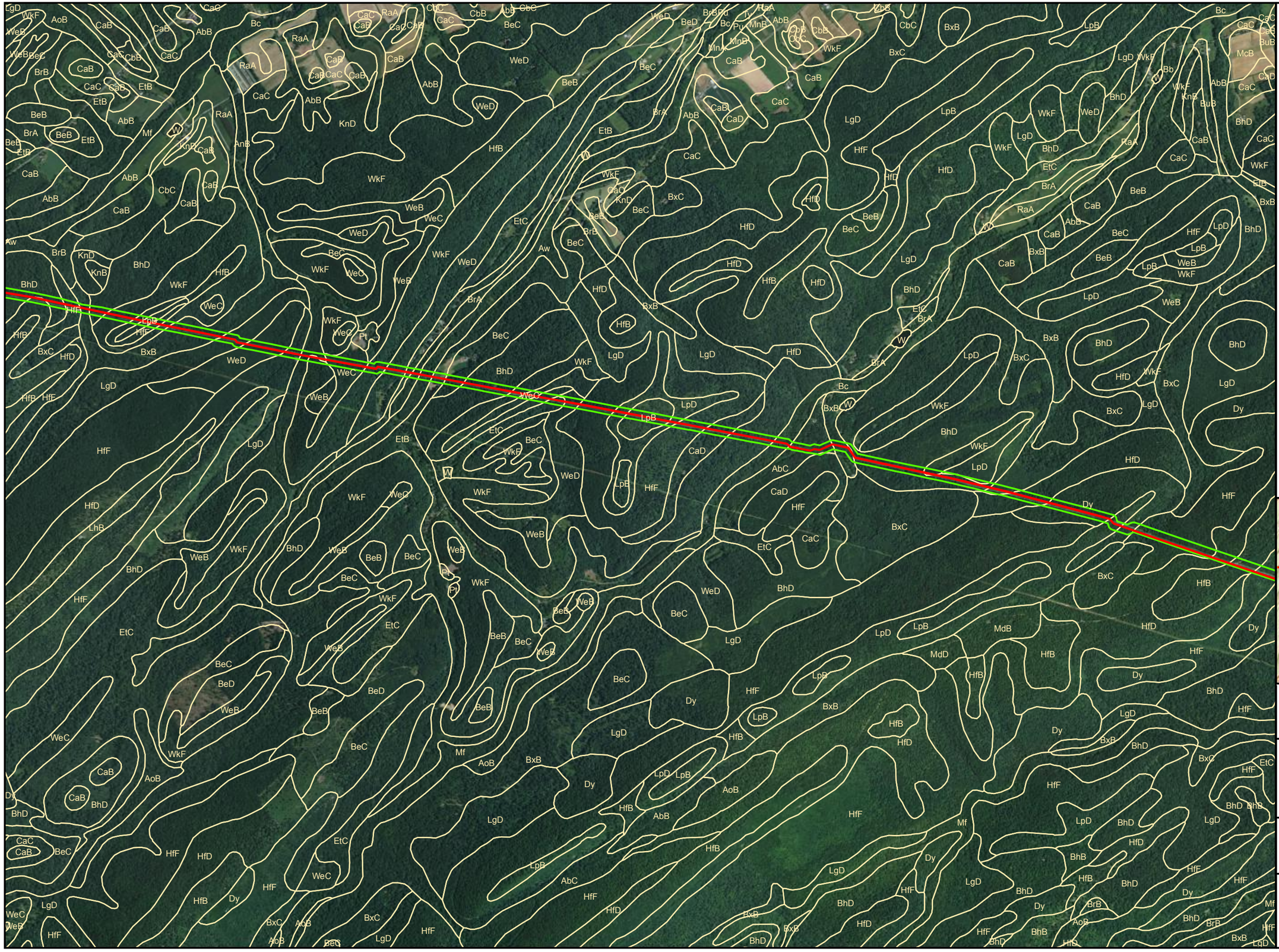

Legend

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- Alignment Centerline
- Study Area
- County Boundary
- NRCS Soils and Codes

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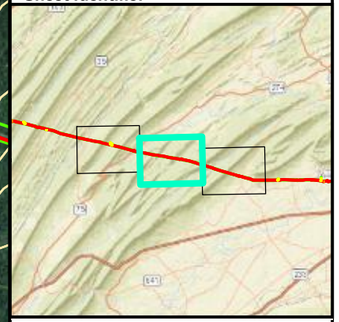

Feet
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Meters
0 300 600

NRCS SOILS MAP
FIGURE 2-2
PENNSYLVANIA PIPELINE PROJECT
FEBRUARY 25, 2016 ALIGNMENT
SUNOCO LOGISTICS, L.P.
PERRY COUNTY, PA

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- Alignment Centerline
- Study Area
- County Boundary
- NWI Wetlands and Codes

