



## **Sunoco Pipeline, LP Pennsylvania Pipeline Project**

### **2016 PADEP Field Review**

#### **Technical Memo**

**May 12, 2016**

Tetra Tech, Inc. (Tetra Tech) and the Pennsylvania Department of Environmental Protection (PADEP) conducted field reviews along the proposed Sunoco Pipeline, LP Pennsylvania Pipeline Project alignment to verify wetland boundaries, wetland Cowardin classifications, and the presence or absence of wetlands or streams within the project area.

PADEP provided a list of 31 locations for field reviews. These 31 locations were given unique names consisting of the county they were located in and a number (in order from east to west). PADEP was able to visit and field verify 19 of the 31 locations. For the 12 locations that PADEP was not present at, Rettew conducted an independent third-party review of Tetra Tech's aquatic resource survey to verify wetland boundaries, wetland Cowardin classifications, and the presence or absence of wetlands or streams.

Field visits were conducted April 26 – 28, 2016. Site figures, photographs, and field data forms are attached at the end of this memo. The attached figures show the locations listed by PADEP. For clarity, the figures only show wetland and stream features that were noted in the PADEP comments or that were delineated or extended during the April field review.

Summaries of the location visits are provided below.

#### **BERKS #1**

The PADEP had a comment about the wetland boundaries at this site (Figure 1). PADEP was not present during this site visit on April 28, 2016. Rettew and Tetra Tech confirmed the previously delineated wetland boundaries of Wetland B33 (W-B33). Rettew confirmed that the boundary of W-B32 is not larger than the previously delineated boundary. See Photographs 1 and 2.

#### **LEBANON #1**

The PADEP had a comment about the potential presence of a wetland at this site (Figure 2). PADEP was not present during this site visit on April 28, 2016. Rettew and Tetra Tech confirmed that no wetland was present at this site. The site is a recently plowed agricultural field with no evidence of hydrology or other conditions necessary for wetland formation. See Photographs 3 and 4.

#### **LEBANON #2**

The PADEP had a comment about the potential presence of a wetland at this site (Figure 3). PADEP was present during this site visit on April 28, 2016 and confirmed that no wetland was present at this site.

#### **LEBANON #3**

The PADEP had a comment about the potential presence of a wetland at this site (Figure 4). PADEP was present during this site visit on April 28, 2016 and confirmed that no wetland was present at this site.



#### **CUMBERLAND #1**

The PADEP had a comment about the potential presence of a wetland at this site (Figure 5). PADEP was present during this site visit on April 28, 2016 and confirmed that no wetland was present at this site.

#### **CUMBERLAND #2**

PADEP had a comment about the wetland boundaries at this site (Figure 6). PADEP was present during this site visit on April 28, 2016 and confirmed the previously delineated wetland boundaries of W-J10 and W-I36.

#### **CUMBERLAND #3**

The PADEP had a comment about the potential presence of a wetland at this site (Figure 7). PADEP was present during this site visit on April 28, 2016 and confirmed that no wetland was present at this site. See Photographs 5 and 6.

#### **CUMBERLAND #4**

The PADEP had a comment about the potential presence of a wetland at this site (Figure 7). PADEP was present during this site visit on April 28, 2016 and confirmed that no wetland was present at this site. See Photographs 7 and 8.

#### **CUMBERLAND #5**

The PADEP had a comment about the potential presence of a wetland at this site (Figure 8). PADEP was not present during this site visit on April 27, 2016. Rettew and Tetra Tech confirmed that no wetland was present at this site in the existing right-of-way (ROW) or adjacent woodland. See Photographs 9 and 10 in addition to the upland data form taken at this site in the woodland adjacent to the existing ROW (Cumberland #5).

#### **CUMBERLAND #6**

The PADEP had a comment about the potential presence of a wetland at this site (Figure 9). PADEP was present during this site visit on April 28, 2016 and confirmed that no wetland was present at this site.

#### **CUMBERLAND #7**

The PADEP had a comment about the wetland boundaries and the potential presence of a wetland at this site (Figure 9). PADEP was present during this site visit on April 28, 2016 and confirmed the previously delineated boundaries of W-K5, W-19d, and W-K4 and confirmed that no additional wetlands were present at this site. See Photographs 11 and 12.

#### **CUMBERLAND #8**

The PADEP had a comment about the potential presence of a wetland at this site (Figure 9). PADEP was present during this site visit on April 28, 2016 and confirmed the presence and boundaries of W-JH3, a newly delineated palustrine emergent (PEM) wetland. W-JH3 is located within a work space west of Hoot Owl Road. See Photographs 13 and 14 in addition to the wetland and upland data forms for W-JH3.

#### **CUMBERLAND #9**

The PADEP had a comment about the potential presence of a wetland at this site (Figure 10). PADEP was present during this site visit on April 28, 2016 and confirmed that no wetland was present at this site.



While conducting the field review at this site, earth disturbance in the vicinity of the site was noted. PADEP determined that the earth disturbance in the vicinity of site was done by an unidentified third party and that earth disturbance was not the result of project-related activity by Sunoco.

#### **CUMBERLAND #10**

The PADEP had a comment about the potential presence of a wetland at this site (Figure 10). PADEP was present during this site visit on April 28, 2016 and confirmed that no wetland was present at this site.

While conducting the field review at this site, earth disturbance in the vicinity of the site was noted. PADEP determined that the earth disturbance in the vicinity of site was done by an unidentified third party and that earth disturbance was not the result of project-related activity by Sunoco.

#### **JUNIATA #1**

PADEP had a comment about the wetland boundaries at this site (Figure 11). PADEP was present during this site visit on April 27, 2016 and confirmed the previously delineated wetland boundaries of W-K58 and W-Q64.

#### **JUNIATA #2**

The PADEP had a comment about the potential presence of a wetland at this site (Figure 11). PADEP was present during this site visit on April 27, 2016 and confirmed that no wetland was present at this site.

#### **HUNTINGDON #1**

The PADEP had a comment about the potential presence of a stream at this site (Figure 12). PADEP was present during this site visit on April 27, 2016 and confirmed the presence of S-JH4, a newly identified intermittent stream. S-JH4 flows through W-L11. See Photographs 15 and 16 in addition to the stream data form for S-JH4.

#### **HUNTINGDON #2**

PADEP had a comment about the wetland boundaries at this site (Figure 12). PADEP was present during this site visit on April 27, 2016 and confirmed the previously delineated wetland boundary of W-L12.

#### **HUNTINGDON #3**

The PADEP had a comment about the potential presence of a wetland at this site (Figure 12). PADEP was present during this site visit on April 27, 2016 and confirmed that no wetland was present at this site. See Photographs 17 and 18.

#### **HUNTINGDON #4**

The PADEP had a comment about the wetland Cowardin classification at this site (Figure 13). PADEP was present during this site visit on April 27, 2016 and confirmed that no wetland was present at this site. PADEP determined that previously delineated W-46b does not meet wetland soil or hydrology criteria and therefore is not a jurisdictional wetland. See Photographs 19 and 20.

#### **HUNTINGDON #5**

The PADEP had a comment about the potential presence of a stream at this site (Figure 14). PADEP was present during this site visit on April 27, 2016 and confirmed that no stream was present at this site.



#### **HUNTINGDON #6A**

The PADEP had a comment about the wetland Cowardin classification at this site (Figure 15). PADEP was present during this site visit on April 27, 2016 and confirmed previously delineated wetland boundaries and the wetland Cowardin classification of W-M7.

While conducting the field review at this site, earth disturbance in the vicinity of W-M7 was noted. PADEP determined that earth disturbance in the vicinity of W-M7 was done by an unidentified third party and that the earth disturbance was not the result of project-related activity by Sunoco. PADEP spoke to the landowner about the earth disturbance at this site.

#### **HUNTINGDON #7**

The PADEP had a comment about the potential extension of S-BB108 at this site (Figure 16). PADEP was not present during this site visit on April 26, 2016. Tetra Tech and Rettew confirmed that S-BB108 has a defined bed and bank through the survey corridor and extended the stream through the survey corridor.

#### **HUNTINGDON #8**

The PADEP had a comment about the potential extension of S-Y18 at this site (Figure 17). PADEP was not present during this site visit on April 26, 2016. Tetra Tech and Rettew confirmed that the defined bed and bank of S-Y18 continued past the previously identified endpoint and extended S-Y18 to a point where it loses bed and bank definition and goes to sheet flow within W-Y12. See Photographs 21 and 22.

#### **HUNTINGDON #9**

The PADEP had a comment about a potential stream at this site (Figure 17). PADEP was not present during this site visit on April 26, 2016. Tetra Tech and Rettew identified S-JH2, with an ephemeral reach and an intermittent reach within the survey corridor. S-JH2 flows into S-Y19, a previously identified stream in the survey corridor. See Photographs 23 and 24 in addition to stream data forms for the ephemeral and intermittent portions of S-JH2.

#### **HUNTINGDON #10**

The PADEP had a comment about the wetland boundaries and the potential presence of a wetland at this site (Figure 18). PADEP was not present during this site visit on April 26, 2016. Tetra Tech and Rettew confirmed the previously delineated wetland boundary of W-L36 and that no additional wetlands were present at this site. See Photographs 25 and 26 in addition to the upland data form for Huntingdon #10.

