

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



Prepared By:

Tetra Tech, Inc.

For

Sunoco Pipeline, LP

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March 2016

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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
LOD	Limit of Disturbance
NRCS	Natural Resources Conservation Service
NWI	National Wetlands Inventory
OBL	Obligate
PEM	Palustrine Emergent
PFO	Palustrine Forested
PA	Pennsylvania
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 Blair 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 Blair County, Pennsylvania (PA) and dated August 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 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 1-3; USGS, 2009)
- National Resource Conservation Service (NRCS) National Cooperative Soil Survey (Figures 2-1 to 2-3; NRCS, 2014)
- USFWS National Wetland Inventory (NWI) Mapping (Figures 3-1 to 3-3; 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 4-8).

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 Blair County, PA. Resumes of project personnel are included in Appendix D.

3.0 RESULTS

The field investigations did not identify any areas within Blair 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*. Additionally, three 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 4-8 illustrate the 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. A review of the NRCS Soil Survey hydric soil list for Blair County, PA is included in Appendix C. The NRCS soil survey maps are included as Figures 2-1 to 2-3. Confirmation of the soil mapping units was not performed during this site evaluation.

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

Based on field evidence and best professional judgment, it was determined that no wetlands were present within the study area. Wetland areas would have demonstrated the presence of all three wetland parameters required by the *1987 Manual* and the *USACE Regional Supplement*.

3.2 STREAM IDENTIFICATION AND EVALUATION

Based on field evidence and best professional judgment, it was determined that three streams were identified within the evaluated study area. Data sheets that detail the bank and channel characteristics, substrate composition, aquatic habitat, and hydrology were prepared for each of the streams (Appendix A).

Stream KP2

Stream KP2 (S-KP2) is an ephemeral unnamed tributary (UNT) to Blair Gap Run (Figure 4-2). The stream bank is approximately 15 feet in width. The bank height is 8 feet. The stream bed contains a cobble, gravel, sand, silt, and clay substrate. At the time of the field investigation, the stream exhibited an average water depth of 1 inch.

Stream KP1

Stream KP1 (S-KP1) is an intermittent UNT to Frankstown Branch Juniata River (Figure 4-5). The stream bank is approximately 8 feet in width. The bank height is 2 feet. The stream bed contains a

silt and clay substrate. At the time of the field investigation, the stream exhibited an average water depth of 8 inches.

Stream STV2

Stream STV2 (S-STV2) is an intermittent UNT to Robinson Run (Figure 4-5). The stream bank is approximately 3.5 feet in width. The bank height is 11 inches. The stream bed contains a cobble, gravel, sand, silt, and clay substrate. At the time of the field investigation, the stream exhibited an average water depth of 1 inch.

3.3 STREAMS WITH FLOODWAY IMPACTS OUTSIDE THE SURVEY AREA

Streams with floodway impacts that extend within the Project limit of disturbance (LOD), but are outside of the survey area, are described on Table 2 and shown on Figure(s) 4-1 to 4-8. There are two streams within Blair County with floodways that extend into the Project LOD.

4.0 CONCLUSIONS

During the field investigations in Blair County, PA, located within the Southcentral Region of the proposed Pennsylvania Pipeline Project, no areas 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).

Three streams were identified within the evaluated study area.

There are two streams within Blair County with floodways that extend into the Project LOD.

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

TABLES

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

Water Resource	Dominant Plant Community/Flow Regime	Bank Full Width (ft.)	Water Depth	Channel Depth	Wetland Size	Wetland Size	Associated Water Resource
Streams							
S-KP2	Ephemeral	15.0	1"	8'	-	-	W-BB120
S-KP1	Intermittent	8.0	8.0"	2.0'	-	-	S-BB49, W-BB60
S-STV2	Intermittent	3.5	1"	11"	-	-	W-BB99

* = See Data Sheet for Channel Depth - Right and Left Bank Measurements Differ.

' = Feet

" = Inches

Table 2
Streams with Floodway Impacts
Outside the Study Area
Pennsylvania Pipeline Project
Page 1 of 1

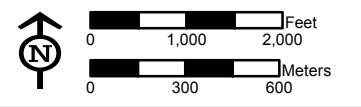
Stream ID	Flow Regime	Bank Full Width (ft.)	Water Depth (in.)	Channel Depth (ft.)
S-M65	Ephemeral	5	5	1
S-M67	Ephemeral	2	0	1

FIGURES



Start of Line PADEP
 Southcentral Region
 Blair County
 Lat: 40° 24' 31.563" N
 Lon: 78° 33' 23.363" W

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



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



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 Cresson, Hollidaysburg

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

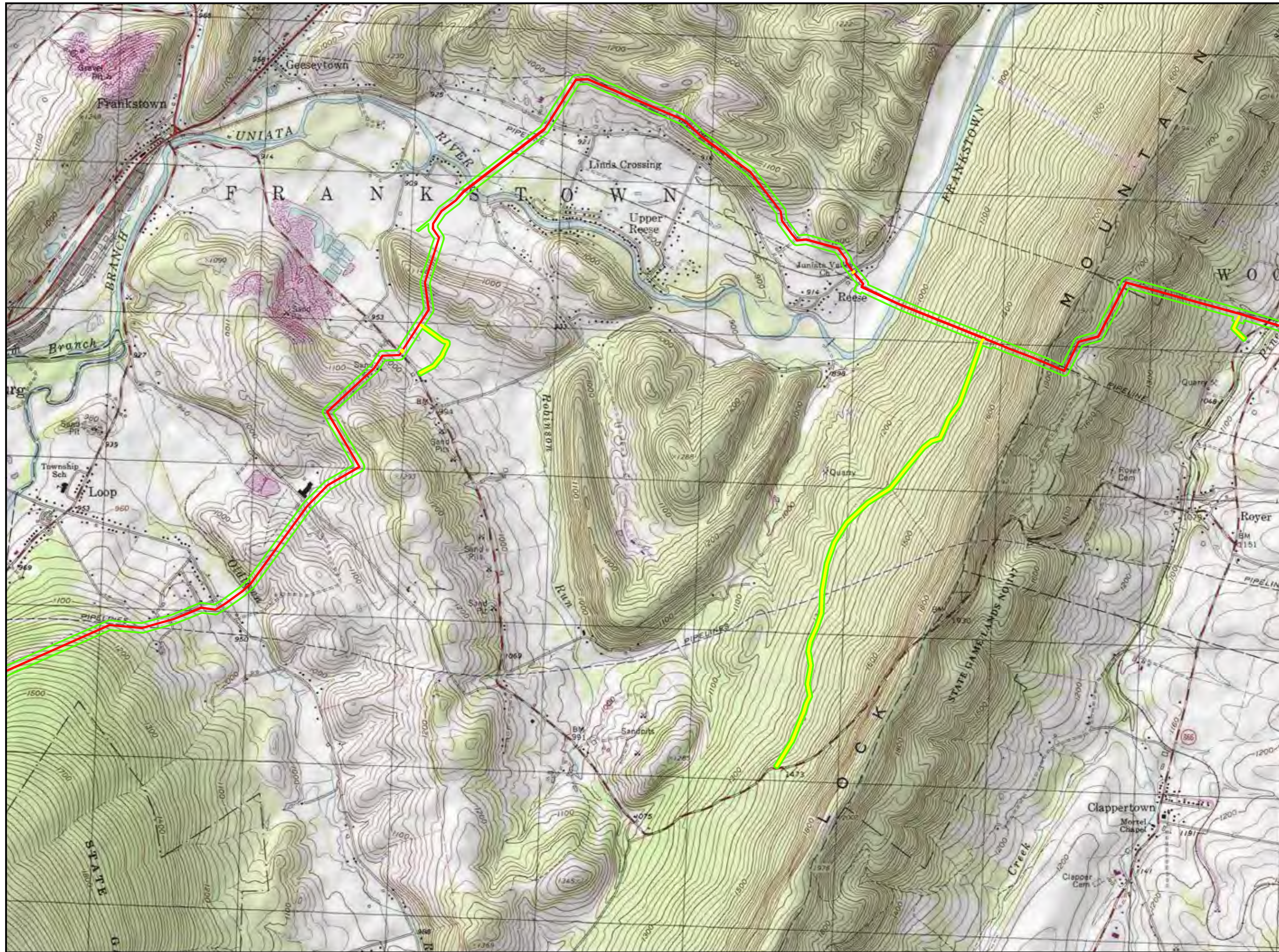
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**USGS PROJECT LOCATION MAP
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PENNSYLVANIA PIPELINE PROJECT
FEBRUARY 25, 2016 ALIGNMENT
SUNOCO LOGISTICS, L.P.
BLAIR COUNTY, PA**

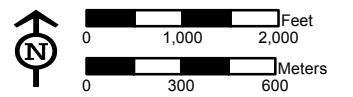


- Notes:**
- 1) Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).
 - 2) Quadrangles being displayed are Hollidaysburg



- Legend**
- Access Road
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 - County Boundary

Sheet Identifier



**USGS PROJECT LOCATION MAP
FIGURE 1-3
PENNSYLVANIA PIPELINE PROJECT
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BLAIR COUNTY, PA**



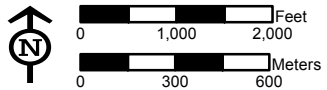
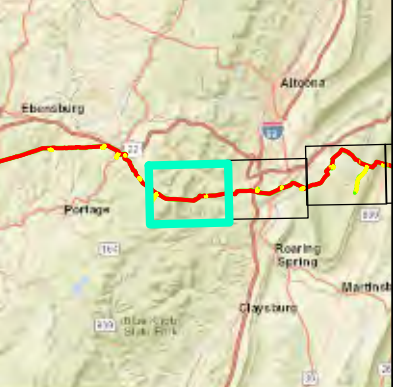
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Start of Line
 PADEP Southcentral Region
 Blair County
 Lat: 40° 24' 31.563" N
 Lon: 78° 33' 23.363" W

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

Sheet Identifier

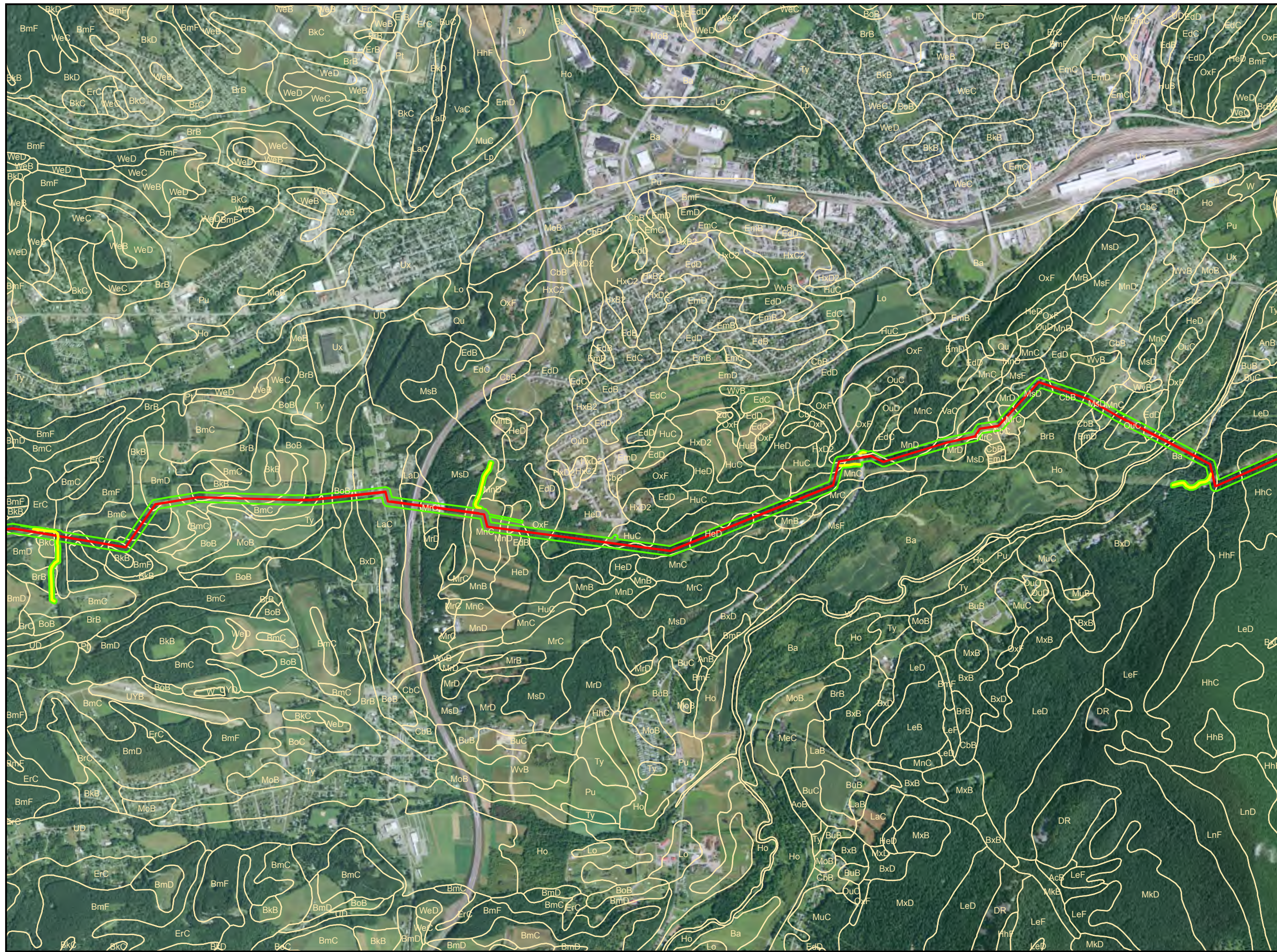


**NRCS SOILS MAP
 FIGURE 2-1
 PENNSYLVANIA PIPELINE PROJECT
 FEBRUARY 25, 2016 ALIGNMENT
 SUNOCO LOGISTICS, L.P.
 BLAIR COUNTY, PA**