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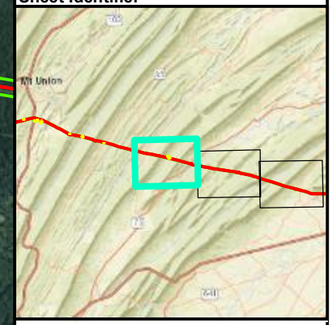

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NWI WETLANDS MAP
FIGURE 3-1
PENNSYLVANIA PIPELINE PROJECT
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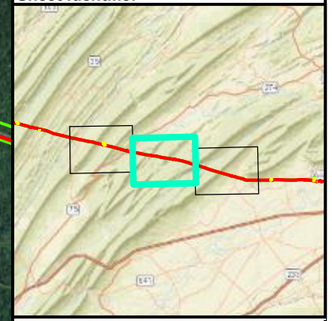

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NWI WETLANDS MAP
FIGURE 3-2
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FEBRUARY 25, 2016 ALIGNMENT
SUNOCO LOGISTICS, L.P.
PERRY COUNTY, PA

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Start of Line
PADEP Southcentral Region
Perry County
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Lon: 77° 39' 55.875" W

Page 1

Legend

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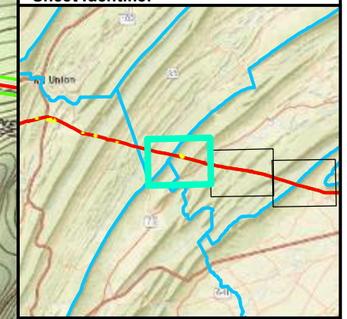
- Alignment Centerline
- Study Area
- County Boundary
- Map Book Index

Sheet Identifier



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0 300 600 Meters

INDEX MAP
FIGURE 4-INDEX-1
PENNSYLVANIA PIPELINE PROJECT
FEBRUARY 25, 2016, ALIGNMENT
SUNOCO LOGISTICS, L.P.
PERRY COUNTY, PA

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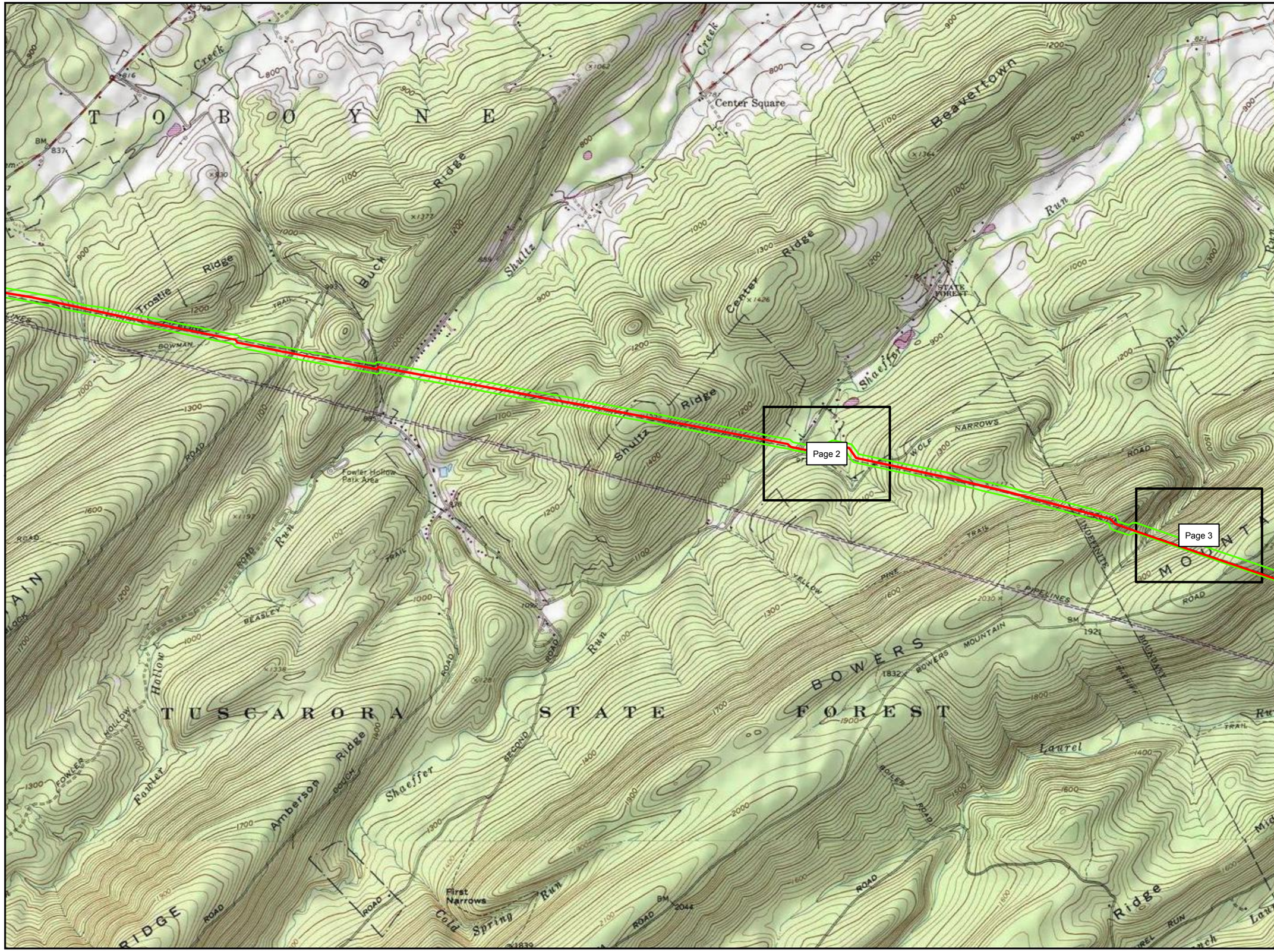