#### **BLAIR #1**

The PADEP had a comment about the wetland boundary at this site (Figure 19). PADEP was not present during this site visit on April 26, 2016. Tetra Tech and Rettew confirmed the previously delineated wetland boundaries of W-M24. See Photographs 27 and 28 in addition to the upland data form for Blair #1.

#### **BLAIR #2**

The PADEP had a comment about the wetland boundary at this site (Figure 20). PADEP was not present during this site visit on April 26, 2016. Rettew and Tetra Tech confirmed the previously delineated wetland boundaries of W-BB124 and W-Q59. See Photographs 29 and 30 in addition to the upland data form for Blair #2.



### **BLAIR #3**

The PADEP had a comment about S-Q59 continuing through the ROW at this site (Figure 21). PADEP was not present during this site visit on April 26, 2016. Rettew and Tetra Tech confirmed that S-Q59 loses defined stream bed and bank at the previously identified location; therefore, S-Q59 does not continue through the ROW towards Dry Run Road. See Photographs 31 and 32.

### **BLAIR #4**

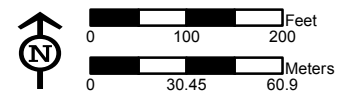
The PADEP had a comment about a potential stream or wetland at this site (Figure 21). PADEP was not present during this site visit on April 26, 2016. Tetra Tech and Rettew confirmed that there were no streams or wetlands present at this site. See Photographs 33 and 34 in addition to the upland data form for Blair #4.

## FIGURES



- Legend**
- ★ PADEP Comment Location
  - 📍 Photo Location
  - Stream
  - Wetland
    - ▨ PEM
    - ▨ PFO
    - ▨ PSS
    - ▨ PuB
  - Access Road
  - Alignment Centerline
  - Limit of Disturbance
  - Study Area

**Sheet Identifier**



**PADEP FIELD REVIEW MAP  
BERKS #1  
FIGURE 1**  
**PENNSYLVANIA PIPELINE PROJECT**  
**FEBRUARY 25, 2016 ALIGNMENT**  
**SUNOCO LOGISTICS, L.P.**  
**BERKS COUNTY, PA**

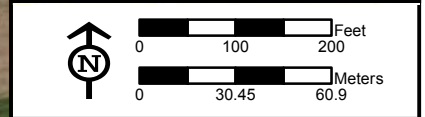
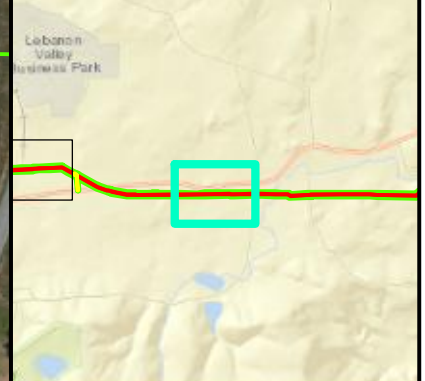


**Notes:**  
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).  
 2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.



- Legend**
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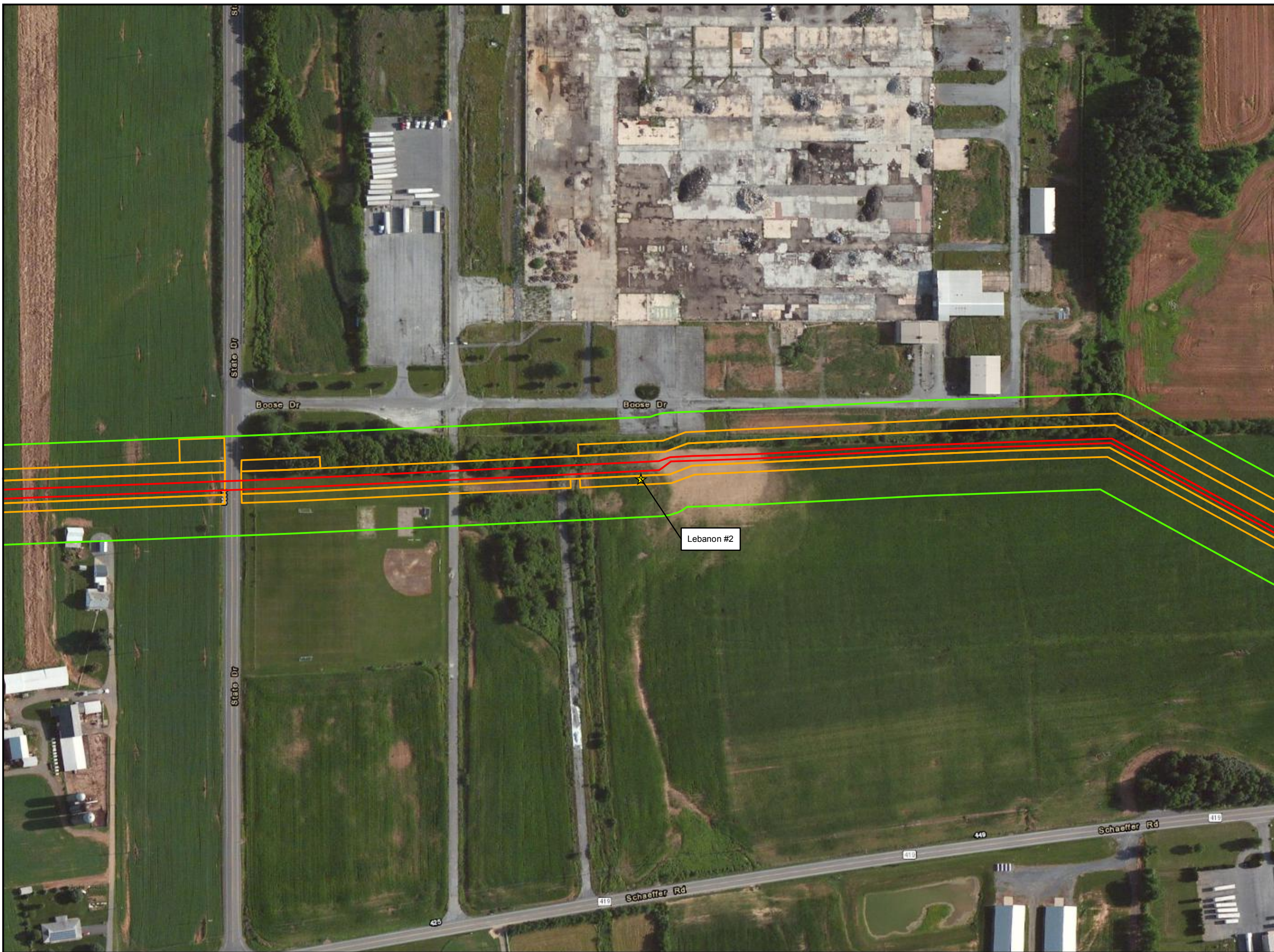
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**PADEP FIELD REVIEW MAP  
LEBANON #1  
FIGURE 2**  
**PENNSYLVANIA PIPELINE PROJECT**  
**FEBRUARY 25, 2016 ALIGNMENT**  
**SUNOCO LOGISTICS, L.P.**  
**LEBANON COUNTY, PA**

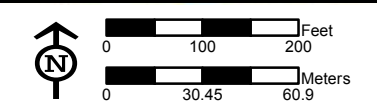
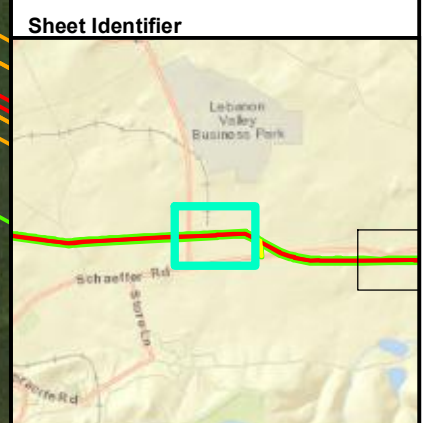


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Lebanon #2



**PADEP FIELD REVIEW MAP  
LEBANON #2  
FIGURE 3**  
**PENNSYLVANIA PIPELINE PROJECT**  
**FEBRUARY 25, 2016 ALIGNMENT**  
**SUNOCO LOGISTICS, L.P.**  
**LEBANON COUNTY, PA**



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  - ▨ PSS
  - ▨ PuB
  - Access Road
  - Alignment Centerline
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  - Study Area

Lebanon #3

SAS

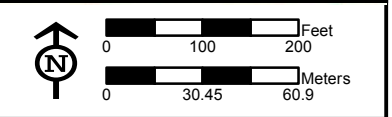
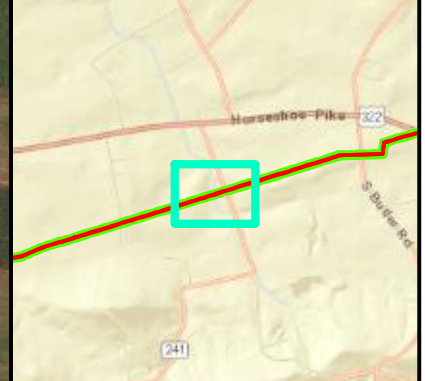
241