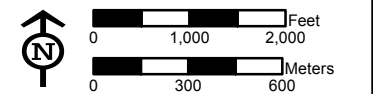
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- Legend**
- Access Road
 - Alignment Centerline
 - Study Area
 - County Boundary
 - NRCS Soils and Codes

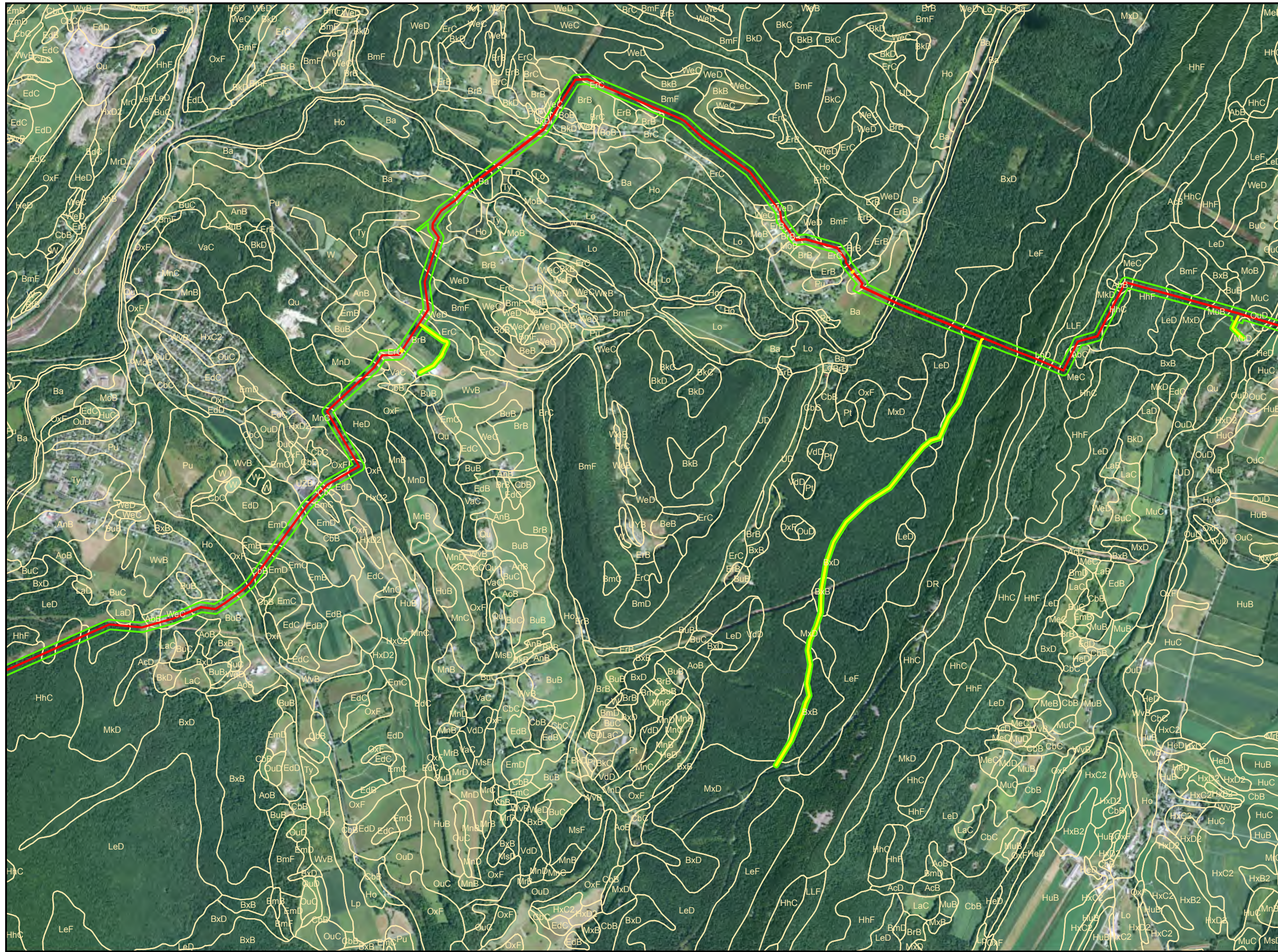
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**NRCS SOILS MAP
FIGURE 2-2
PENNSYLVANIA PIPELINE PROJECT
FEBRUARY 25, 2016 ALIGNMENT
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BLAIR COUNTY, PA**

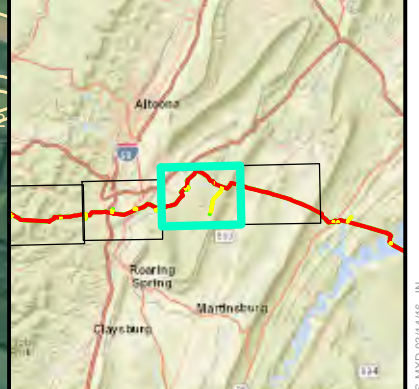


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- Legend**
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 - NRCS Soils and Codes

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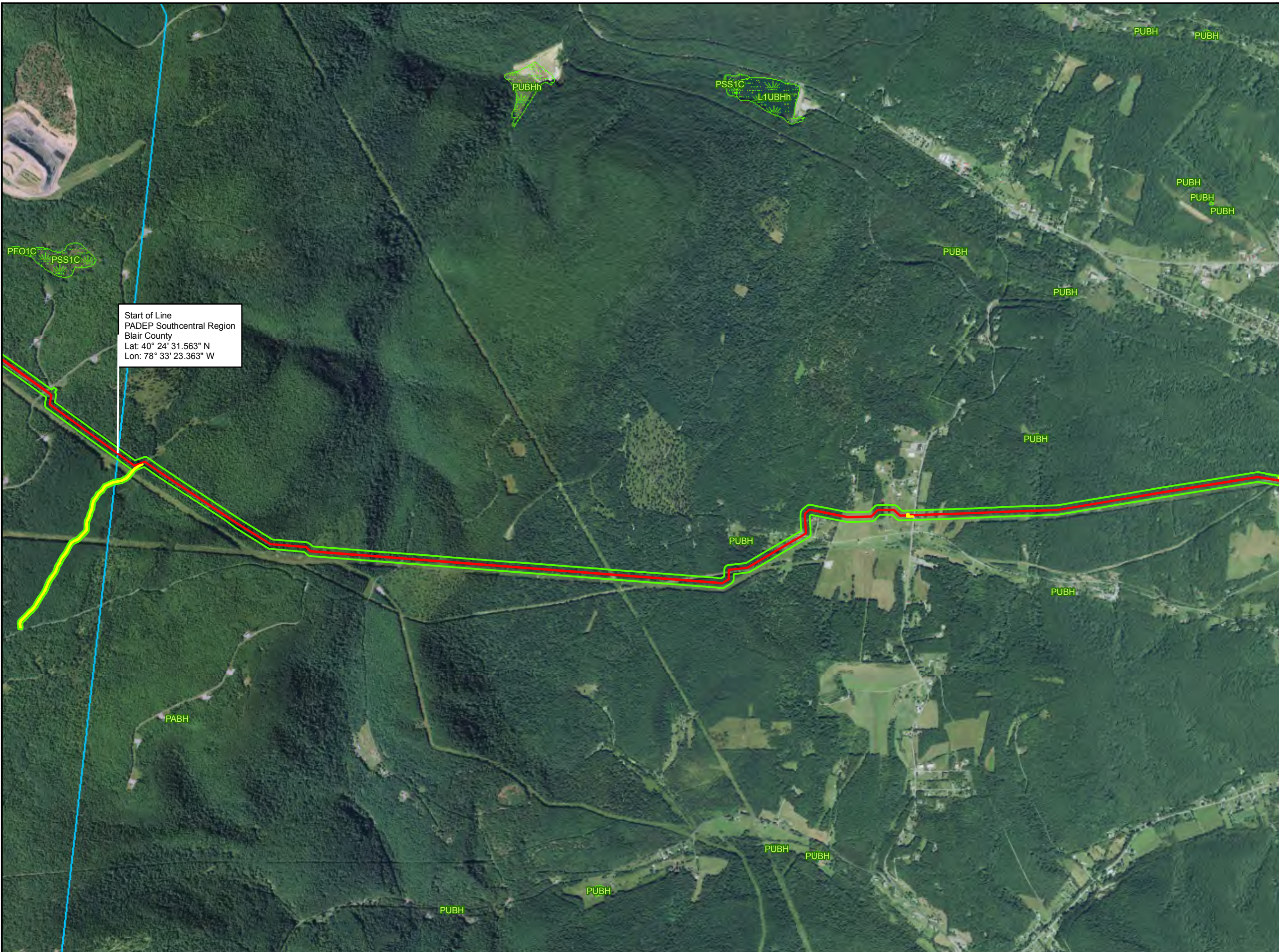


**NRCS SOILS MAP
FIGURE 2-3
PENNSYLVANIA PIPELINE PROJECT
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BLAIR COUNTY, PA**



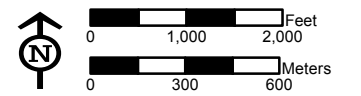
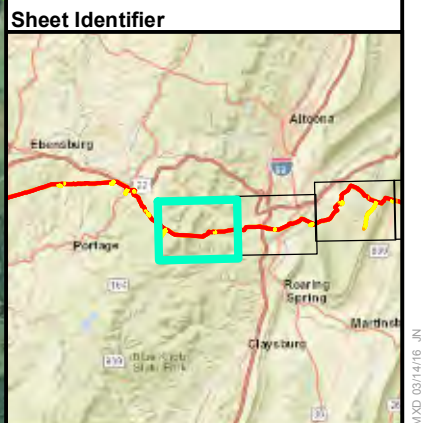
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- Legend**
- Access Road
 - Alignment Centerline
 - Study Area
 - County Boundary
 - NWI Wetlands and Codes

Start of Line
 PADEP Southcentral Region
 Blair County
 Lat: 40° 24' 31.563" N
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**NWI WETLANDS MAP
 FIGURE 3-1
 PENNSYLVANIA PIPELINE PROJECT
 FEBRUARY 25, 2016 ALIGNMENT
 SUNOCO LOGISTICS, L.P.
 BLAIR COUNTY, PA**



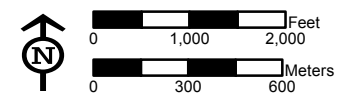
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- Legend**
- Access Road
 - Alignment Centerline
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 - County Boundary
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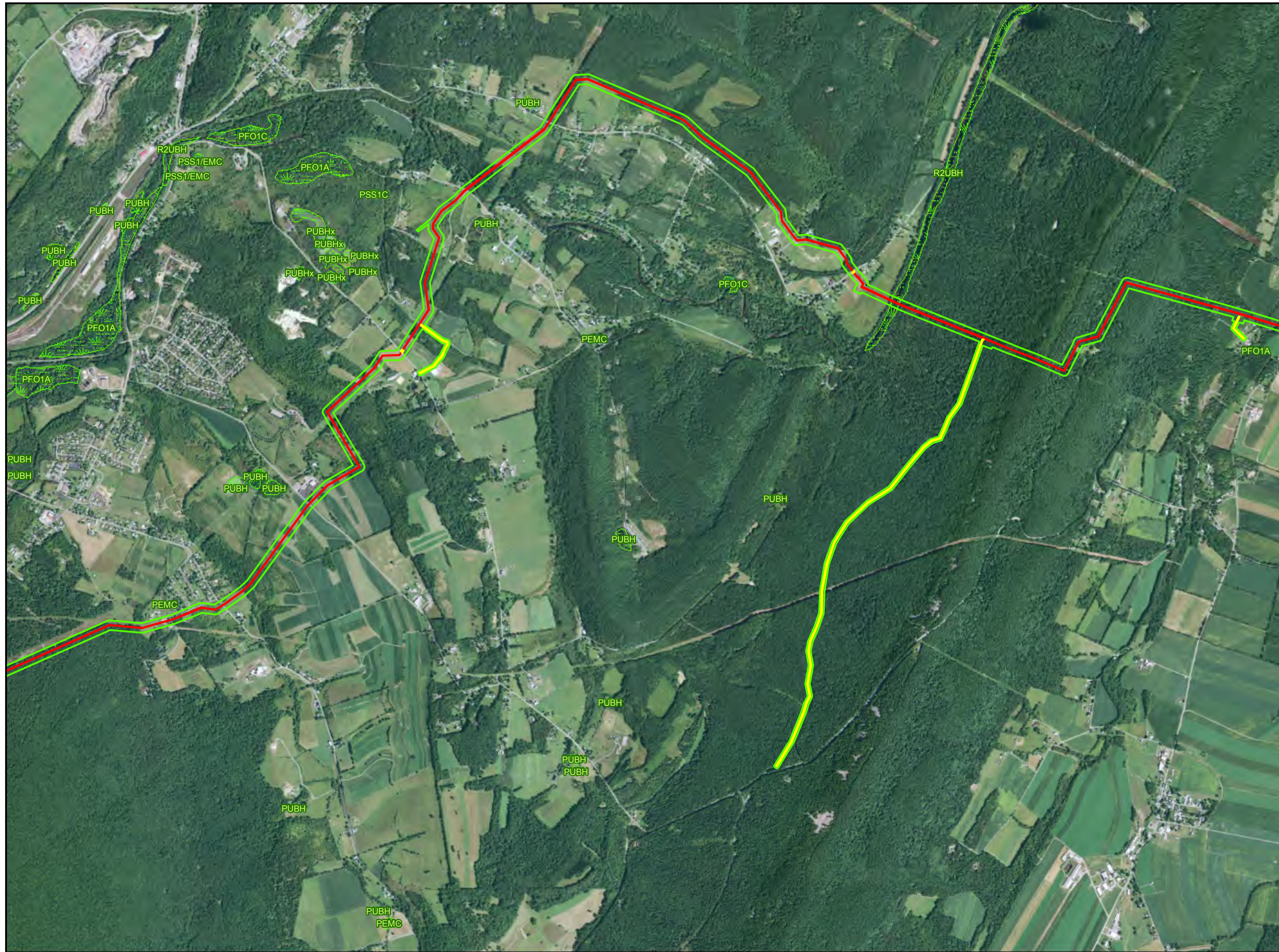
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**NWI WETLANDS MAP
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PENNSYLVANIA PIPELINE PROJECT
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BLAIR COUNTY, PA**