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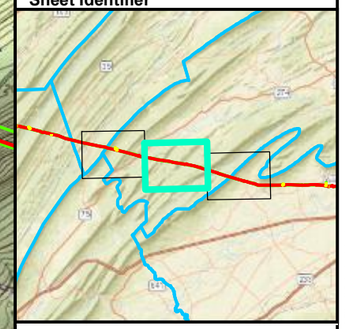
- Alignment Centerline
- Study Area
- County Boundary
- Map Book Index

Sheet Identifier



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INDEX MAP
FIGURE 4-INDEX-2
PENNSYLVANIA PIPELINE PROJECT
FEBRUARY 25, 2016, ALIGNMENT
SUNOCO LOGISTICS, L.P.
PERRY COUNTY, PA

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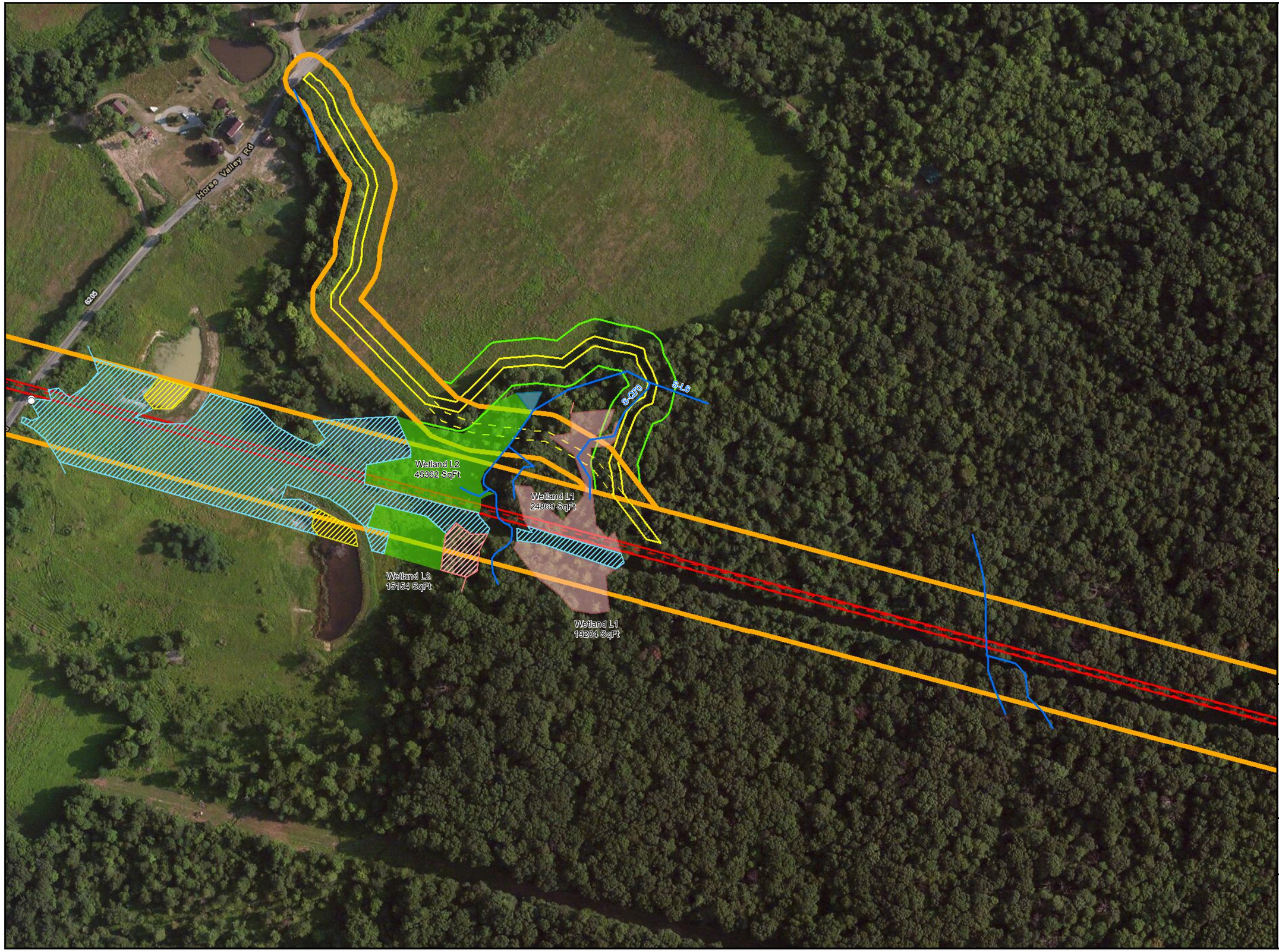