Mt. Wilson Rd

241

241

**Sheet Identifier**



**PADEP FIELD REVIEW MAP  
LEBANON #3  
FIGURE 4  
PENNSYLVANIA PIPELINE PROJECT  
FEBRUARY 25, 2016 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
LEBANON COUNTY, PA**



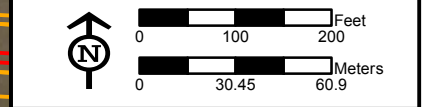
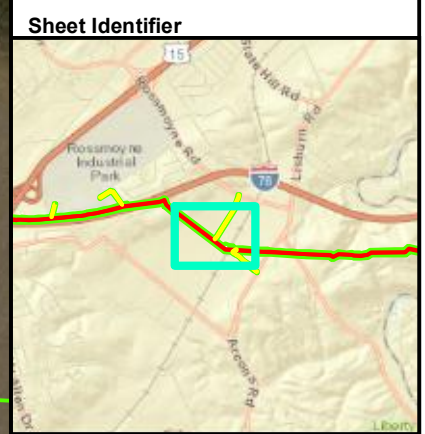
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Cumberland #1

- Legend**
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  - ▨ PFO
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  - ▨ PuB
  - Access Road
  - Alignment Centerline
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  - Study Area

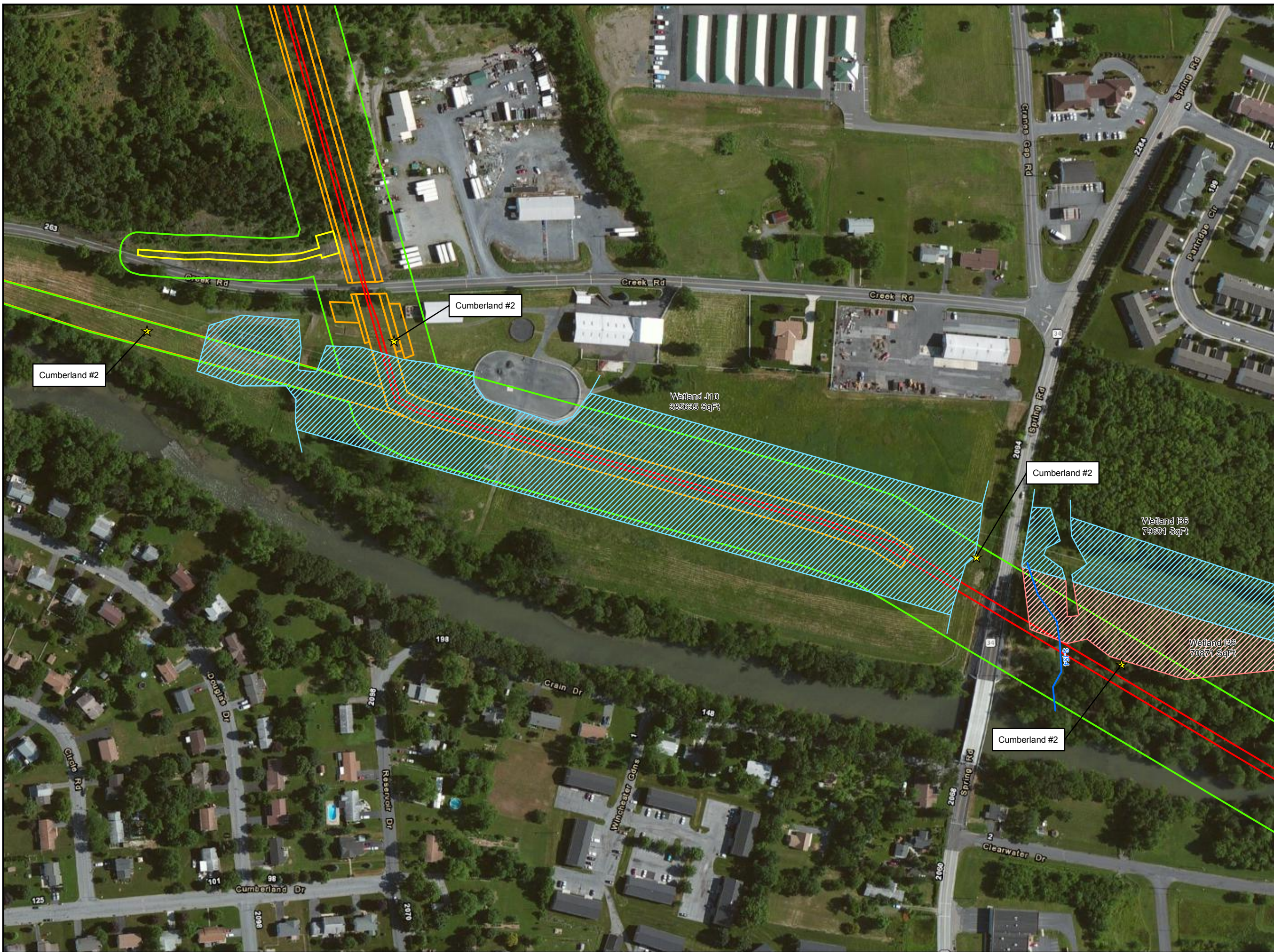


**PADEP FIELD REVIEW MAP  
CUMBERLAND #1  
FIGURE 5**  
**PENNSYLVANIA PIPELINE PROJECT**  
**FEBRUARY 25, 2016 ALIGNMENT**  
**SUNOCO LOGISTICS, L.P.**  
**CUMBERLAND COUNTY, PA**

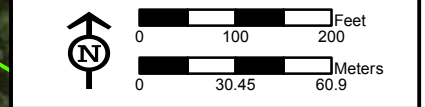
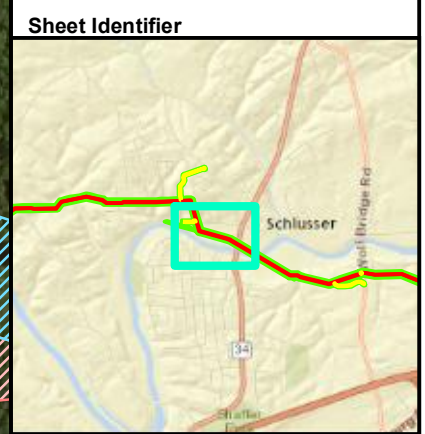


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- Legend**
- ★ PADEP Comment Location
  - Photo Location
  - Stream
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    - ▨ PEM
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  - Study Area