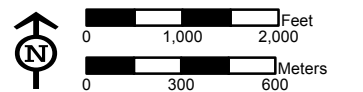
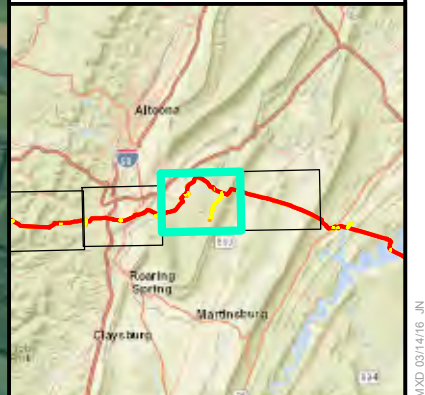


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- Access Road
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 - County Boundary
 - NWI Wetlands and Codes

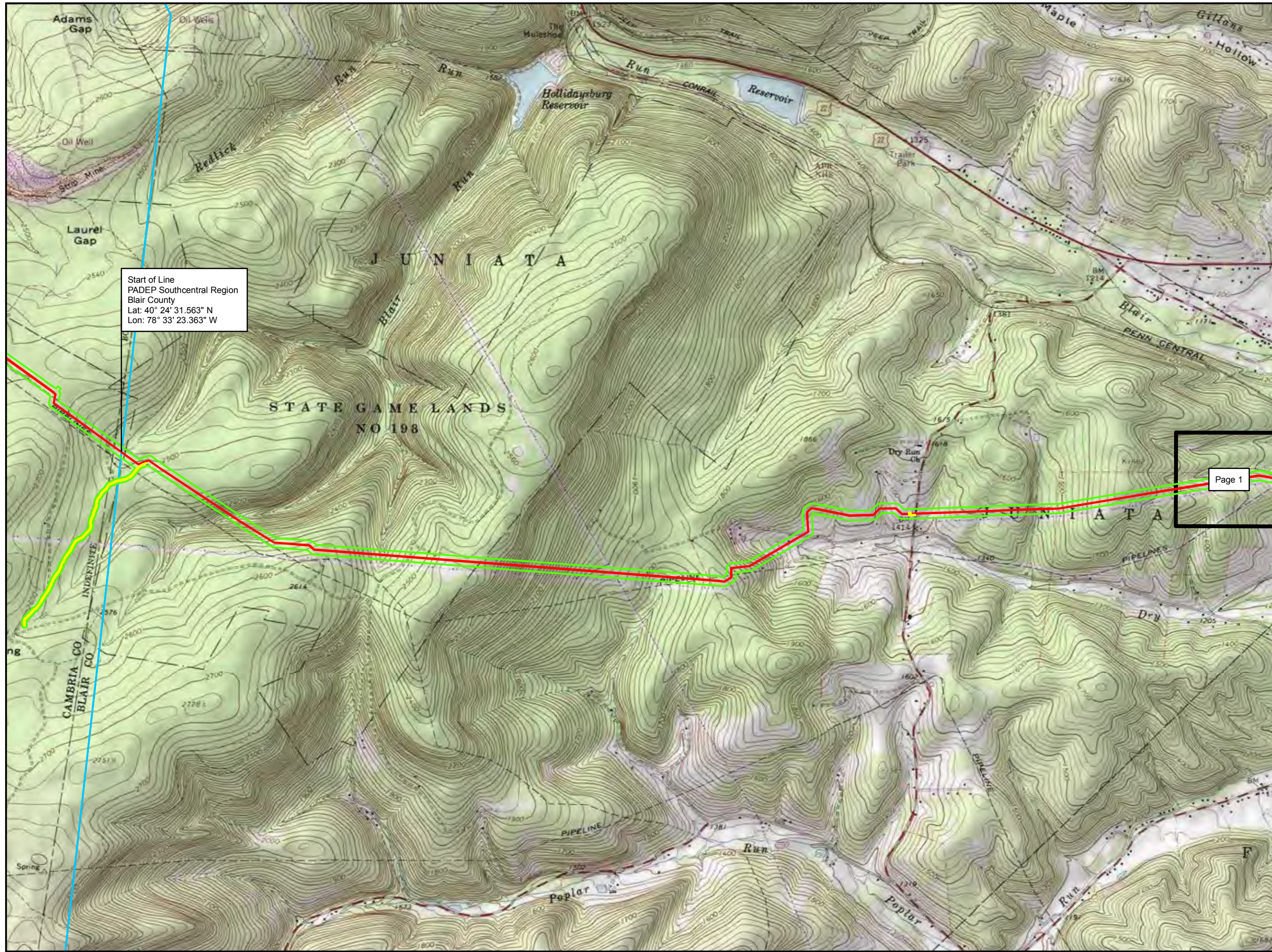
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**NWI WETLANDS MAP
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PENNSYLVANIA PIPELINE PROJECT
FEBRUARY 25, 2016 ALIGNMENT
SUNOCO LOGISTICS, L.P.
BLAIR COUNTY, PA**



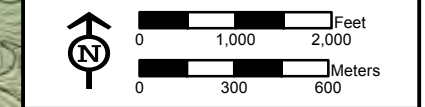
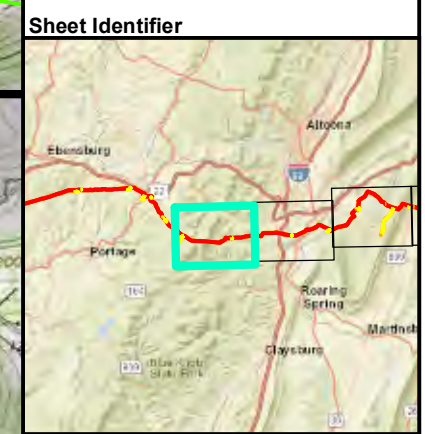
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 - Map Book Index

Page 1

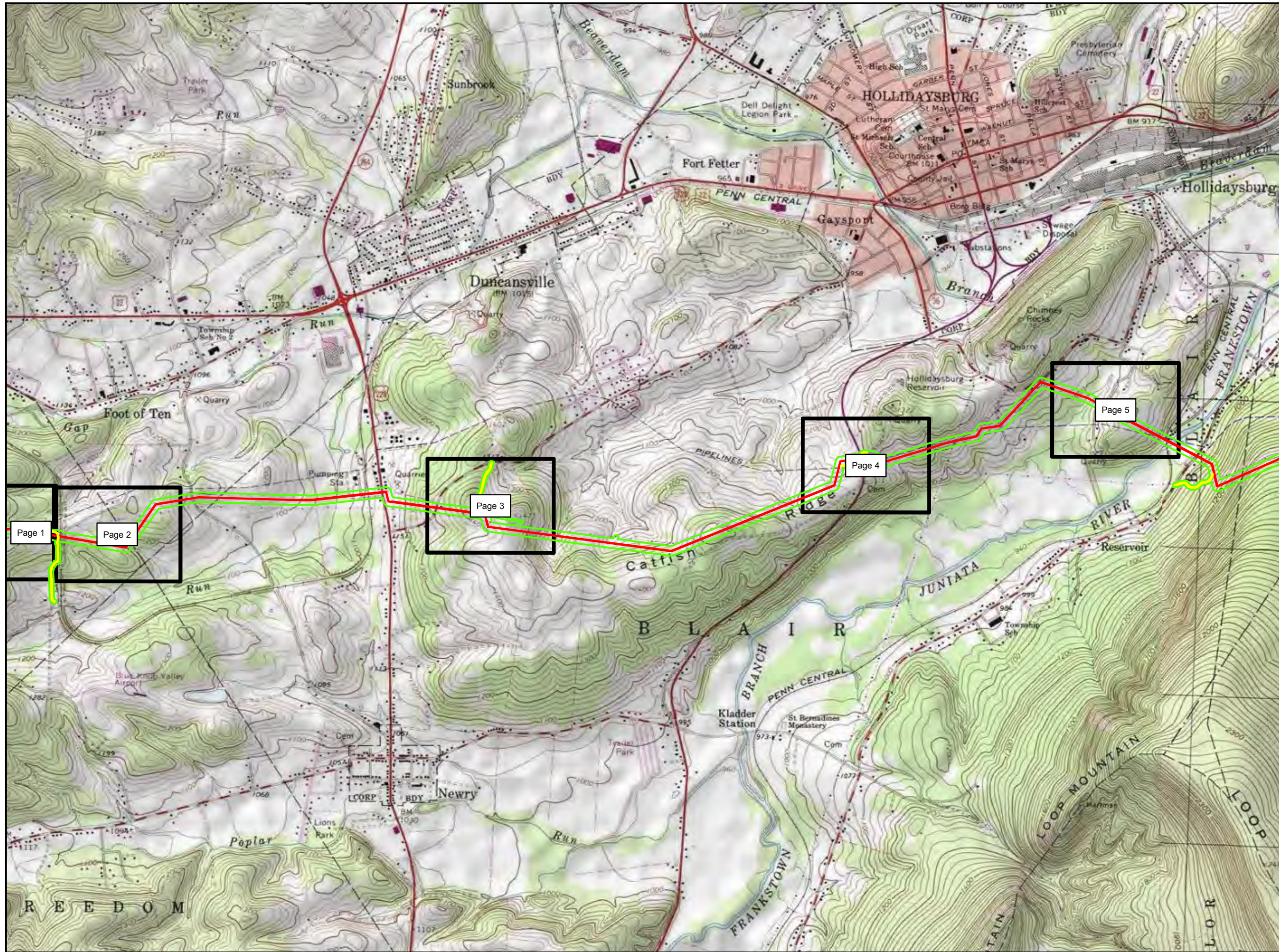


INDEX MAP
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FEBRUARY 25, 2016 ALIGNMENT
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BLAIR COUNTY, PA



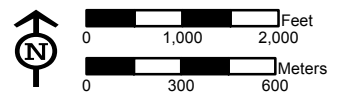
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- Legend**
- Access Road
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 - County Boundary
 - Map Book Index

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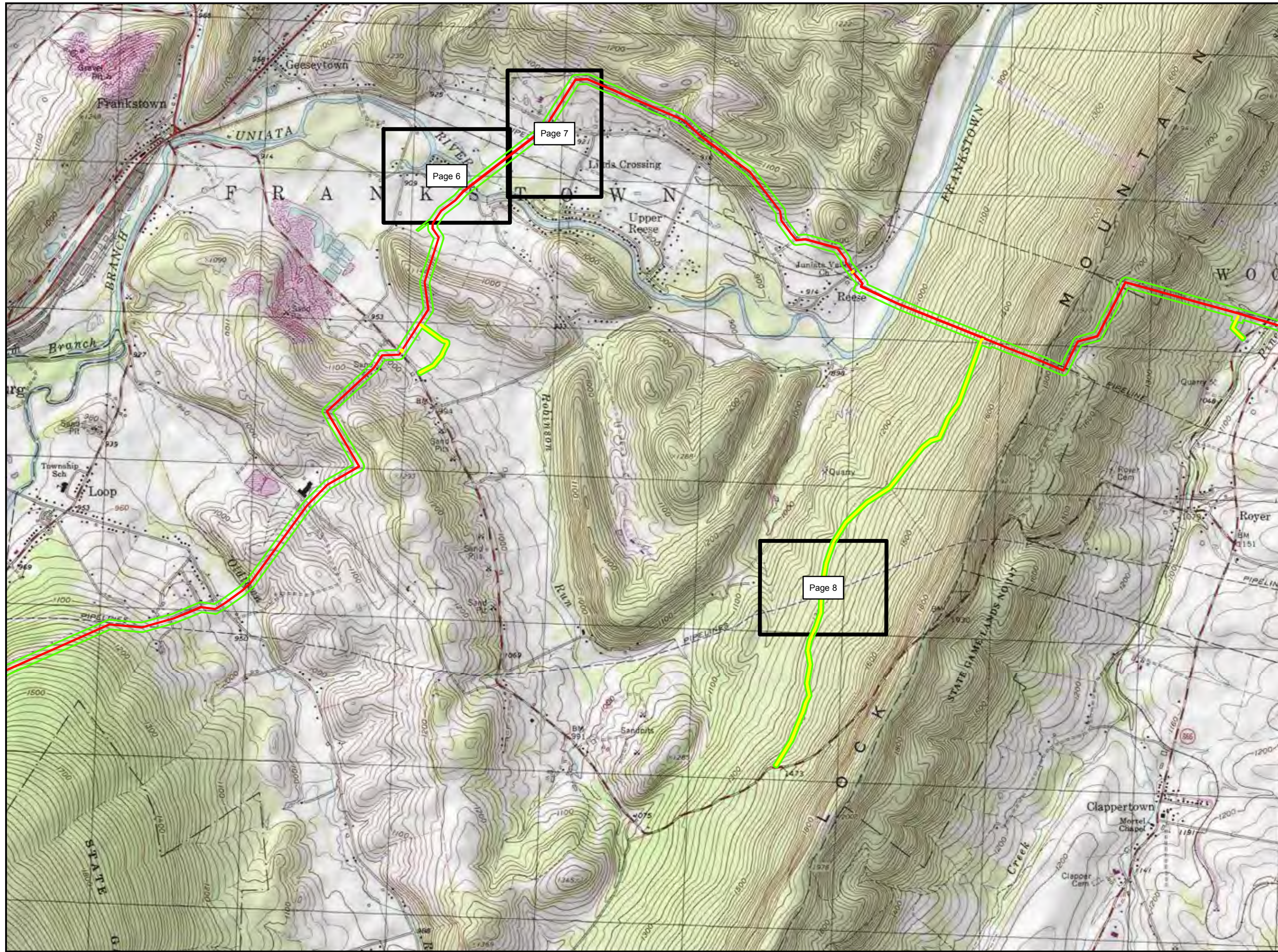