Legend

- Culvert
- Sample Location
- Photo Location
- Drainage Feature
- Stream

Wetland
- PEM
- PFO
- PSS
- PuB

New Wetland
- PEM
- PFO
- PSS
- PuB
- Access Road
- Alignment Centerline
- Study Area
- Access Road (8/2/15)
- Alignment Centerline (8/2/15)
- Study Area (8/2/15)

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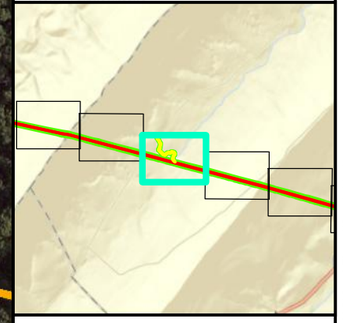

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Feet
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Meters
0 30.45 60.9

ADDENDUM WETLANDS DETAIL MAP
FIGURE 4-1
PENNSYLVANIA PIPELINE PROJECT
FEBRUARY 25, 2016 ALIGNMENT
SUNOCO LOGISTICS, L.P.
PERRY COUNTY, PA

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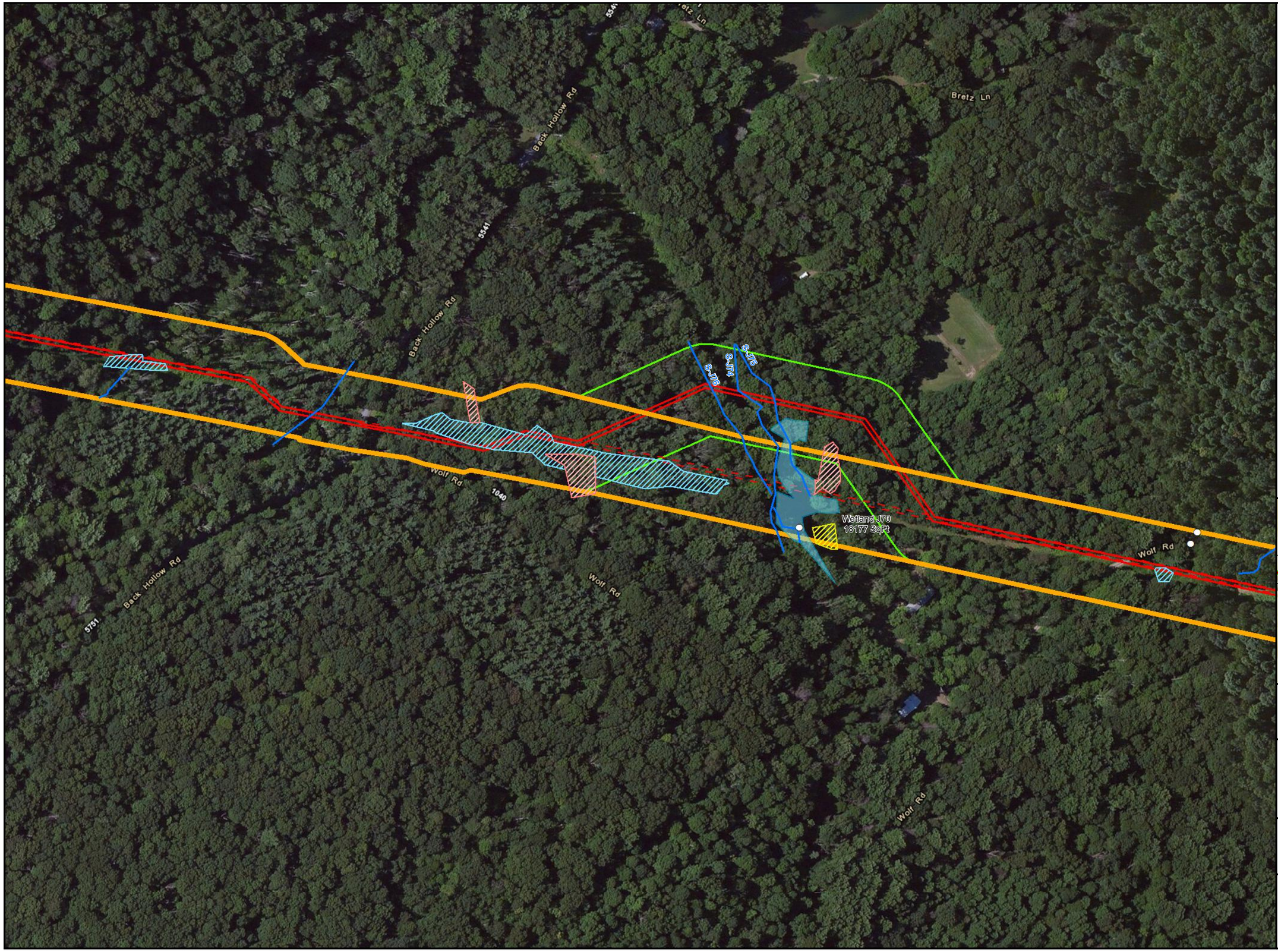