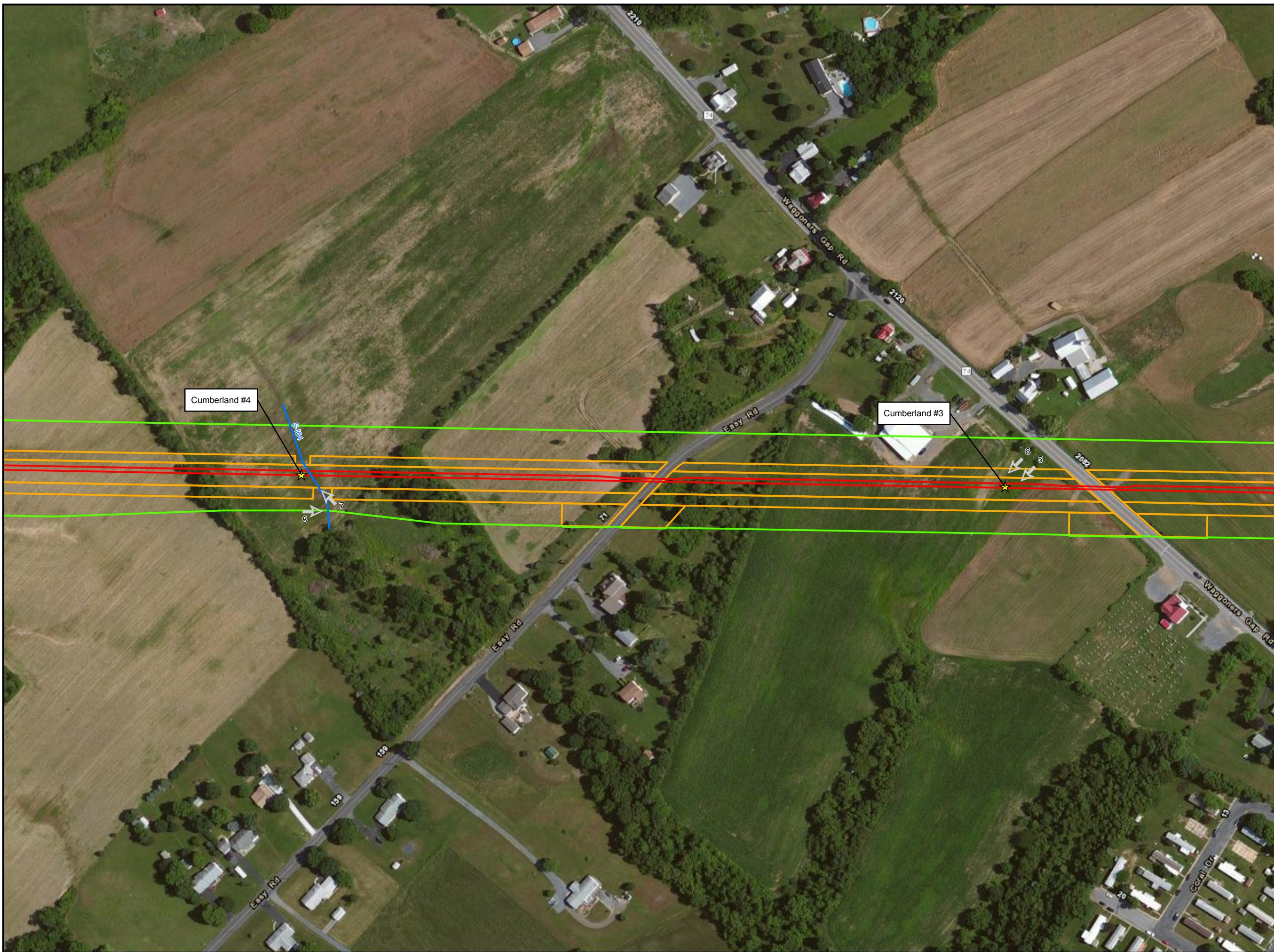


**PADEP FIELD REVIEW MAP  
CUMBERLAND #2  
FIGURE 6  
PENNSYLVANIA PIPELINE PROJECT  
FEBRUARY 25, 2016 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
CUMBERLAND COUNTY, PA**



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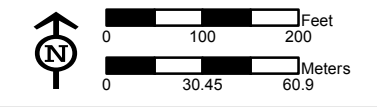
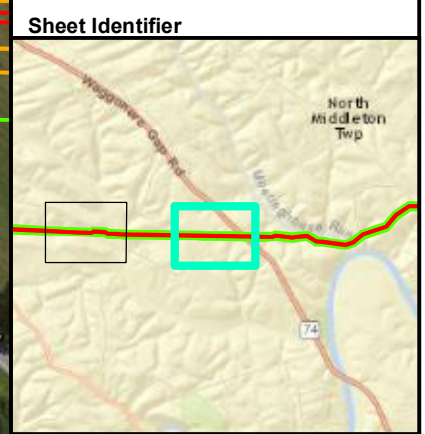
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- Legend**
- ★ PADEP Comment Location
  - Photo Location
  - Stream
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    - ▨ PuB
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Cumberland #4

Cumberland #3

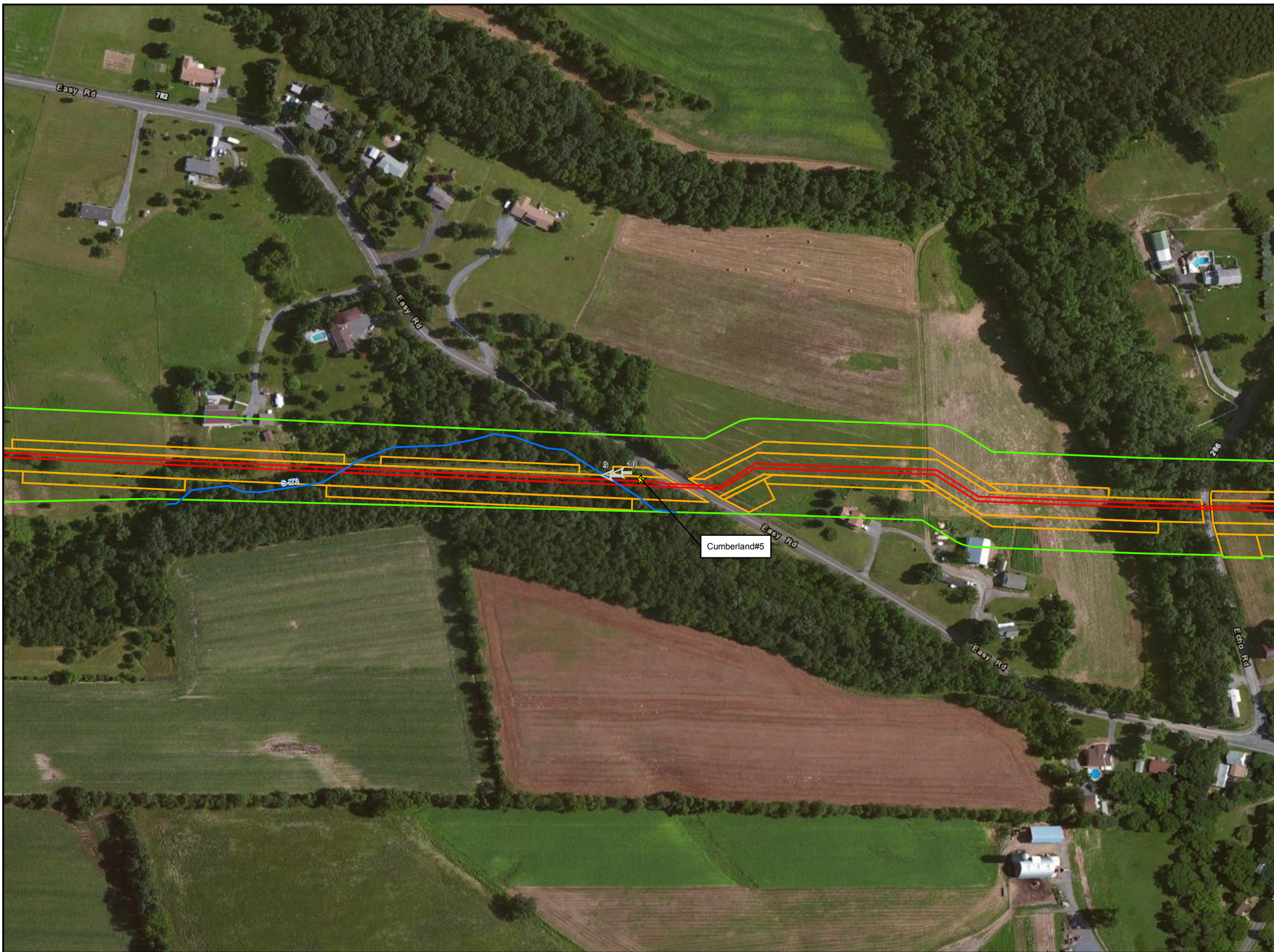


**PADEP FIELD REVIEW MAP  
CUMBERLAND #3 AND #4  
FIGURE 7**  
**PENNSYLVANIA PIPELINE PROJECT  
FEBRUARY 25, 2016 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
CUMBERLAND COUNTY, PA**

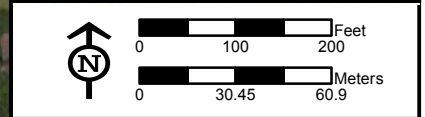
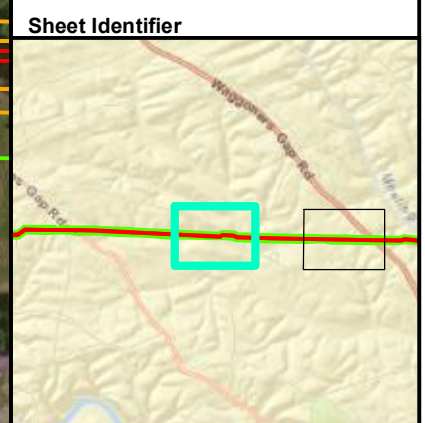