**INDEX MAP
FIGURE 4 - INDEX-2
PENNSYLVANIA PIPELINE PROJECT
FEBRUARY 25, 2016 ALIGNMENT
SUNOCO LOGISTICS, L.P.
BLAIR COUNTY, PA**



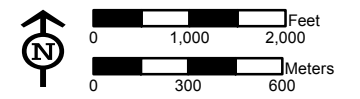
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- Legend**
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 - Alignment Centerline
 - Study Area
 - County Boundary
 - Map Book Index

Sheet Identifier

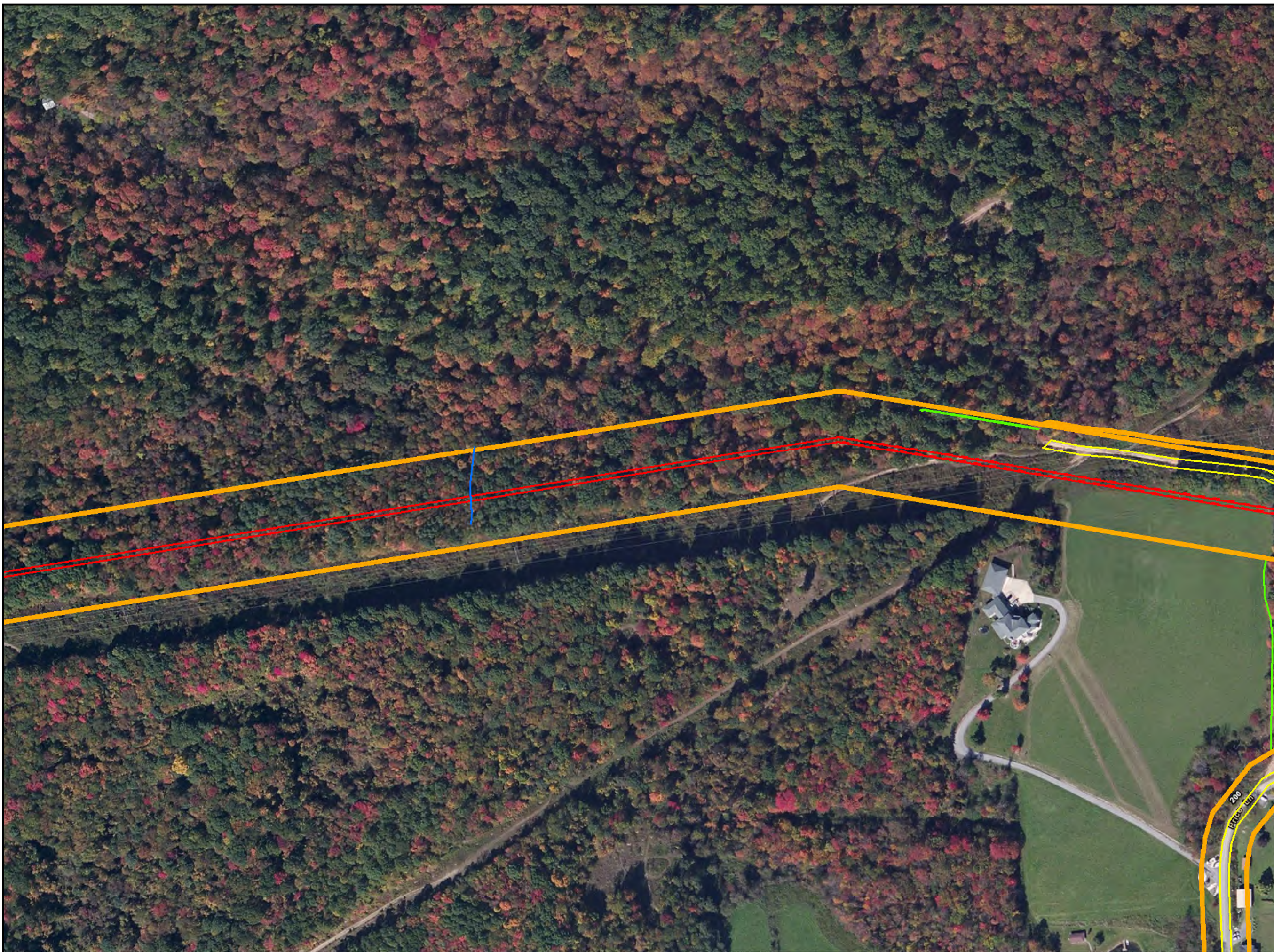


INDEX MAP
FIGURE 4 - INDEX-3
PENNSYLVANIA PIPELINE PROJECT
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Notes:
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Legend

- 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)

Sheet Identifier

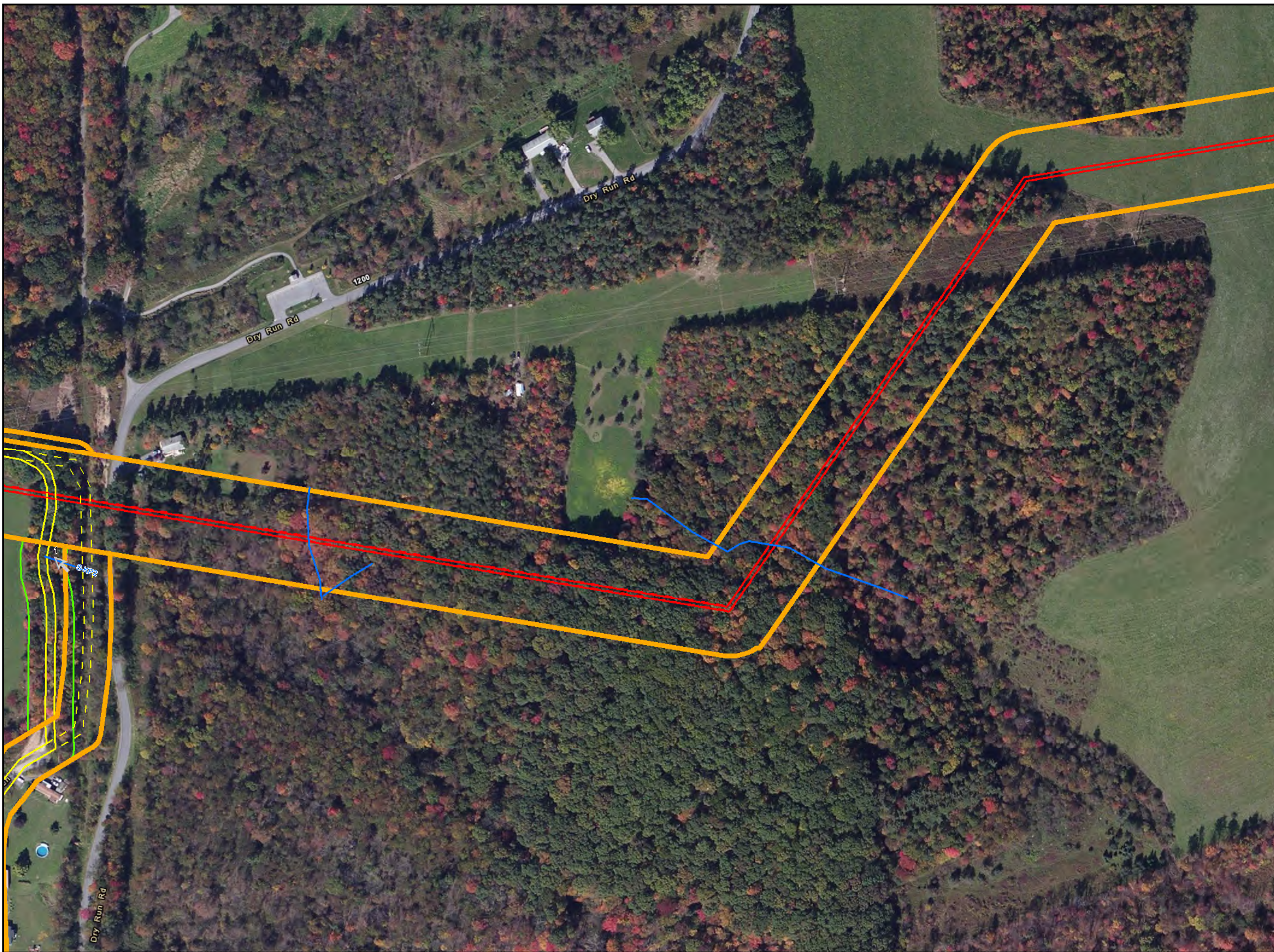
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0 30.45 60.9 Meters

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

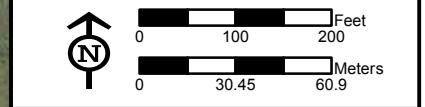
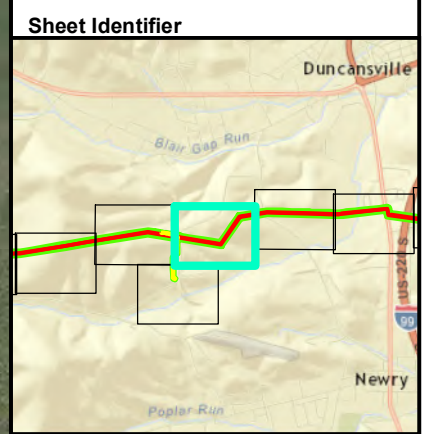


Notes:
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).
 2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.

PGH-P\GIS\SUNOCO\MARINER EAST 2\MXD\PPP_WETLANDS\SC-1\PENPIPELINE_BLAIRCO_ADDENDUMDETAIL.MXD 03/23/16 JN



- 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)

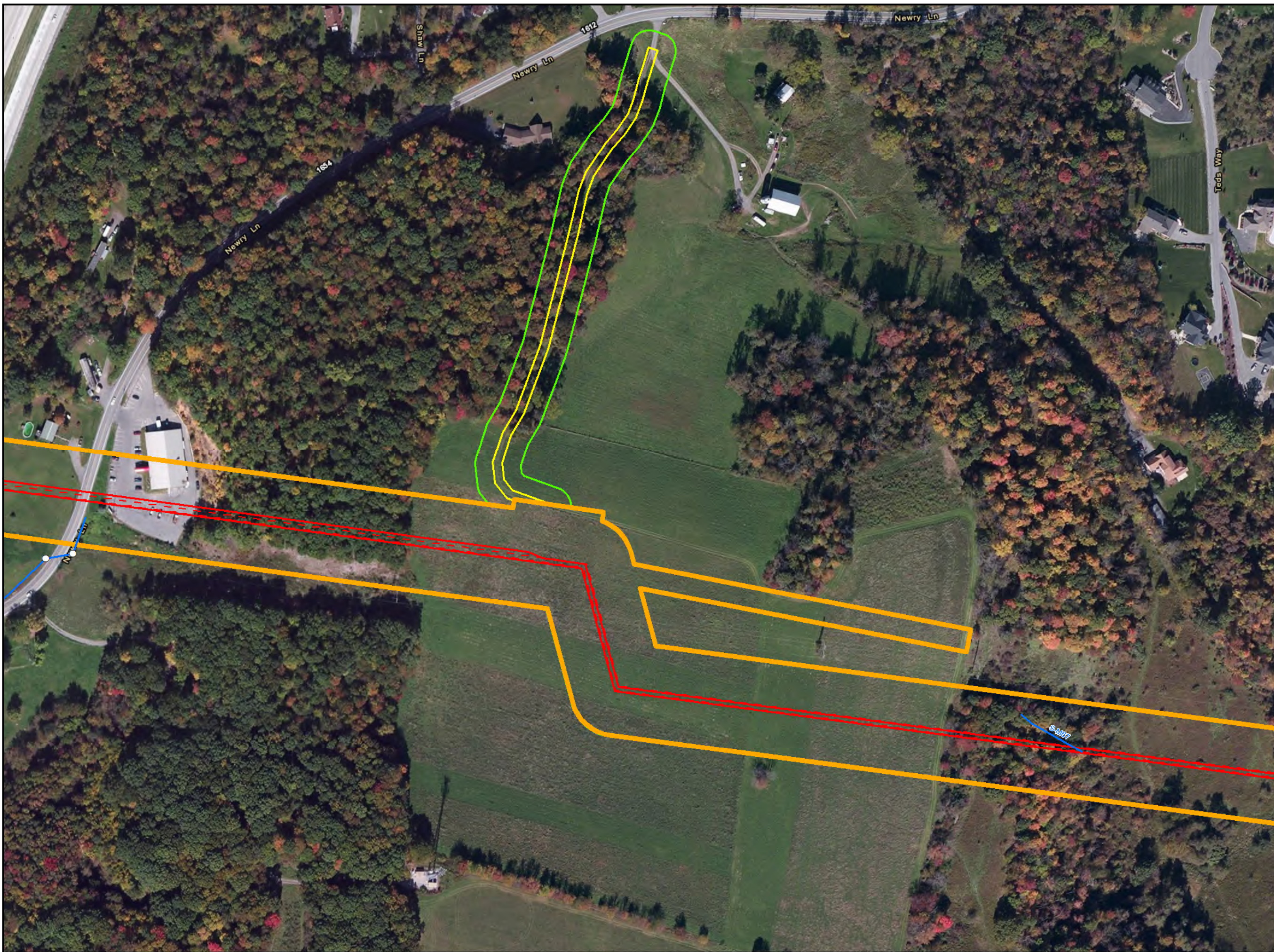


**ADDENDUM WETLANDS DETAIL MAP
FIGURE 4-2
PENNSYLVANIA PIPELINE PROJECT
FEBRUARY 25, 2016 ALIGNMENT
SUNOCO LOGISTICS, L.P.
BLAIR COUNTY, PA**