Legend

- Culvert
- Sample Location
- Photo Location
- Drainage Feature
- Stream

Wetland
- PEM
- PFO
- PSS
- PuB

New Wetland
- PEM
- PFO
- PSS
- PuB
- Access Road
- Alignment Centerline
- Study Area
- Access Road (8/2/15)
- Alignment Centerline (8/2/15)
- Study Area (8/2/15)

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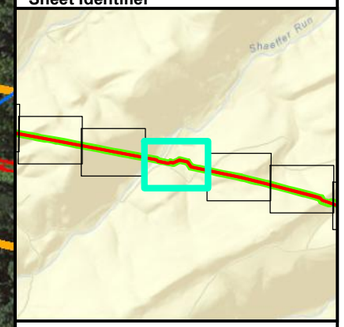

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0 100 200 Feet

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ADDENDUM WETLANDS DETAIL MAP
FIGURE 4-2
PENNSYLVANIA PIPELINE PROJECT
FEBRUARY 25, 2016 ALIGNMENT
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PERRY COUNTY, PA

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Legend

- Culvert
- Sample Location
- Photo Location
- Drainage Feature
- Stream

Wetland
- PEM
- PFO
- PSS
- PuB

New Wetland
- PEM
- PFO
- PSS
- PuB
- Access Road
- Alignment Centerline
- Study Area
- Access Road (8/2/15)
- Alignment Centerline (8/2/15)
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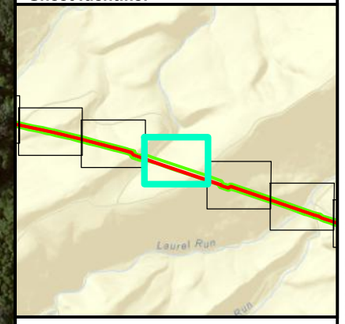

Feet
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Meters
0 30.45 60.9

ADDENDUM WETLANDS DETAIL MAP
FIGURE 4-3
PENNSYLVANIA PIPELINE PROJECT
FEBRUARY 25, 2016 ALIGNMENT
SUNOCO LOGISTICS, L.P.
PERRY COUNTY, PA

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APPENDIX A
STREAM DATA SHEETS

Tetra Tech Stream Data Sheet

Surveyors: A. Grech, A. Stott Date: 05/13/2014 Resource ID Number: S-J71
Project: PPP State: PA County: Perry
Photo Number (s): 1 Canopy Cover: 20 % Location: 40.268449, -77.515146

Flow Direction: SE **Bank Width:** 2.5 Feet **Water Width:** 0 Feet
High Water Depth: 5 Inches **Water Depth:** 0.00 Inches **Turbidity:** None
Flow Stage: No Flow

Flow Regime: [ ] Perennial [ ] Intermittent [✔] Ephemeral [ ] Flowing Ditch [ ] Dry/Stagnant Ditch

Sinuosity:
[✔] Low
[ ] Medium
[ ] High

Features:
[ ] Riffles [ ] Sand/Mud Bar [ ] Run/Glide
[ ] Pools [ ] Gravel Bar [ ] Braided
[ ] Rapids [ ] Aquatic Vegetation [✔] Other Dry channel

Substrate:
[ ] Bedrock ___%
[✔] Boulder 80 %
[✔] Cobble/Gravel 10 %
[ ] Sand ___%
[ ] Silt/Clay ___%
[✔] Organic 10 %

Bank Substrate:
Height: Left 6" Right 6"

	Left	Right
Bedrock	[ ]	[ ]
Boulder	[✔]	[✔]
Gravel	[ ]	[ ]
Sand	[ ]	[ ]
Silt/Clay	[✔]	[✔]
Organic	[✔]	[✔]

Floodplain Width:

	Left	Right
<10 feet	[ ]	[ ]
<25 feet	[ ]	[ ]
<50 feet	[✔]	[✔]
<100 feet	[ ]	[ ]
>100 feet	[ ]	[ ]

Dominant Vegetation:
[✔] Forested
Species: Acer rubrum, Acer pensylvanicum
[✔] Shrub
Species: Hamamelis virginiana
[✔] Herbaceous
Species: Dryopteris sp.

Wildlife Observed/Notes:

Sketch:
See Attached Figure.