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- Legend**
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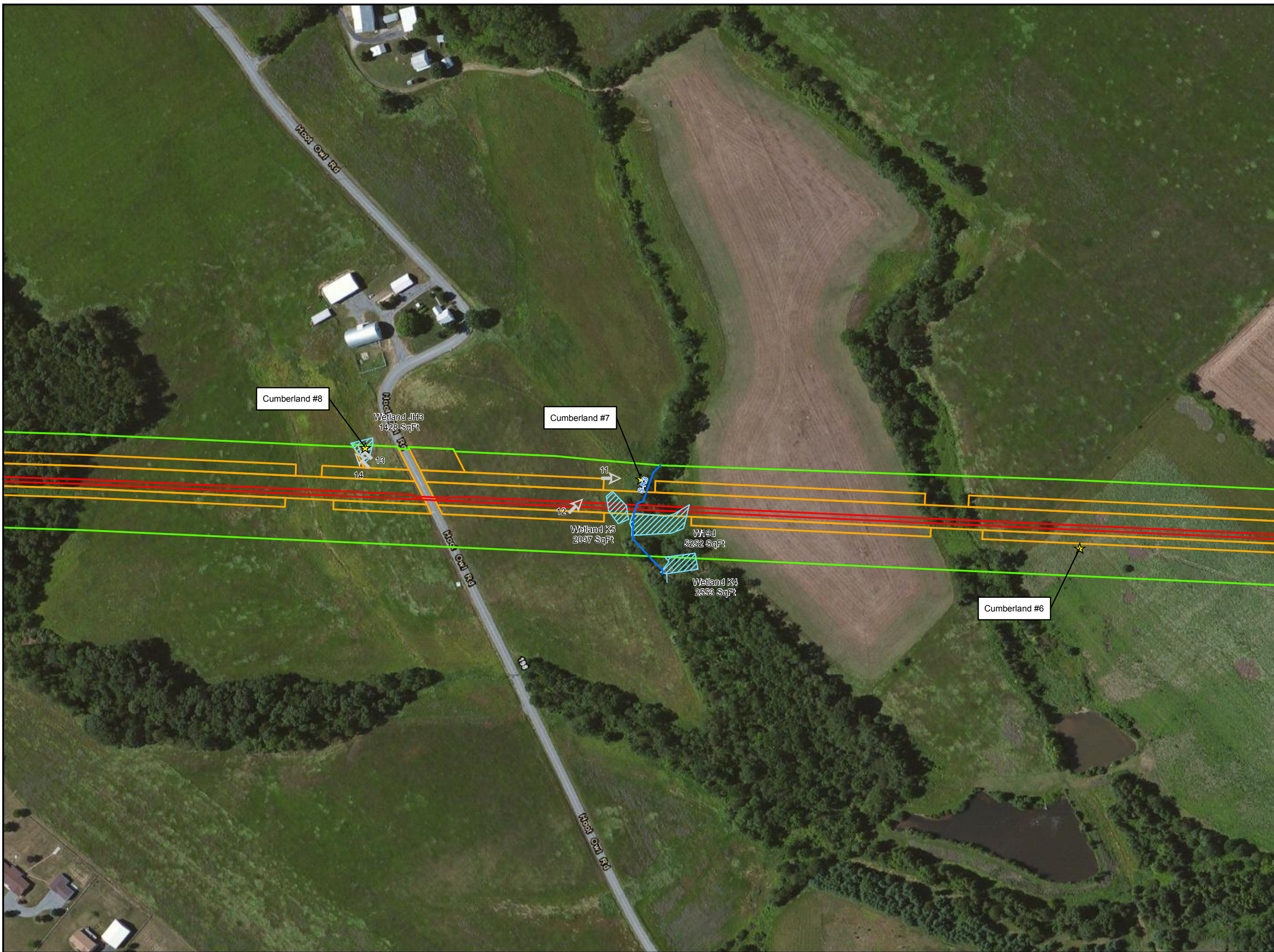


**PADEP FIELD REVIEW MAP  
CUMBERLAND #5  
FIGURE 8**  
 PENNSYLVANIA PIPELINE PROJECT  
 FEBRUARY 25, 2016 ALIGNMENT  
 SUNOCO LOGISTICS, L.P.  
 CUMBERLAND COUNTY, PA



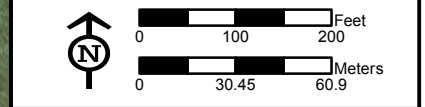
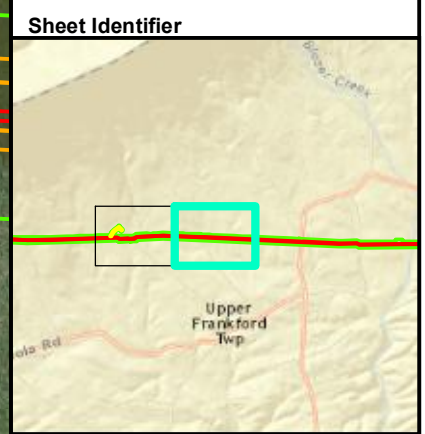
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**Legend**

- ★ PADEP Comment Location
- 📍 Photo Location
- Stream
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- ▨ PEM
- ▨ PFO
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- ▨ PuB
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**PADEP FIELD REVIEW MAP  
CUMBERLAND #6, #7 AND #8  
FIGURE 9**

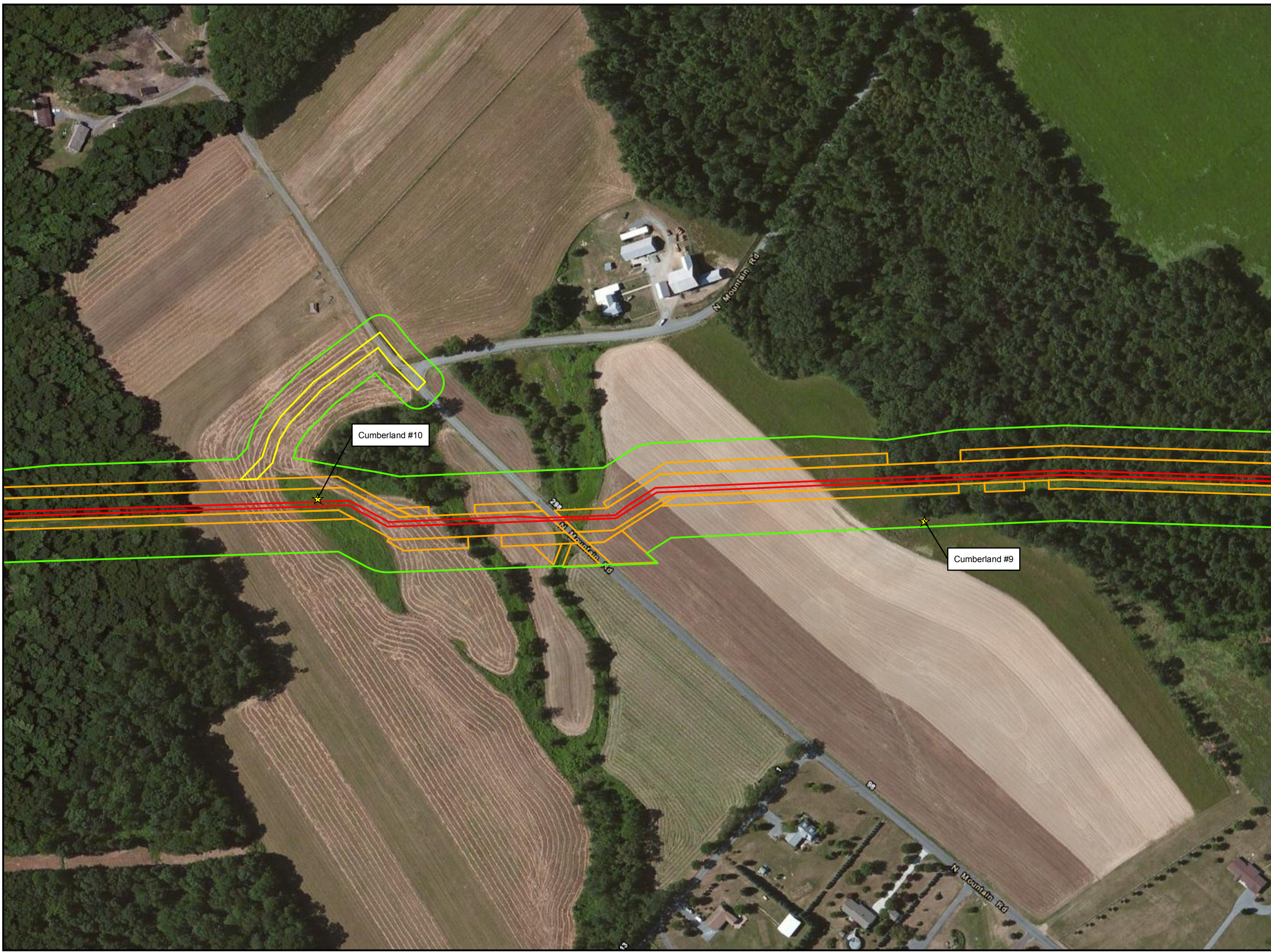
**PENNSYLVANIA PIPELINE PROJECT  
FEBRUARY 25, 2016 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
CUMBERLAND COUNTY, PA**



**Notes:**

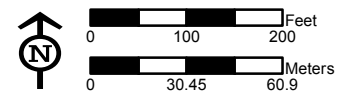
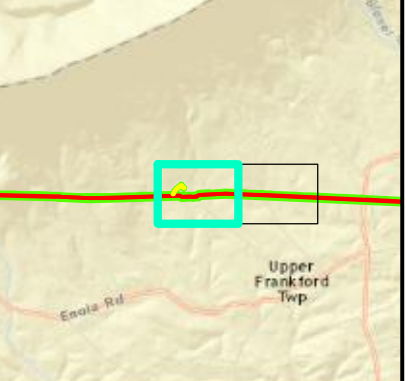
- 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).
- 2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.