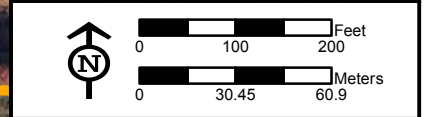
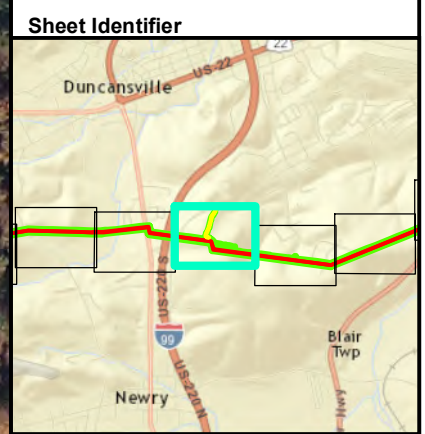
Notes:
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).
 2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.

FGH-P\GIS\SUNOCO\MARINER EAST 2\MXD\PPP_WETLANDS\SC-1\PENNSYLVANIA_PIPELINE\BLAIRCO_ADDENDUMDETAIL.MXD 03/23/16 JIN



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)

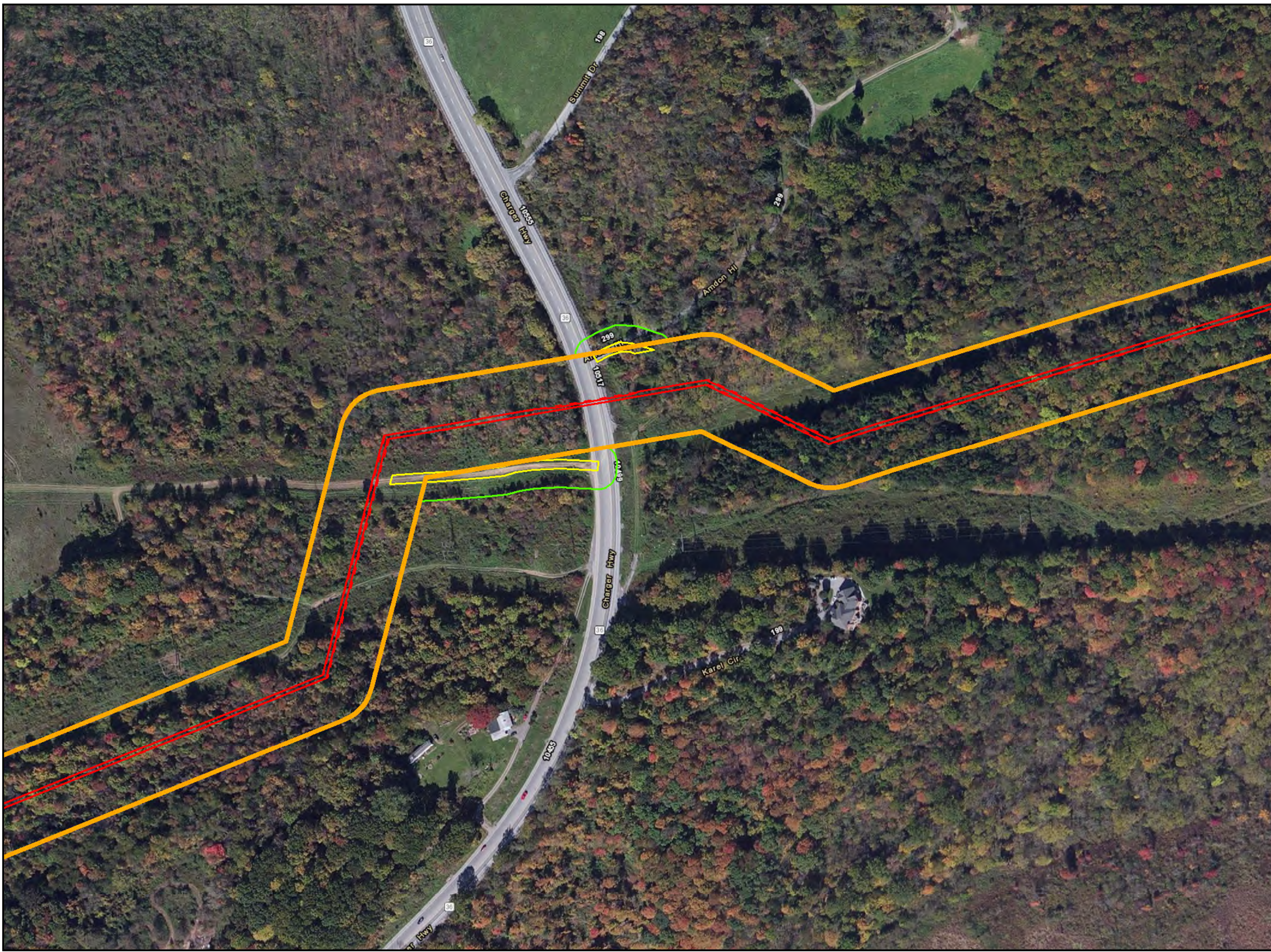


**ADDENDUM WETLANDS DETAIL MAP
FIGURE 4-3
PENNSYLVANIA PIPELINE PROJECT
FEBRUARY 25, 2016 ALIGNMENT
SUNOCO LOGISTICS, L.P.
BLAIR COUNTY, PA**

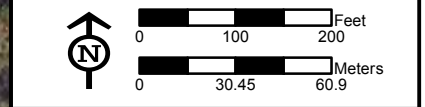
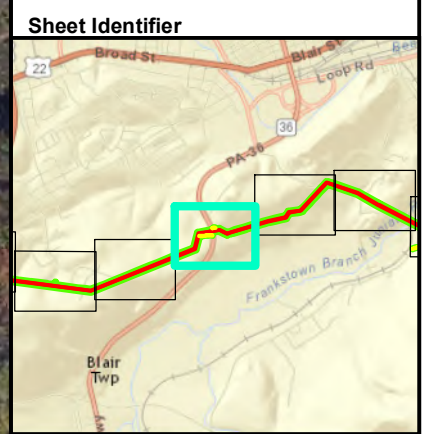


Notes:
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).
 2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.

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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)

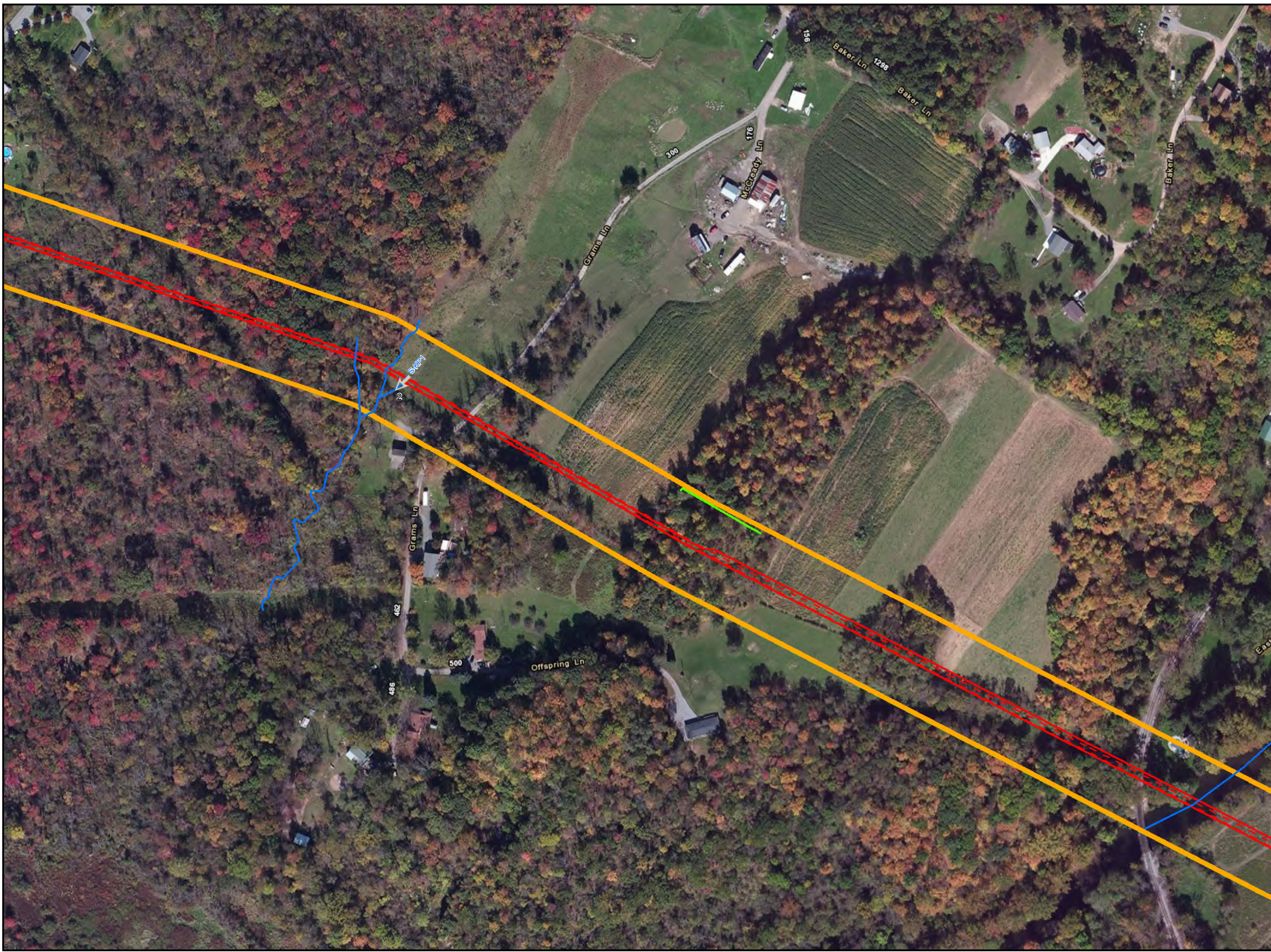


ADDENDUM WETLANDS DETAIL MAP
FIGURE 4-4
PENNSYLVANIA PIPELINE PROJECT
FEBRUARY 25, 2016 ALIGNMENT
SUNOCO LOGISTICS, L.P.
BLAIR COUNTY, PA

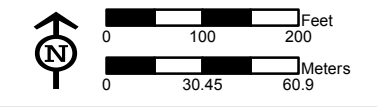
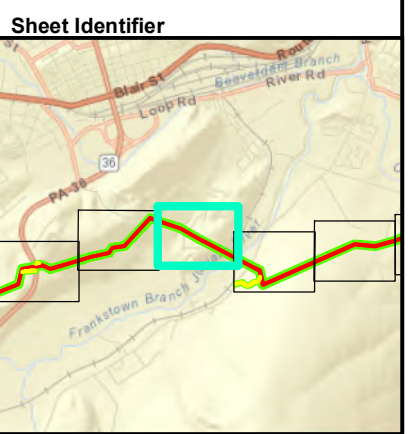


Notes:
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).
 2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.