APPENDIX B
STREAM PHOTOGRAPHS

Photograph Number:	1	**Feature Name:**	S-J71	**Date:**	05/13/2014
Direction:	E, Downstream	**Flow Regime:**	Ephemeral	**Remarks:**	N/A

APPENDIX C
HYDRIC SOILS LIST

Hydric Soils List
Perry County, Pennsylvania

Map Unit Symbol	Map Unit Name	Component Name and Phase	Component Percent	Landforms
AbB	Albrights silt loam, 3 to 8 percent slopes	Shelmadine	5	drainageways
AbC	Albrights silt loam, 8 to 15 percent slopes	Brinkerton	5	hills
AnB	Andover gravelly loam, 0 to 8 percent slopes	Andover	90	mountain slopes
AoB	Andover very stony loam, 0 to 8 percent slopes	Andover, very stony	90	mountain slopes
Aw	Atkins silt loam	Atkins	85	flood plains
Aw	Atkins silt loam	Muck	2	depressions
Bb	Barbour soils	Atkins	5	flood plains
Bc	Basher soils	Holly	5	flood plains
BpB	Blairton silt loam, 3 to 8 percent slopes	Brinkerton	5	hills
BrA	Brinkerton silt loam, 0 to 3 percent slopes	Brinkerton	80	depressions
BrA	Brinkerton silt loam, 0 to 3 percent slopes	Atkins	6	flood plains
BrB	Brinkerton silt loam, 3 to 8 percent slopes	Brinkerton	75	depressions

BrB	Brinkerton silt loam, 3 to 8 percent slopes	Atkins	3	flood plains
BuB	Buchanan gravelly loam, 3 to 8 percent slopes	Andover	10	depressions
BuC	Buchanan gravelly loam, 8 to 15 percent slopes	Shelmadine	5	drainageways
BxB	Buchanan very stony loam, 0 to 8 percent slopes	Andover, very stony	10	mountain slopes
BxC	Buchanan very stony loam, 8 to 25 percent slopes	Andover	5	mountain slopes
EtB	Ernest silt loam, 3 to 8 percent slopes	Brinkerton	5	depressions
EtB	Ernest silt loam, 3 to 8 percent slopes	Atkins	2	flood plains
EtC	Ernest silt loam, 8 to 15 percent slopes	Brinkerton	5	depressions
EvA	Evendale cherty silt loam, 0 to 3 percent slopes	Brinkerton, poorly drained areas	15	hills
EvB	Evendale cherty silt loam, 3 to 8 percent slopes	Shelmadine	10	drainageways
HuA	Huntington silt loam, 0 to 5 percent slopes	Atkins	5	flood plains
KnB	Klinesville very shaly silt loam, 3 to 8 percent slopes	Croton	1	depressions
KnC	Klinesville very shaly silt loam, 8 to 15 percent slopes	Croton	1	depressions
KnD	Klinesville very shaly silt loam, 15 to 25 percent slopes	Croton	1	depressions
KrA	Kreamer cherty silt loam, 0 to 3 percent slopes	Thorndale	10	draws
KrB	Kreamer cherty silt loam, 3 to 8 percent slopes	Shelmadine	5	drainageways
KrC	Kreamer cherty silt loam, 8 to 15 percent slopes	Shelmadine	3	drainageways

Ls	Lindside silt loam	Melvin	5	flood plains
Me	Melvin silt loam	Melvin	85	flood plains
Mf	Middlebury soils	Holly	5	flood plains
MnA	Monongahela silt loam, 0 to 3 percent slopes	Holly	5	flood plains
MnB	Monongahela silt loam, 3 to 8 percent slopes	Holly	3	flood plains
MnC	Monongahela silt loam, 8 to 15 percent slopes	Purdy	2	depressions
MuA	Murrill channery loam, 0 to 3 percent slopes	Andover	3	depressions
MuB	Murrill channery loam, 3 to 8 percent slopes	Andover	3	depressions
MuC	Murrill channery loam, 8 to 15 percent slopes	Andover	2	depressions
Pe	Penlaw silt loam	Melvin	5	flood plains
Pt	Pits and quarries	Ponded areas	1	depressions
Pu	Purdy silt loam	Purdy	85	terraces
RaA	Raritan silt loam, 0 to 5 percent slopes	Lamington	5	terraces
Tg	Tioga soils	Atkins	5	flood plains
Ty	Tyler silt loam	Purdy	5	depressions
Modified from Hydric Soils of the United States (NRCS 2014)				

APPENDIX D
RESUMES

ANDREW J. GRECH
WETLAND ENVIRONMENTAL SCIENTIST III
PITTSBURGH, PA

EDUCATION: **B.T. Wildlife Management, SUNY Cobleskill, 2011**

CERTIFICATIONS/ REGISTRATIONS: **Certified Wetland Assessment Delineator, NY, 2009**

TRAINING: **Sedges, Grasses, and Rushes ID, Rutgers University, 2012**
Wetland Hydrology, Rutgers University, 2012

EXPERIENCE SUMMARY:

Mr. Andrew Grech has five years of professional experience in wetland delineation, permitting, fisheries and wildlife, and stream assessments and classification in Pennsylvania, New York, and Ohio. Mr. Grech has conducted hundreds of wetland delineations, stream evaluations as well as conducted and produced habitat assessments, and post monitoring impact statements and assessments on over one hundred and fifty miles of proposed natural gas pipeline, and twenty proposed well pad sites. He has extensive knowledge in watercourse classification and assessment including the Rosgen method. Mr. Grech's educational background is in Wildlife Management with a minor focus in Fisheries & Aquaculture.