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- Legend**
- ★ PADEP Comment Location
  - 📍 Photo Location
  - Stream
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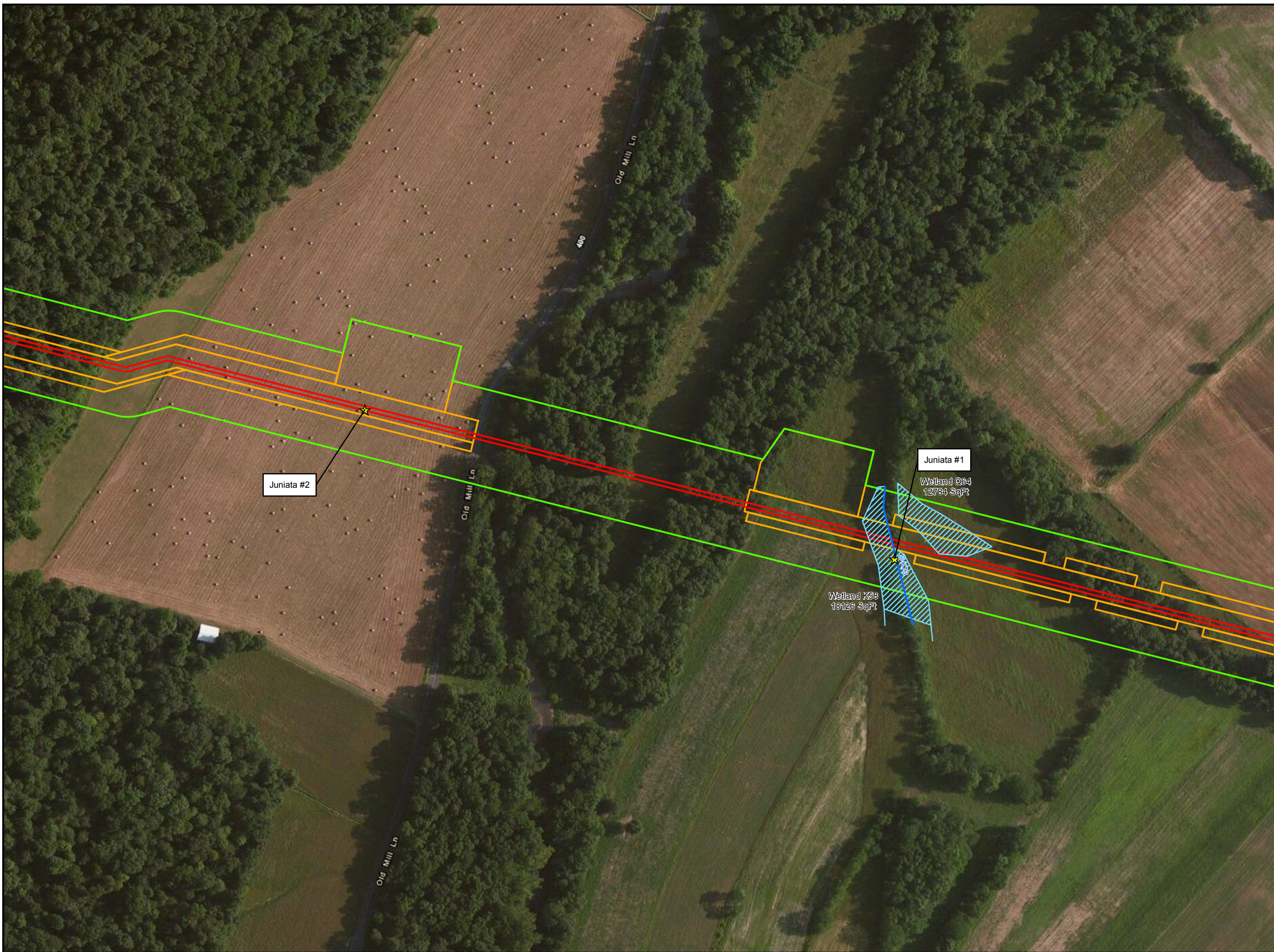
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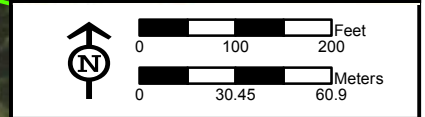
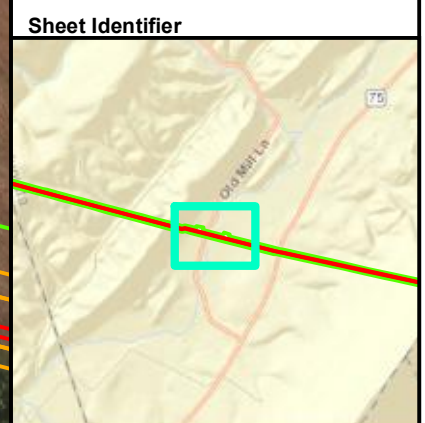
**PADEP FIELD REVIEW MAP  
CUMBERLAND #9 AND #10  
FIGURE 10**  
**PENNSYLVANIA PIPELINE PROJECT  
FEBRUARY 25, 2016 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
CUMBERLAND COUNTY, PA**



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**
- ★ PADEP Comment Location
  - 📍 Photo Location
  - Stream
  - Wetland
  - ▨ PEM
  - ▨ PFO
  - ▨ PSS
  - ▨ PuB
  - Access Road
  - Alignment Centerline
  - Limit of Disturbance
  - Study Area



**PADEP FIELD REVIEW MAP  
JUNIATA #1 AND #2  
FIGURE 11  
PENNSYLVANIA PIPELINE PROJECT  
FEBRUARY 25, 2016 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
JUNIATA COUNTY, PA**

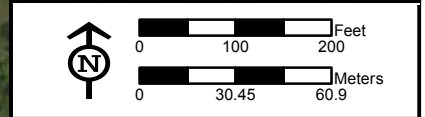
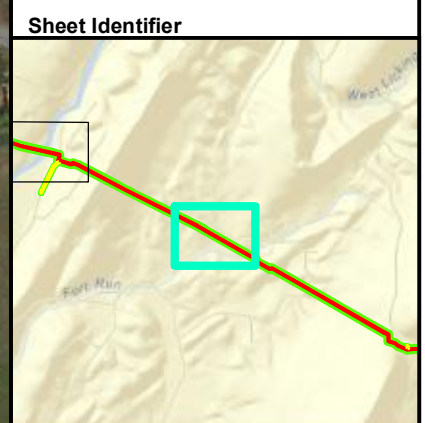


**Notes:**  
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).  
 2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.

PGH\_P:\GIS\SUNOCO\MARINER\_EAST\_2M\XD\PEN\PIPELINE\_PADEP\_FIELDREVIEW.MXD 05/12/16 JN



- Legend**
- ★ PADEP Comment Location
  - 📍 Photo Location
  - Stream
  - Wetland
    - ▨ PEM
    - ▨ PFO
    - ▨ PSS
    - ▨ PuB
  - Access Road
  - Alignment Centerline
  - Limit of Disturbance
  - Study Area

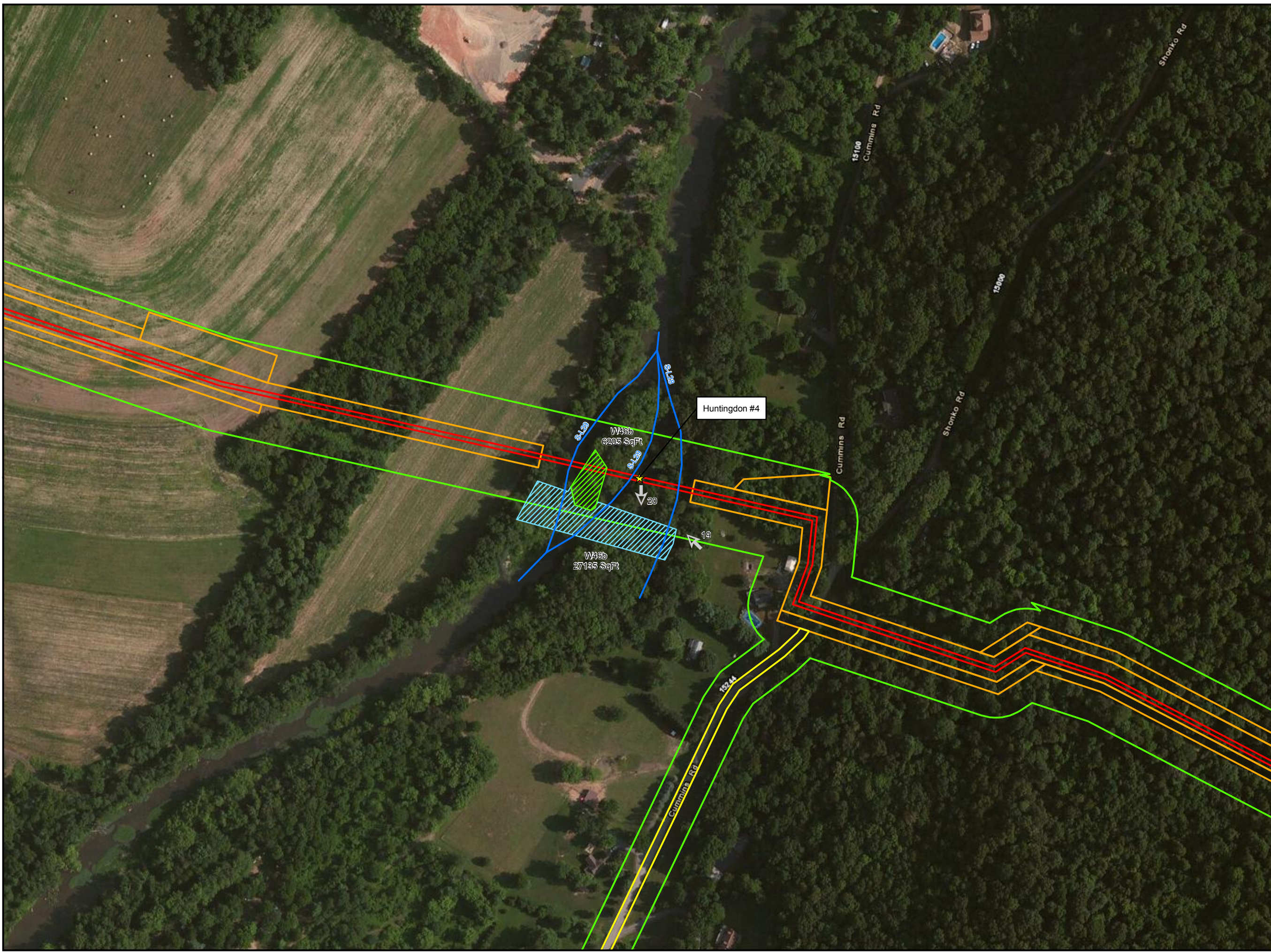


**PADEP FIELD REVIEW MAP  
HUNTINGDON #1, #2 AND #3  
FIGURE 12  
PENNSYLVANIA PIPELINE PROJECT  
FEBRUARY 25, 2016 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
HUNTINGDON COUNTY, PA**