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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)

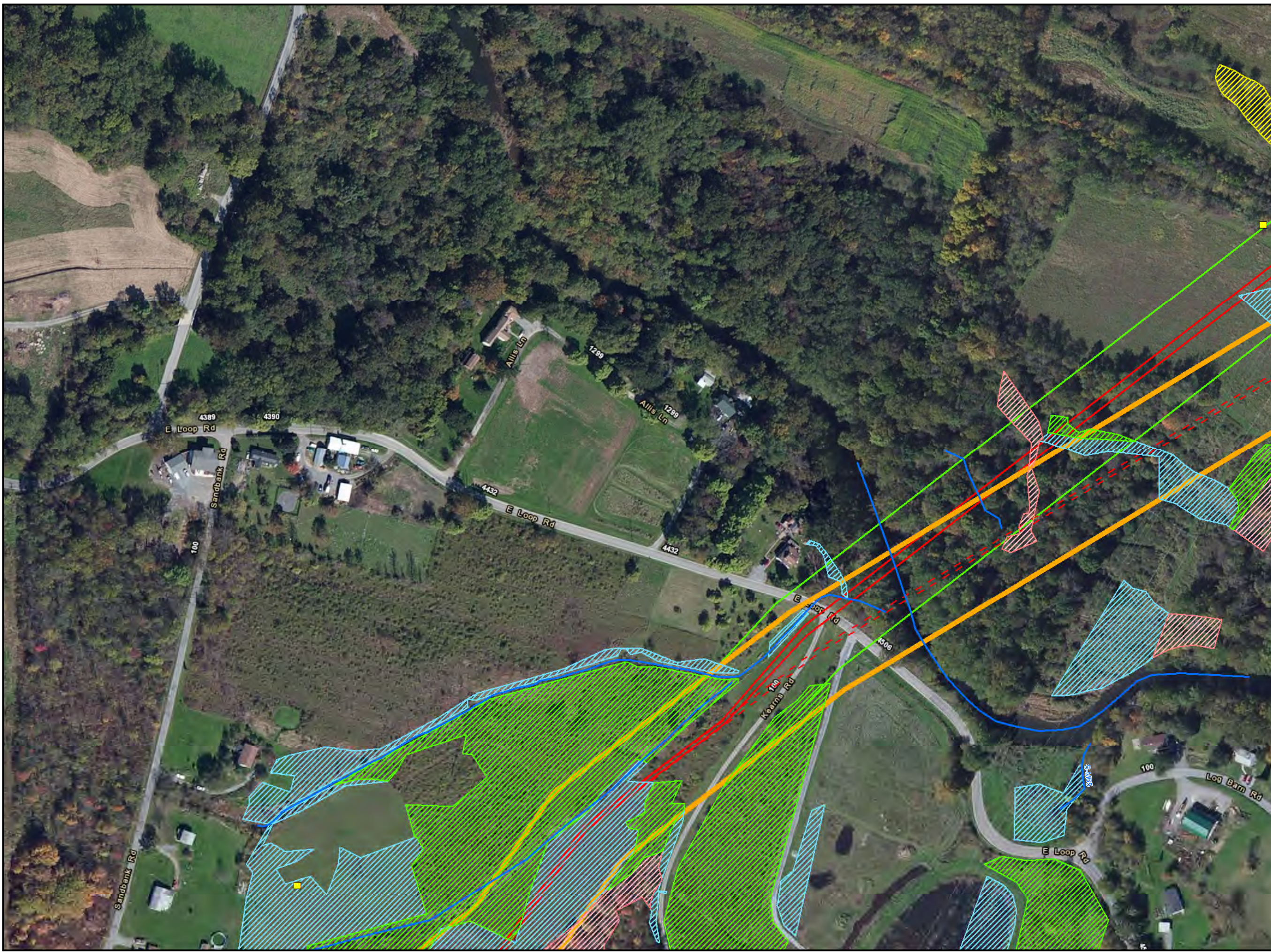


**ADDENDUM WETLANDS DETAIL MAP
FIGURE 4-5
PENNSYLVANIA PIPELINE PROJECT
FEBRUARY 25, 2016 ALIGNMENT
SUNOCO LOGISTICS, L.P.
BLAIR COUNTY, PA**

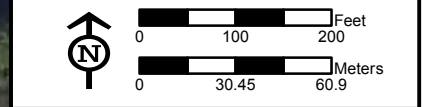
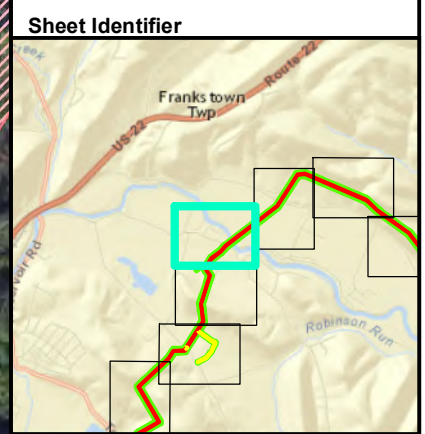


Notes:
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).
 2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.

PGH_P\GIS\SUNOCO\MARINER_EAST_2\MXD\PPP_WETLANDS_SC-1\PENNSYLVANIA_PIPELINE_BLAIRCO_ADDENDUMDETAIL.MXD 03/23/16 JIN



- 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)

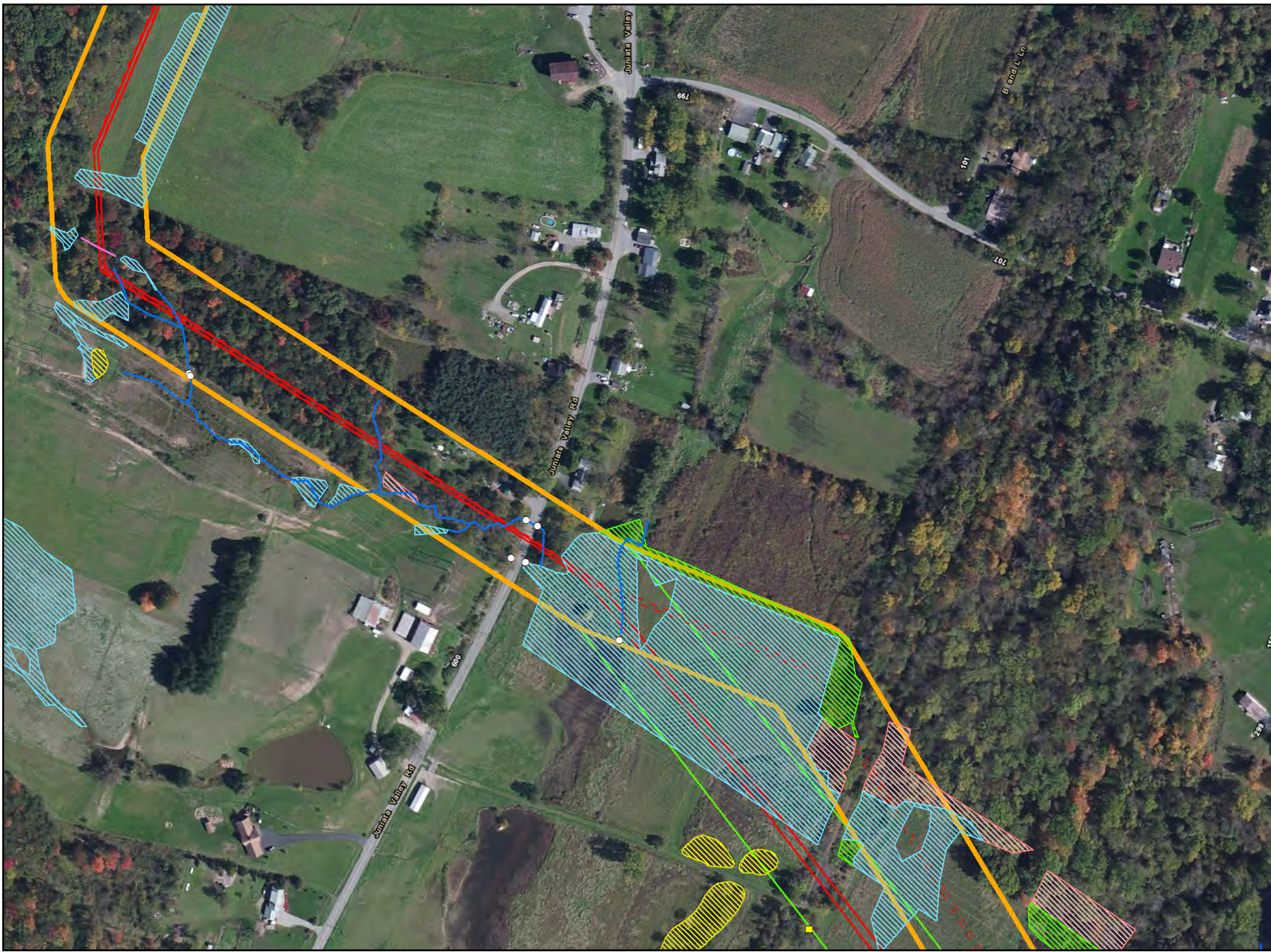


**ADDENDUM WETLANDS DETAIL MAP
FIGURE 4-6
PENNSYLVANIA PIPELINE PROJECT
FEBRUARY 25, 2016 ALIGNMENT
SUNOCO LOGISTICS, L.P.
BLAIR COUNTY, PA**

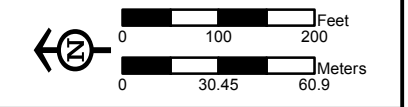
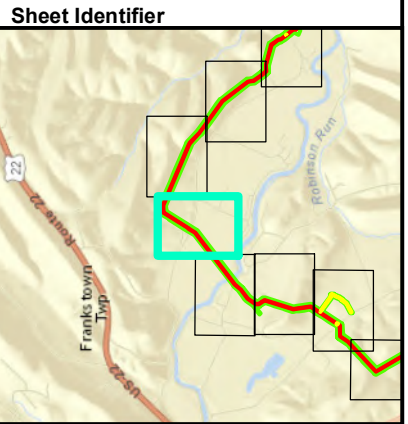


Notes:
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).
 2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.

P:\GIS\SUNOCO\MARINER EAST 2\MXD\PPP_WETLANDS\SC-1\PP\PIPELINE_BLAIRCO_ADDENDUMDETAIL.MXD 03/24/16 JIN



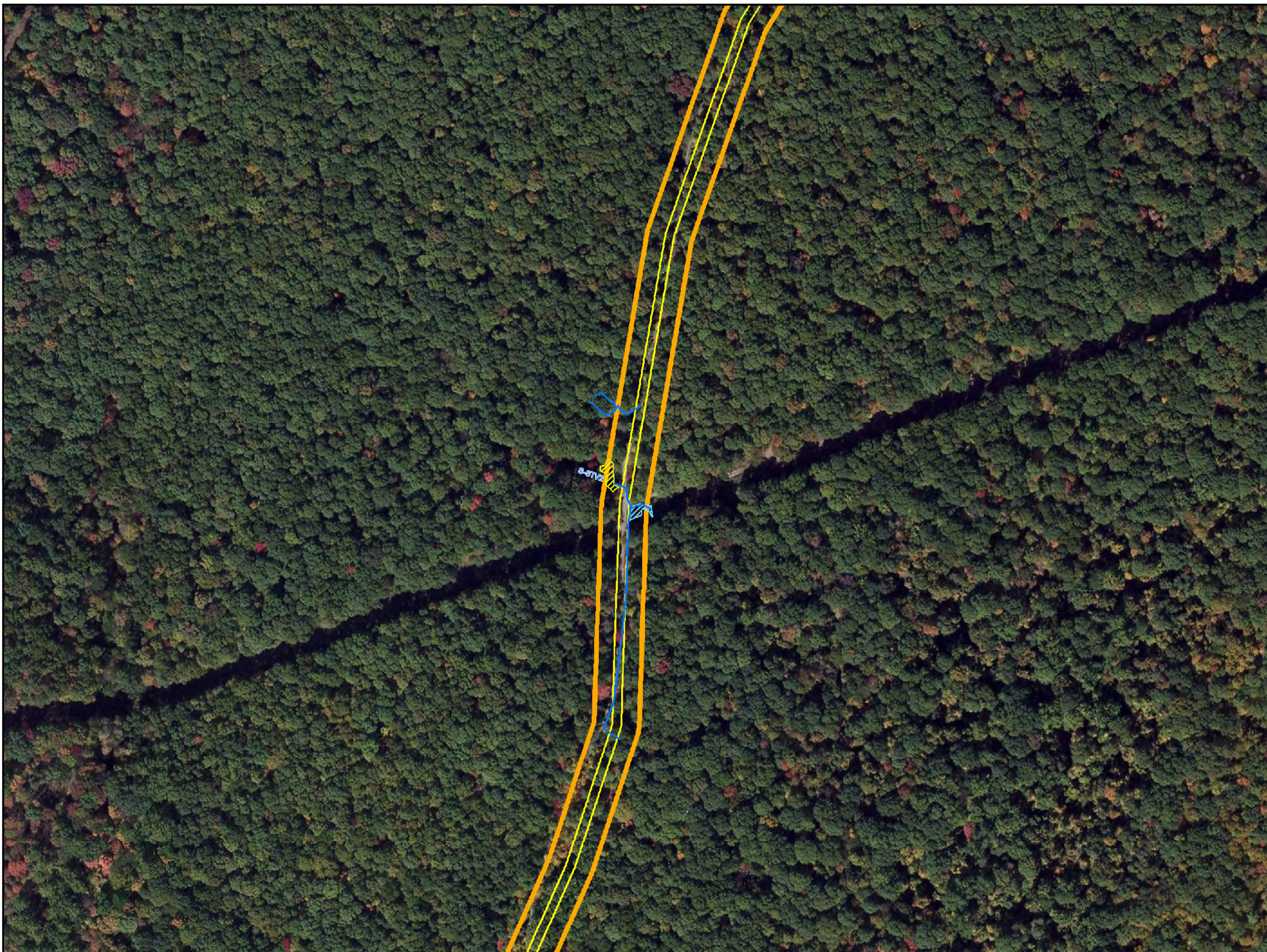
- Legend**
- Culvert
 - Sample Location
 - Photo Location
 - Drainage Feature
 - Stream
 - Wetland**
 - ▨ PEM
 - ▨ PFO
 - ▨ PSS
 - ▨ PuB
 - New Wetland**
 - ▨ PEM
 - ▨ PFO
 - ▨ PSS
 - ▨ PuB
 - Access Road
 - Alignment Centerline
 - Study Area
 - Access Road (8/2/15)
 - Alignment Centerline (8/2/15)
 - Study Area (8/2/15)



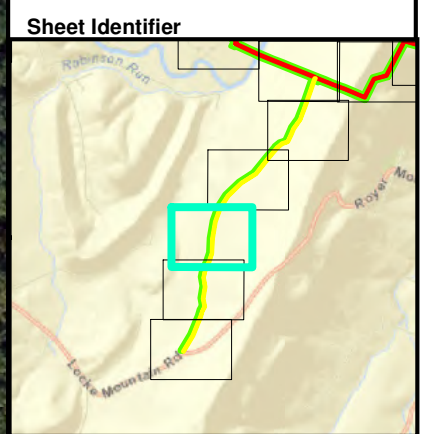
ADDENDUM WETLANDS DETAIL MAP
FIGURE 4-7
PENNSYLVANIA PIPELINE PROJECT
FEBRUARY 25, 2016 ALIGNMENT
SUNOCO LOGISTICS, L.P.
BLAIR COUNTY, PA



Notes:
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).
 2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.