PROJECT EXPERIENCE:

Wetland & Watercourse Biologist; Chesapeake Energy; Bradford, Wyoming, & Susquehanna Counties, PA; March 2012 to March 2013. Responsible for conducting wetland delineations for proposed pipe line routes and reroutes. Performed PA Rapid Assessments, stream evaluation, and preparation of wetland report for 40 miles of pipeline in Northeastern Pennsylvania.

Wetland & Watercourse Biologist; Chesapeake Energy; Carroll, Jefferson County, OH; June-November 2012. Responsible for conducting wetland delineations for proposed pipe line routes and reroutes. Performed ORAM and QHEI Assessments, and preparation of wetland report for 50 miles of pipeline in Eastern Ohio.

Wetland & Watercourse Biologist; Shell Oil; Mckean & Bradford Counties, PA; March 2012 to March 2013. Responsible for conducting wetland delineations for proposed pipe line routes and reroutes. Performed PA Rapid Assessments, stream evaluation, and preparation of wetland report for 40 miles of pipeline in Northeast/central Pennsylvania.

Wetland & Watercourse Biologist; Chesapeake Energy; Bradford, Wyoming, & Susquehanna Counties, PA; November 2012 to March 2013. Responsible for conducting post construction habitat monitoring and assessment of constructed natural gas pipelines in Northeastern Pennsylvania.

Wetland & Watercourse Biologist; Southwest Energy; Wayne, Monroe, & Pike Counties, PA; November 2012 to March 2013. Responsible for conducting wetland delineations for proposed well pads. Performed PA Rapid Assessments, stream evaluation, and preparation of wetland report for 15 proposed well pads in Northeastern Pennsylvania.

Wetland & Watercourse Biologist; Markwest Energy; Allegheny, Butler, & Washington Counties, PA; August 2013 to October 2013. Responsible for conducting wetland delineations for proposed pipe line routes and reroutes. Performed PA Rapid Assessments, stream evaluation, and preparation of wetland report for 20 miles of pipeline in Southwest Pennsylvania.

Wetland & Watercourse Biologist; REX Energy; Butler County, PA; September 2013. Responsible for conducting wetland delineations for proposed water withdrawal sites along Connoquenessing Creek and Glade Run. Performed PA Rapid Assessments, stream evaluation, and preparation of wetland reports for 2 water withdrawal sites in Southwest Pennsylvania.

Environmental Mgmt. Systems:

- Angler Surveys and Census for the Ice Fishery of Otsego Lake, NYDEC September - December 2007
- Pond surveys (water quality, fish identification, mapping) for Schoharie County residents January – May 2008
- Sonic and radio tracking, research crew member on 24 hour tracking samples. Otsego Lake N.Y. Through SUNY Cobleskill from September – December 2008
- Reptile and Amphibian trapping survey. SUNY Cobleskill from March – May 2009
- Wetland delineation, Field work in various wetlands thoughout the Cobleskill N.Y. area from September- December 2009
- Electrofishing Survey, Member of boat electro fishing crew; scapper, fish ID, Gill net retrieval, and fish measuring for night as well as day sampling of Otsego Lake N.Y. Through Biological Field Station from January – May 2010
- Waterfowl habitat survey, Activity budget survey, Nest Predation survey, various research projects around Cobleskill N.Y. September - December 2010.

Sampling:

Fisheries Technician; SUNY Cobleskill; Cobleskill, NY; September 2008. Responsible for preforming a fisheries survey and rescue for the N.Y. State power authority, on Gilboa reservoir. Sampled and collected fishes to be transported to mitigation location.

Fisheries Technician; SUNY Cobleskill; Cobleskill, NY; on and off from September 2007-December 2010. Responsible for collecting state fisheries data on several N.Y. state watersheds. Field sampling including haul seines, electro-shocking, gill nets, fyke nets, Responsible for the use of MS-222 for anesthetizing fishes during the study.

Wildlife Technician; SUNY Cobleskill; Cobleskill, NY; June 2010. Conducted local herpetology surveys on both salamander and frog habitats locally in and around Cobleskill area. Used amphibian traps to capture live specimens and recorded population densities and species diversity indexes for each location. Specifically focusing on human impacts, and habitat alterations and the population and diversity impacts associated with the disturbance.