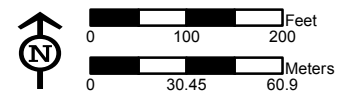
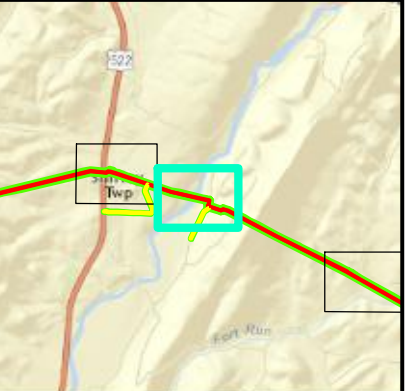
**Notes:**  
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).  
 2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.

P:\GIS\SUNOCO\MARINER EAST\2MXPEN\PIPELINE\_PADEP\_FIELDREVIEW.MXD 05/12/16 JN



- Legend**
- ★ PADEP Comment Location
  - 📍 Photo Location
  - Stream
  - Wetland
  - ▨ PEM
  - ▨ PFO
  - ▨ PSS
  - ▨ PuB
  - Access Road
  - Alignment Centerline
  - Limit of Disturbance
  - Study Area

**Sheet Identifier**

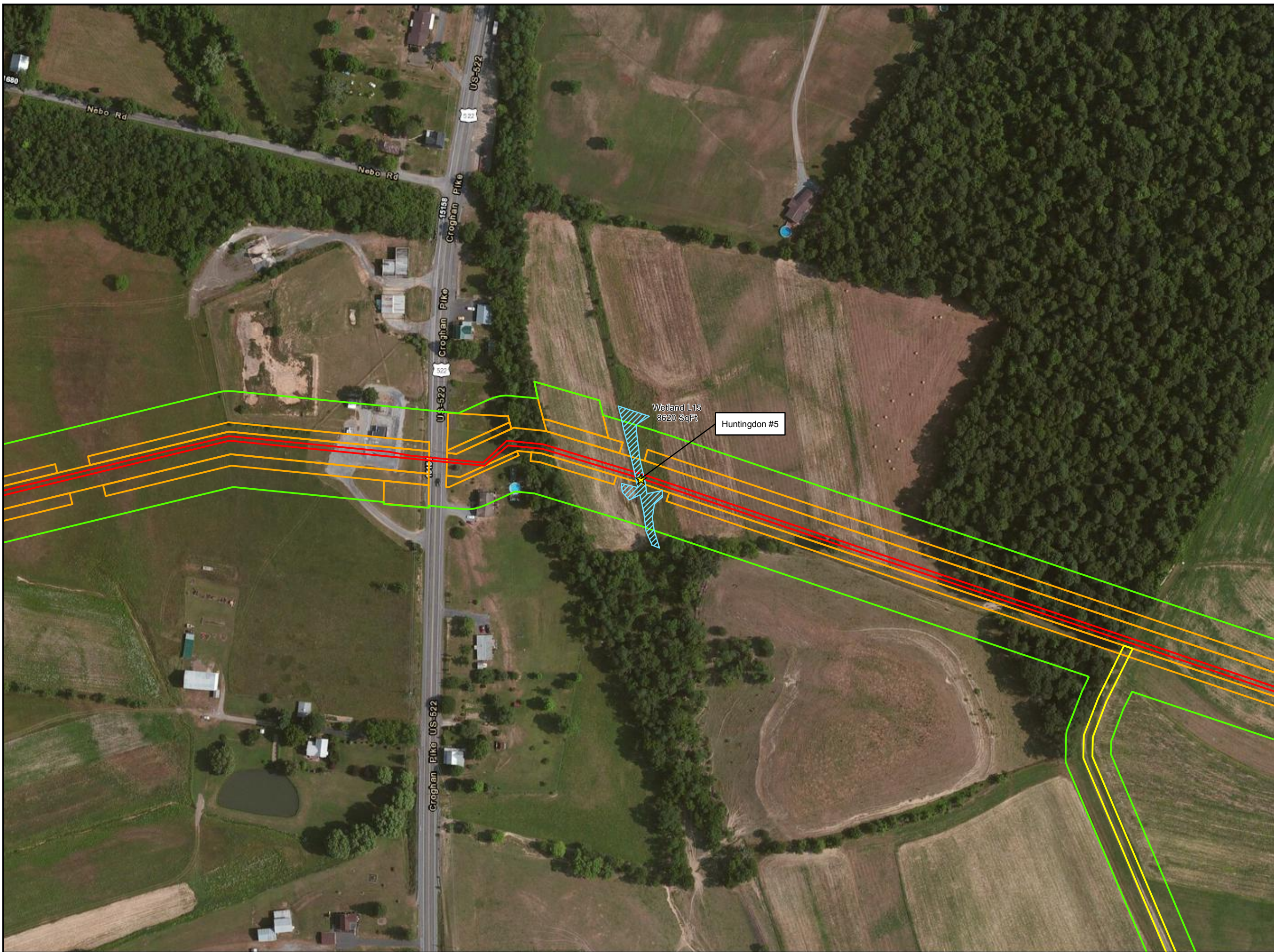


**PADEP FIELD REVIEW MAP  
HUNTINGDON #4  
FIGURE 13  
PENNSYLVANIA PIPELINE PROJECT  
FEBRUARY 25, 2016 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
HUNTINGDON COUNTY, PA**

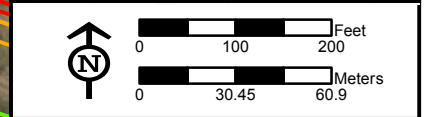
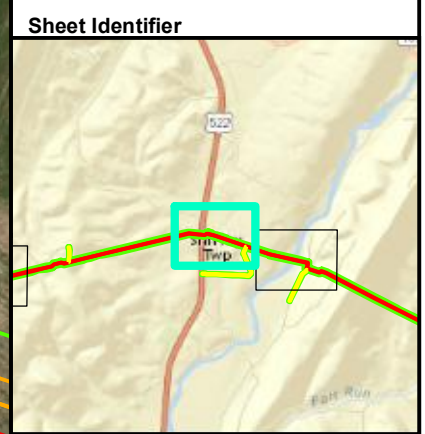


**Notes:**  
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).  
 2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.