- 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)



ADDENDUM WETLANDS DETAIL MAP
FIGURE 4-8
PENNSYLVANIA PIPELINE PROJECT
FEBRUARY 25, 2016 ALIGNMENT
SUNOCO LOGISTICS, L.P.
BLAIR COUNTY, PA



Notes:
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).
 2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.

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APPENDIX A
STREAM DATA SHEETS

STREAM ID S-KP2	STREAM NAME UNT to Blair Gap Run
LAT 40.406517° LONG -78.462437°	DATE 03/09/2016
CLIENT Sunoco Logistics, L.P.	PROJECT NAME PPP
INVESTIGATORS J. McGuirk, K. Pulver	
WATER TYPE TNW <input type="checkbox"/> RPW <input type="checkbox"/> NRPW <input checked="" type="checkbox"/>	FLOW REGIME Perennial <input type="checkbox"/> Intermittent <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/>

CHANNEL FEATURES	Estimate Measurements Top of Bank Width: <u>15.0</u> ft Top of Bank Height: LB <u>8.0</u> ft RB <u>8.0</u> ft Water Depth: <u>1.00</u> in Water Width: <u>1.0</u> ft Ordinary High Water Mark (Width): <u>3.0</u> in Ordinary High Water Mark (Height): <u>3.0</u> in Flow Direction: <u>East</u>	Stream Erosion <input checked="" type="checkbox"/> None <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy Artificial, Modified or Channelized <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Dam Present <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Sinuosity <input checked="" type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High Gradient <input type="checkbox"/> Flat <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Severe (0.5/100 ft) (2 ft/100 ft) (10 ft/100 ft)
-------------------------	--	---

FLOW CHARACTERISTICS	Water Present <input type="checkbox"/> No water, stream bed dry <input checked="" type="checkbox"/> Stream bed moist <input type="checkbox"/> Standing water <input type="checkbox"/> Flowing water Velocity <input type="checkbox"/> Fast <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Slow	Proportion of Reach Represented by Stream Morphology Types Riffle % Run % Pool 100 % Turbidity <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly turbid <input type="checkbox"/> Turbid <input type="checkbox"/> Opaque <input type="checkbox"/> Stained <input type="checkbox"/> Other
-----------------------------	--	---

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) <small>100</small>			ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)		
Substrate Type	Diameter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock			Detritus	sticks, wood, coarse plant materials (CPOM)	80
Boulder	> 256 mm (10")				
Cobble	64-256 mm (2.5"-10")	5	Muck-Mud	black, very fine organic (FPOM)	
Gravel	2-64 mm (0.1"-2.5")	10			
Sand	0.06-2mm (gritty)	40	Marl	grey, shell fragments	
Silt	0.004-0.06 mm	40			
Clay	< 0.004 mm (slick)	5			

WATERSHED FEATURES	Predominant Surrounding Landuse <input checked="" type="checkbox"/> Forest <input type="checkbox"/> Commercial <input type="checkbox"/> Field/Pasture <input type="checkbox"/> Industrial <input type="checkbox"/> Agricultural <input type="checkbox"/> Residential <input type="checkbox"/> Other:	Indicate the dominant type <input checked="" type="checkbox"/> Trees <input type="checkbox"/> Shrubs <input type="checkbox"/> Grasses <input type="checkbox"/> Herbaceous Floodplain Width <input type="checkbox"/> Wide > 30ft <input type="checkbox"/> Moderate 15-30ft <input checked="" type="checkbox"/> Narrow <16ft Wetland Present <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Wetland ID
	Canopy Cover <input type="checkbox"/> Open <input type="checkbox"/> Partly shaded <input checked="" type="checkbox"/> Shaded	

AQUATIC VEGETATION	Indicate the dominant type and record the dominant species present <input type="checkbox"/> Rooted emergent <input type="checkbox"/> Rooted submergent <input type="checkbox"/> Rooted floating <input type="checkbox"/> Free floating <input type="checkbox"/> Floating algae <input type="checkbox"/> Attached algae
---------------------------	---

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	
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STREAM ID S-KP1	STREAM NAME UNT to Frankstown Branch Juniata River
LAT 40.415580° LONG -78.380431°	DATE 03/09/2016
CLIENT Sunoco Logistics, L.P.	PROJECT NAME PPP
INVESTIGATORS J. McGuirk, K. Pulver	
WATER TYPE TNW <input type="checkbox"/> RPW <input checked="" type="checkbox"/> NRPW <input type="checkbox"/>	FLOW REGIME Perennial <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/>

CHANNEL FEATURES	Estimate Measurements Top of Bank Width: 8.0 ft Top of Bank Height: LB 2.0 ft RB 2.0 ft Water Depth: 8.00 in Water Width: 2.0 ft Ordinary High Water Mark (Width): 4.0 in Ordinary High Water Mark (Height): 6.0 in Flow Direction: Southwest	Stream Erosion <input checked="" type="checkbox"/> None <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy Artificial, Modified or Channelized <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Dam Present <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Sinuosity <input type="checkbox"/> Low <input checked="" type="checkbox"/> Medium <input type="checkbox"/> High Gradient <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Moderate (2 ft/100 ft) <input type="checkbox"/> Severe (10 ft/100 ft)
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FLOW CHARACTERISTICS	Water Present <input type="checkbox"/> No water, stream bed dry <input type="checkbox"/> Stream bed moist <input type="checkbox"/> Standing water <input checked="" type="checkbox"/> Flowing water Velocity <input type="checkbox"/> Fast <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Slow	Proportion of Reach Represented by Stream Morphology Types Rifle 60 % Run % Pool 40 % Turbidity <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly turbid <input type="checkbox"/> Turbid <input type="checkbox"/> Opaque <input type="checkbox"/> Stained <input type="checkbox"/> Other
-----------------------------	--	--

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) <small>100</small>			ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)		
Substrate Type	Diameter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock			Detritus	sticks, wood, coarse plant materials (CPOM)	35
Boulder	> 256 mm (10")				
Cobble	64-256 mm (2.5"-10")		Muck-Mud	black, very fine organic (FPOM)	30
Gravel	2-64 mm (0.1"-2.5")				
Sand	0.06-2mm (gritty)		Marl	grey, shell fragments	
Silt	0.004-0.06 mm	50			
Clay	< 0.004 mm (slick)	50			

WATERSHED FEATURES	Predominant Surrounding Landuse <input type="checkbox"/> Forest <input type="checkbox"/> Commercial <input checked="" type="checkbox"/> Field/Pasture <input type="checkbox"/> Industrial <input type="checkbox"/> Agricultural <input type="checkbox"/> Residential <input type="checkbox"/> Other:	Indicate the dominant type <input type="checkbox"/> Trees <input type="checkbox"/> Shrubs <input checked="" type="checkbox"/> Grasses <input type="checkbox"/> Herbaceous Floodplain Width <input checked="" type="checkbox"/> Wide > 30ft <input type="checkbox"/> Moderate 15-30ft <input type="checkbox"/> Narrow <16ft Wetland Present <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Wetland ID
	Canopy Cover <input checked="" type="checkbox"/> Open <input type="checkbox"/> Partly shaded <input type="checkbox"/> Shaded	

AQUATIC VEGETATION	Indicate the dominant type and record the dominant species present <input type="checkbox"/> Rooted emergent <input type="checkbox"/> Rooted submergent <input type="checkbox"/> Rooted floating <input type="checkbox"/> Free floating <input type="checkbox"/> Floating algae <input type="checkbox"/> Attached algae
---------------------------	---

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	
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STREAM ID S-STV2		STREAM NAME UNT to Robinson Run	
LAT 40.416837 LONG -78.302448		DATE 12/22/2014	
CLIENT Sunoco Logistics, L.P.		PROJECT NAME PPP	
INVESTIGATORS Logan Zugay & Skelly and Low			
WATER TYPE TNW <input type="checkbox"/> RPW <input checked="" type="checkbox"/> NRPW <input type="checkbox"/>		FLOW REGIME Perennial <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/>	

CHANNEL FEATURES	Estimate Measurements Top of Bank Width: <u>3.5</u> ft Top of Bank Height: LB <u>11.0</u> in RB <u>11.0</u> in Water Depth: <u>1.00</u> in Water Width: <u>1.5</u> in Ordinary High Water Mark (Width): <u>2.0</u> in Ordinary High Water Mark (Height): <u>3.0</u> in Flow Direction: <u>East</u>	Stream Erosion <input checked="" type="checkbox"/> None <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy
		Artificial, Modified or Channelized <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		Dam Present <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
		Sinuosity <input checked="" type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High
		Gradient <input type="checkbox"/> Flat <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Severe (0.5/100 ft) (2 ft/100 ft) (10 ft/100 ft)

FLOW CHARACTERISTICS	Water Present <input type="checkbox"/> No water, stream bed dry <input type="checkbox"/> Stream bed moist <input type="checkbox"/> Standing water <input checked="" type="checkbox"/> Flowing water	Proportion of Reach Represented by Stream Morphology Types Riffle 30 % Run 40 % Pool 30 %
	Velocity <input type="checkbox"/> Fast <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Slow	Turbidity <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Slightly turbid <input type="checkbox"/> Turbid <input type="checkbox"/> Opaque <input type="checkbox"/> Stained <input type="checkbox"/> Other _____

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) <small>140</small>			ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)		
Substrate Type	Diameter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock			Detritus	sticks, wood, coarse plant materials (CPOM)	
Boulder	> 256 mm (10")				
Cobble	64-256 mm (2.5"-10")	30	Muck-Mud	black, very fine organic (FPOM)	
Gravel	2-64 mm (0.1"-2.5")	30			
Sand	0.06-2mm (gritty)	40	Marl	grey, shell fragments	
Silt	0.004-0.06 mm	20			
Clay	< 0.004 mm (slick)	20			

WATERSHED FEATURES	Predominant Surrounding Landuse <input checked="" type="checkbox"/> Forest <input type="checkbox"/> Commercial <input type="checkbox"/> Field/Pasture <input type="checkbox"/> Industrial <input type="checkbox"/> Agricultural <input type="checkbox"/> Residential <input type="checkbox"/> Other:	Indicate the dominant type <input checked="" type="checkbox"/> Trees <input type="checkbox"/> Shrubs <input type="checkbox"/> Grasses <input type="checkbox"/> Herbaceous
	Canopy Cover <input type="checkbox"/> Open <input checked="" type="checkbox"/> Partly shaded <input type="checkbox"/> Shaded	Floodplain Width <input type="checkbox"/> Wide > 30ft <input type="checkbox"/> Moderate 15-30ft <input checked="" type="checkbox"/> Narrow <16ft Wetland Present <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No Wetland ID W-BB99

AQUATIC VEGETATION	Indicate the dominant type and record the dominant species present <input type="checkbox"/> Rooted emergent <input type="checkbox"/> Rooted submergent <input type="checkbox"/> Rooted floating <input type="checkbox"/> Free floating <input type="checkbox"/> Floating algae <input type="checkbox"/> Attached algae
---------------------------	---

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	
---	--

APPENDIX B
STREAM PHOTOGRAPHS



Photograph Number: 1 **Feature Name:** S-KP2 **Date:** 03/09/2016
Direction: NW, Upstream **Flow Regime:** Ephemeral **Remarks:** N/A



Photograph Number: 2 **Feature Name:** S-KP1 **Date:** 03/09/2016
Direction: SW, Downstream **Flow Regime:** Intermittent **Remarks:** N/A

Photograph Number: N/A **Feature Name:** S-STV2 **Date:** 12/22/2014
Direction: M/A **Flow Regime:** Intermittent **Remarks:** Photo unavailable