Other:

New York State DEC; Trap-netted birds of prey, Richmondville, NY
SUNY Cobleskill; Electro-fishing/sonic tagging Walleye, Otsego Lake, NY
Otsego Lake Biological Field Station; Trap-netting/hydro-acoustic survey of Alewife, Otsego Lake, NY
SUNY Cobleskill; Electro-fished lake at night for a "mark and re-capture study," Otsego Lake, NY
New York State DEC; Bat count surveys, Howe Caverns, Cobleskill, NY
Peabody Wildlife Management Area; Trapping/radio-telemetry of Bob-white Quail, Drakesboro, KY
Colorado Parks and Wildlife Commission; Trapped and collared Columbian Sharp-tailed Grouse, W. CO
Colorado Parks and Wildlife Commission; Performed radio-telemetry and observation counts of Bighorn Sheep, W. CO

CHRONOLOGICAL WORK HISTORY:

Wetland Environmental Scientist III; Tetra Tech, Inc.; Pittsburgh, PA, August 2013- Present

Environmental technician/Range Manager, XH Angus Ranch; Saratoga, WY March 2013- August 2013

Wetland & Watercourse Biologist; Hanover Engineering & Associates; Towanda, PA, March 2012 - March 2013

Environmental Technician, Mount Agamenticus, York, ME, May 2011-March 2012

Seasonal Park Ranger, US Army Corps of Engineers, Thomaston, CT, May- September 2009 & 2010

PROFESSIONAL AFFILIATIONS:

American Wildlife Society

AMANDA M. STOTT
WILDLIFE AND WETLAND SCIENTIST/ENVIRONMENTAL SCIENTIST I
PITTSBURGH, PA

EDUCATION: B.T. Wildlife Management, SUNY Cobleskill, 2011
A.A.S General Studies, Liberal Arts and Sciences Herkimer C.C.C., 2009

CERTIFICATIONS/ REGISTRATIONS: Certified Wetland Assessment Delineator, NY, 2010

EXPERIENCE SUMMARY:

Ms. Amanda Stott has two years' experience as an environmental scientist/ wildlife biologist with a background in wildlife and fisheries resource management. Her education background includes studies in chemistry, biology, statistics, botany, terrestrial ecology, natural resource management, conservation ecology, environmental policy and regulatory compliance, wetland ecosystems, wetland assessment and delineation, geographic information systems and other environmental related fields. Amanda has performed numerous wildlife and vegetation surveys, stream assessments habitat assessments and related report generation. As an Environmental Scientist, Amanda has had the opportunity of working fulltime on wetland delineations under Environmental Wetland Specialists, primarily for Marcellus shale projects.

RELEVANT PROJECT EXPERIENCE:

Environmental Scientist I; MarkWest Liberty Midstream & Resources, LLC; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects; Pennsylvania; May 2013 to present. Responsible for performing and assisting with wetland delineations for various proposed natural gas pipeline projects in southwestern Pennsylvania. Specific tasks included field survey, report preparation, and wetland functional assessments.

Sampling:

Wildlife Technician; SUNY Cobleskill; Cobleskill, NY; June 2010. Conducted local herpetology surveys on both salamander and frog habitats locally in and around Cobleskill area. Used amphibian traps to capture live specimens and recorded population densities and species diversity indexes for each location. Specifically focusing on human impacts, and habitat alterations and the population and diversity impacts associated with the disturbance.

Wildlife Research Technician, University of Tennessee; Drakesboro, KY; August 2012. Conducted vegetation surveys to identify nesting habits of Northern Bob-White Quail. Using a plot-less sampling method and random point generations near known nesting sites. Focusing on generating suitable habit for nesting on reclaimed coal-mine area.

Wildlife Research Technician, Colorado Parks and Wildlife; Hayden, CO; August 2013.
Aid in annual report of flora growth by conducting vegetation surveys on private and public lands to regenerate sage-brush nesting areas for Sage Grouse populations. Use of line-point method and random point generations.

Environmental Mgmt. Systems:

- Pond surveys (water quality, fish identification, mapping) for Schoharie County residents January – May 2009
- Angler Surveys and Census for the Ice Fishery of Otsego Lake, NYDEC December-February 2010
- Wetland delineation, Field work in various wetlands throughout the Cobleskill N.Y. area from September- December 2010
- Waterfowl habitat survey, Activity budget survey, Nest Predation survey, various research projects around Cobleskill N.Y. September - December 2010.
- Population surveys of ruffed grouse, NYDEC, trapping and banding, various study areas around Cobleskill N.Y. December 2009-January 2010.

CHRONOLOGICAL WORK HISTORY:

Wetland/Environmental Scientist I; Tetra Tech, Inc.; Pittsburgh, PA, May 2013 – Present.

Wildlife Research Technician; Colorado Parks and Wildlife; Steamboat Springs, CO April-August 2013

Wildlife Survey Technician; Western Ecosystems Inc.; Lowville, NY; July 2012-January 2013

Wildlife Research Technician; University of Tennessee; Drakesboro, KY; July-October 2011

Animal Husbandry Technician; Stonewall Boarding and Game Preserve; Esperence, NY; June 2009-April 2011

PUBLICATIONS/ARTICLES:

Morin. M.M, Stott, A.M.; "Wildlife Management Report for: Native Meadows Preserve"; New Milford, Connecticut; October 2012