APPENDIX C
HYDRIC SOILS LIST

Hydric Soils List

Blair County, Pennsylvania

Map Unit Symbol	Map Unit Name	Component Name and Phase	Component Percent	Landforms
AbB	Albrights gravelly silt loam, 3 to 8 percent slopes	Brinkerton	5	hills
AbC	Albrights gravelly silt loam, 8 to 15 percent slopes	Brinkerton	5	hills
AcB	Albrights very stony silt loam, 3 to 8 percent slopes	Brinkerton	10	hills
AcD	Albrights very stony silt loam, 8 to 25 percent slopes	Brinkerton	10	hills
AnB	Andover variant loam, 3 to 8 percent slopes	Andover variant	90	mountain slopes
AoB	Andover variant extremely stony loam, 3 to 8 percent slopes	Andover variant	90	mountain slopes
Ba	Basher soils	Holly	5	flood plains
BdD	Bedington very stony silt loam, 8 to 25 percent slopes	Brinkerton	5	hills
BmF	Berks-Weikert channery silt loams, 25 to 70 percent slopes	Brinkerton	2	hills
BoB	Blairton silt loam, 3 to 8 percent slopes	Brinkerton	5	hills
BoC	Blairton silt loam, 8 to 15 percent slopes	Brinkerton	5	hills
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

BrC	Brinkerton silt loam, 8 to 15 percent slopes	Brinkerton	85	drainageways
BuB	Buchanan gravelly silt loam, 3 to 8 percent slopes	Andover	5	depressions
BuB	Buchanan gravelly silt loam, 3 to 8 percent slopes	Seeps and springs	1	depressions
BuC	Buchanan gravelly silt loam, 8 to 15 percent slopes	Andover	5	depressions
BuC	Buchanan gravelly silt loam, 8 to 15 percent slopes	Seeps and springs	1	depressions
BxB	Buchanan extremely stony silt loam, 3 to 8 percent slopes	Andover	5	depressions
BxD	Buchanan extremely stony silt loam, 8 to 25 percent slopes	Andover	3	depressions
BxD	Buchanan extremely stony silt loam, 8 to 25 percent slopes	Springs and seeps	1	depressions
CaB	Cavode silt loam, 3 to 8 percent slopes	Brinkerton	5	hills
CbB	Clarksburg silt loam, 3 to 8 percent slopes	Thorndale	5	depressions
ErB	Ernest silt loam, 3 to 8 percent slopes	Brinkerton	5	depressions
ErB	Ernest silt loam, 3 to 8 percent slopes	Atkins	2	flood plains
ErC	Ernest silt loam, 8 to 15 percent slopes	Brinkerton	5	depressions
Ho	Holly silt loam	Holly	94	flood plains
Ho	Holly silt loam	Brinkerton	2	depressions
Lo	Linden soils	Holly	2	flood plains
Lp	Lobdell silt loam	Holly	10	flood plains

MoB	Monongahela silt loam, 3 to 8 percent slopes	Holly	3	flood plains
OxF	Opequon-Hagerstown-Rock outcrop complex, 25 to 50 percent slopes	Holly	1	flood plains
PeB	Penlaw silt loam, 0 to 8 percent slopes	Thorndale	10	draws
Pt	Pits-Dumps complex	Brinkerton, poorly drained areas	1	hills
Pu	Purdy silt loam	Purdy	85	terraces
Qu	Quarries-Dumps complex	Brinkerton, poorly drained areas	2	hills
Ty	Tyler silt loam	Purdy	5	depressions
UD	Udifluents-Dystrochrepts complex	Brinkerton	2	hills
UD	Udifluents-Dystrochrepts complex	Holly	2	flood plains
UYB	Urban land-Berks complex, 0 to 8 percent slopes	Brinkerton	5	depressions
UYD	Urban land-Berks complex, 8 to 25 percent slopes	Brinkerton	5	depressions
WhB	Wharton silt loam, 3 to 8 percent slopes	Brinkerton	3	draws
WhC	Wharton silt loam, 8 to 15 percent slopes	Brinkerton	3	hills
WvB	Wharton variant silt loam, 3 to 8 percent slopes	Brinkerton	5	hills

Modified from Hydric Soils of the United States (NRCS 2014)

APPENDIX D
RESUMES



EXPERIENCE SUMMARY

Mr. Jason McGuirk has six years of professional experience in wetland delineation, permitting, fisheries and wildlife, and stream assessments and classification in Pennsylvania, New York, Ohio, and Alaska. Mr. McGuirk 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 800 miles of proposed natural gas pipeline, and fifty plus proposed well pad sites. He has extensive knowledge in watercourse classification and assessment including the Rosgen method. In particular attention of his has been focused on fisheries habitat and macro-invertebrate work, with over fifty miles of stream classifications in Alaska. Mr. McGuirk's educational background is in Fisheries and Aquaculture with a minor focus in Marine Biology and Wildlife management.

RELEVANT EXPERIENCE

Environmental Scientist III; Sunoco Logistics; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects, Engendered Species Surveys; Reptilia (Glyptemys muhlenbergii), Plantae (Ellisia nyctelea); Pennsylvania. Segments 1, 2, and 3 wetlands field lead, and crew leader. Responsibilities include organizing and conducting all field work operations for multiple wetlands crews, wetland delineations and stream assessments for the proposed 450 mile Pennsylvania Pipeline Project. Additional work included proposing potential re-route on an environmental basis.

Environmental Scientist III; MarkWest Liberty Midstream & Resources, LLC; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects; Pennsylvania. 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.

Environmental Scientist III; MarkWest Ohio Gathering Company, LLC; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects; Ohio. Responsible for performing and assisting with wetland delineations for various proposed natural gas pipeline projects in eastern Ohio. Specific tasks included field survey, report preparation, and completion of Ohio EPA specific wetland and stream assessments.

EDUCATION

B.T. Fisheries and Aquaculture, SUNY Cobleskill, 2011T

REGISTRATIONS

Wild Plant Management Permit, PA, 2014, Permit # 14-651

AREA OF EXPERTISE

Wetland Delineation and Stream Identification, Fisheries, and Botanical Surveys

TRAINING/CERTIFICATIONS

Winter Vegetation ID, Rutgers University, 2012

Amtrak Contractor Certification, 2014

Certified Wetland Assessment Delineator, NY, 2009

OFFICE

Pittsburgh, PA

YEARS OF EXPERIENCE

6+

YEARS WITH TETRA TECH

2+

Environmental Scientist III; Gulfport Energy Corporation; Wetland Delineations for Miscellaneous Natural Gas Well Pad Projects; Ohio. Responsible for performing and assisting with wetland delineations for various proposed natural well pads southeastern Ohio. Specific tasks included field survey, report preparation, PCN preparation, and completion of Ohio EPA specific wetland and stream assessments.

Environmental Scientist III; MarkWest Liberty Midstream & Resources, LLC; Wetland Delineation and Engendered Species Survey (*Ranunculus flabellaris* and *Alopecurus aequalis*) for Vanport to Butler Gas Pipeline; Butler County, Pennsylvania. Responsible for performing and assisting with wetland delineation and endangered species survey along pipeline right-of-way. Specific tasks included field survey and report preparation.

Environmental Scientist III; Antero Resources Appalachian Corp.; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects; Ritchie and Doddridge Counties, West Virginia. Responsible for performing and assisting with wetland delineations for various proposed natural gas well pads and access roads in northern West Virginia. Specific tasks included field survey and report preparation.

Wetland & Watercourse Biologist; Chesapeake Energy; Schoharie County, PA; November 2011 to October 2012. Responsible for conducting wetland delineations for proposed pipe line routes and reroutes. Performed PA Rapid Assessments, stream evaluation, and preparation of wetland report for 30 miles of pipeline in Northeastern Pennsylvania.

Wetland & Watercourse Biologist; Southwest Energy L.P; Schoharie County, PA; November 2011 to October 2012. Responsible for conducting wetland delineations on proposed Well pad and compressor sites. Performed PA Rapid Assessments, stream evaluation, and preparation of wetland report for 15 proposed well pad locations in Northeastern Pennsylvania.

Wetland & Watercourse Biologist; Southwest Energy L.P; Susquehanna County, PA; November 2011 to October 2012. Responsible for conducting wetland delineations on proposed Well pad and compressor sites. Performed PA Rapid Assessments, stream evaluation, and preparation of wetland report for 20 proposed well pad locations in Northeastern Pennsylvania.

Wetland & Watercourse Biologist; Chesapeake Energy; Carroll, Jefferson County, OH; November 2011 to October 2012. Responsible for conducting wetland delineations for proposed pipe line routes and reroutes. Performed ORAM and QHEI Assessments, and preparation of wetland report for 30 miles of pipeline in Eastern Ohio.

Wetland & Watercourse Biologist; Shell Oil; Butler County, PA; November 2011 to October 2012. 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 Western Pennsylvania.

Wetland & Watercourse Biologist; Chesapeake Energy; Schoharie County, PA; November 2011 to October 2012. Responsible for conducting Indiana Bat habitat surveys on multiple proposed natural gas pipelines in Northeastern Pennsylvania.

Wetland & Watercourse Biologist; Chesapeake Energy; Schoharie County, PA; November 2011 to October 2012. Responsible for conducting post construction habitat monitoring and assessment of constructed natural gas pipelines in Northeastern Pennsylvania.

CHRONOLOGICAL HISTORY

Wetland Environmental Scientist IV; Tetra Tech, Inc.; Pittsburgh, PA, June 2014 - Present

Wetland Environmental Scientist III; Tetra Tech, Inc.; Pittsburgh, PA, February 2013 - June 2014

Wetland & Watercourse Biologist; Hanover Engineering & Associates; Towanda, PA, November 2011 - October 2012

Assistant Hatchery Manager; SUNY Cobleskill; Cobleskill, NY, September – May of 2009- 2011

Biological Fisheries Technician, US Forest Service; Thorne Bay, AK, May 2010 - August 2010

Fisheries Technician, Cook Inlet Aquaculture Association, Kenai, AK, May 2009 – August 2009

SCIENTIFIC/TECHNICAL PUBLICATIONS

- McGuirk, J, M, "Walleye (*Sander vitreus*) spawning movements and habitat utilization in Otsego Lake, NY, 2011

MEMBERSHIPS

- N/A

AWARDS

- David E. Moorehouse Award for Outstanding Junior in Fisheries and Aquaculture B.T.



EXPERIENCE SUMMARY

Mr. Kevin Pulver has 1 year of professional experience in wetland delineation and stream assessment and classification throughout Pennsylvania, Ohio, Virginia, and West Virginia. As a Wetland Environmental Scientist I, Mr. Pulver had the opportunity to perform numerous wetland delineations under the supervision of seasoned professionals within the Wetlands and Ecological Services Department of Tetra Tech. Delineations were primarily performed for natural gas pipeline projects. Mr. Pulver’s educational background includes watershed management/stream restoration and environmental science. He is also versed in GIS and AutoCAD software application.

RELEVANT EXPERIENCE

OIL/GAS

Environmental Scientist I; Equitrans, LP; Field Operations Coordinator; Mountain Valley Pipeline Project – 2015 to Present. Responsible for the management and oversight of all wetland and stream delineation activities for the proposed Mountain Valley Pipeline Project.

Environmental Scientist I; Sunoco Logistics; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects Pennsylvania – 2014 to Present. Responsible for performing and assisting with wetland delineations and stream assessments for the proposed Pennsylvania Pipeline Project. Other responsibilities included report preparation and wetland functional assessments.

Environmental Scientist I; Sunoco Logistics; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects Pennsylvania – 2014 to Present. Responsible for performing and assisting with wetland delineations and stream assessments for the proposed Pennsylvania Pipeline Project. Other responsibilities included report preparation and wetland functional assessments.

Environmental Scientist I; MarkWest Liberty Midstream & Resources, LLC; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects; Pennsylvania – 2014 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.

EDUCATION

B.A. Environmental Studies, 2011, Penn State University - Altoona
B.S. Geography: Watershed Management; Environmental Science, 2013, Mansfield University of Pennsylvania

**REGISTRATIONS/
AFFILIATIONS**

PADCNR Wild Plant Management, Permit No. 15-673 (2015)

TRAINING/CERTIFICATIONS

Certificate in Wetland Delineation from Wetland Training Institute (2013)
CPR / First Aid / AED (2015)

OFFICE

Pittsburgh, PA

YEARS OF EXPERIENCE

1

YEARS WITH TETRA TECH

1

CONTACT

Email: kevin.pulver@tetratech.com
Direct: 412.920.7024

Environmental Scientist I; MarkWest Ohio Gathering Company, LLC; Wetland Delineations for Miscellaneous Natural Gas Pipeline Projects; Ohio – 2014 to Present. Responsible for performing and assisting with wetland delineations for various proposed natural gas pipeline projects in eastern Ohio. Specific tasks included field survey, report preparation, and completion of Ohio EPA specific wetland and stream assessments.

EMPLOYMENT HISTORY

- Wetland/Environmental Scientist I, Tetra Tech, Inc., November, 2014 – Present, Pittsburgh, PA
- AutoCAD Drafter, Land Services Group, November 2013-July 2014, Wellsboro, PA
- Cartographer, Intelligent Direct, Inc., May 2013 – November 2013, Wellsboro, PA
- Biological Scientist Intern, United States Geologic Survey - Northern Appalachian Research Laboratory, Summer 2012, Wellsboro, PA

SCIENTIFIC/TECHNICAL PUBLICATIONS

- N/A

MEMBERSHIPS

- Society of Wetland Scientists