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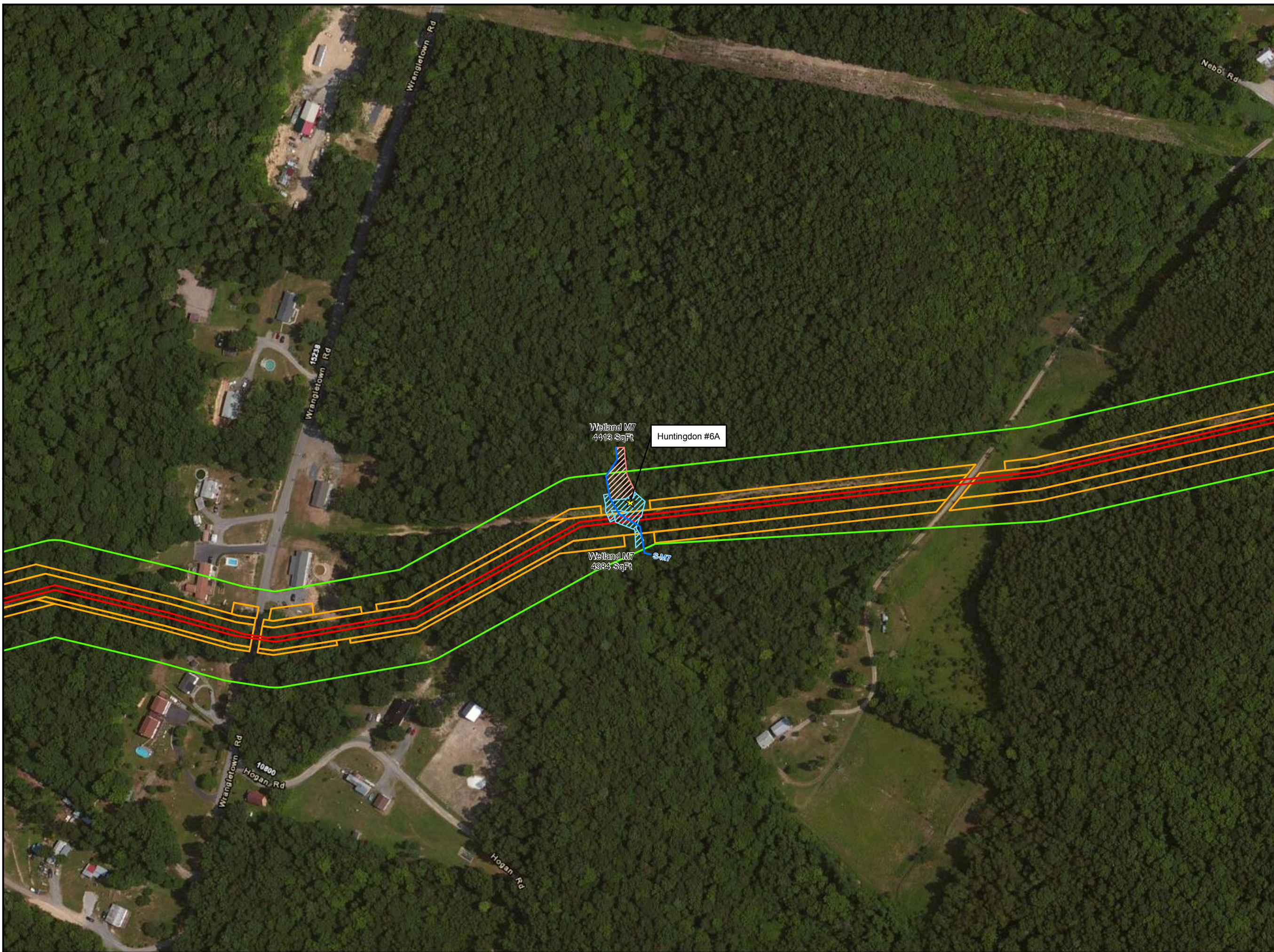
- Legend**
- ★ PADEP Comment Location
  - 📍 Photo Location
  - Stream
  - Wetland
  - ▨ PEM
  - ▨ PFO
  - ▨ PSS
  - ▨ PuB
  - Access Road
  - Alignment Centerline
  - Limit of Disturbance
  - Study Area



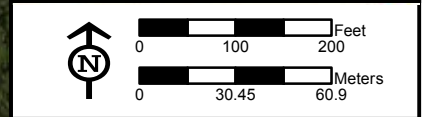
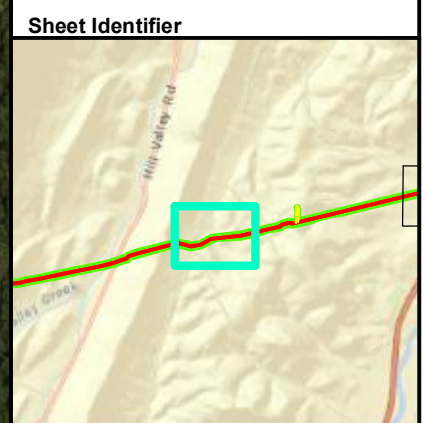
**PADEP FIELD REVIEW MAP  
HUNTINGDON #5  
FIGURE 14  
PENNSYLVANIA PIPELINE PROJECT  
FEBRUARY 25, 2016 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
HUNTINGDON COUNTY, PA**



**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**
- ★ PADEP Comment Location
  - ↖ Photo Location
  - Stream
  - Wetland
  - ▨ PEM
  - ▨ PFO
  - ▨ PSS
  - ▨ PuB
  - Access Road
  - Alignment Centerline
  - Limit of Disturbance
  - Study Area

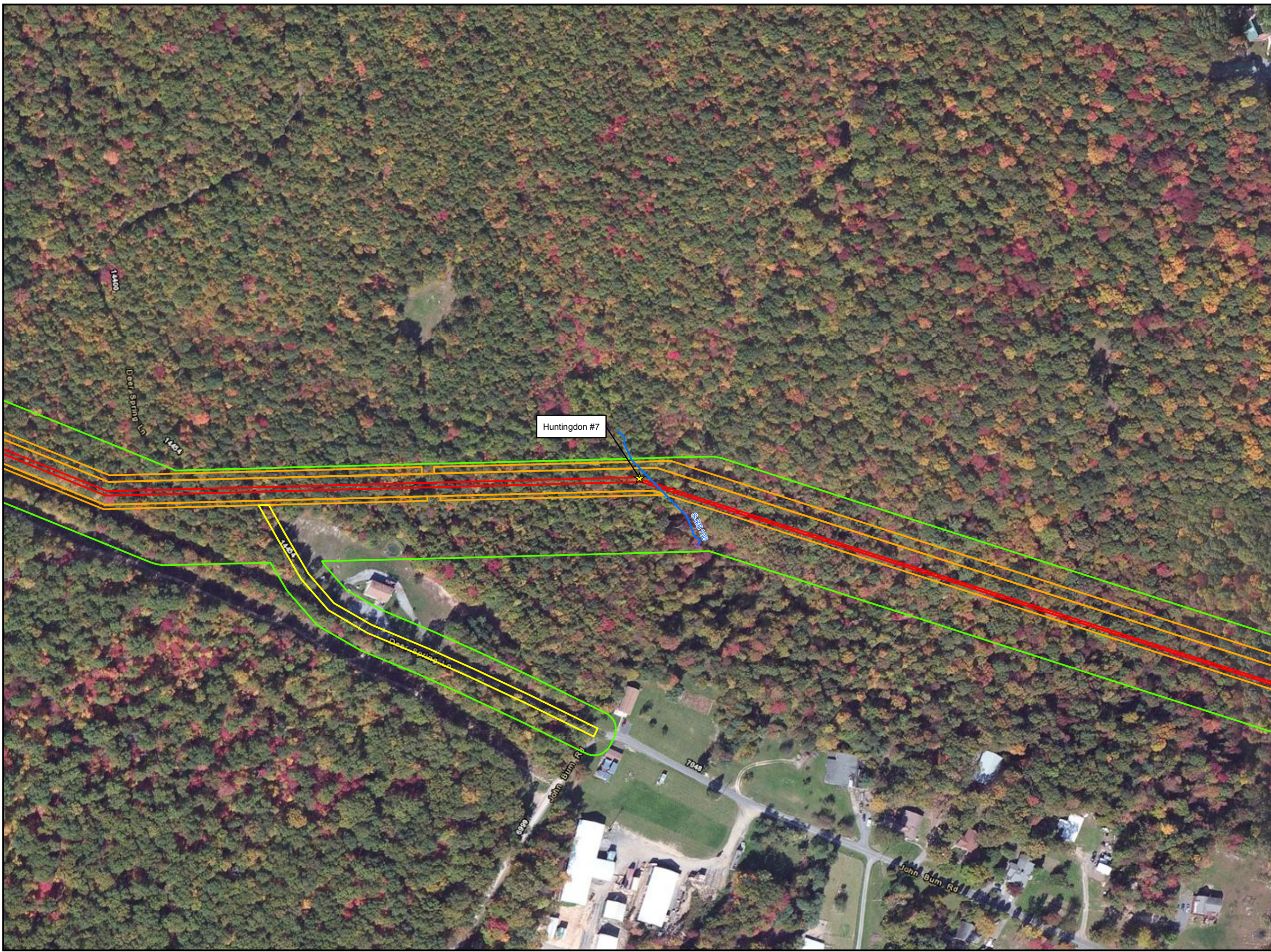


**PADEP FIELD REVIEW MAP  
HUNTINGDON #6A  
FIGURE 15  
PENNSYLVANIA PIPELINE PROJECT  
FEBRUARY 25, 2016 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
HUNTINGDON COUNTY, PA**

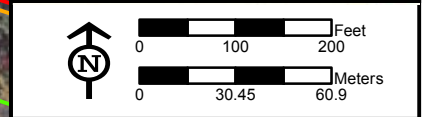
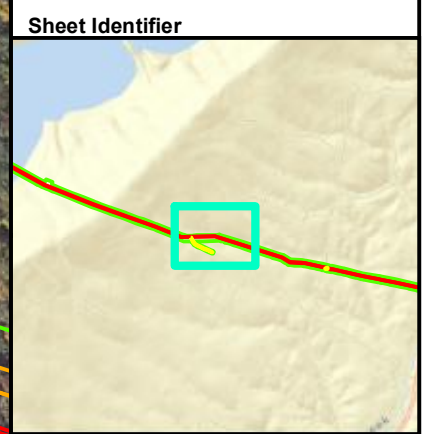


**Notes:**  
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).  
 2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.

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- Legend**
- ★ PADEP Comment Location
  - 📍 Photo Location
  - Stream
  - Wetland
  - ▨ PEM
  - ▨ PFO
  - ▨ PSS
  - ▨ PuB
  - Access Road
  - Alignment Centerline
  - Limit of Disturbance
  - Study Area

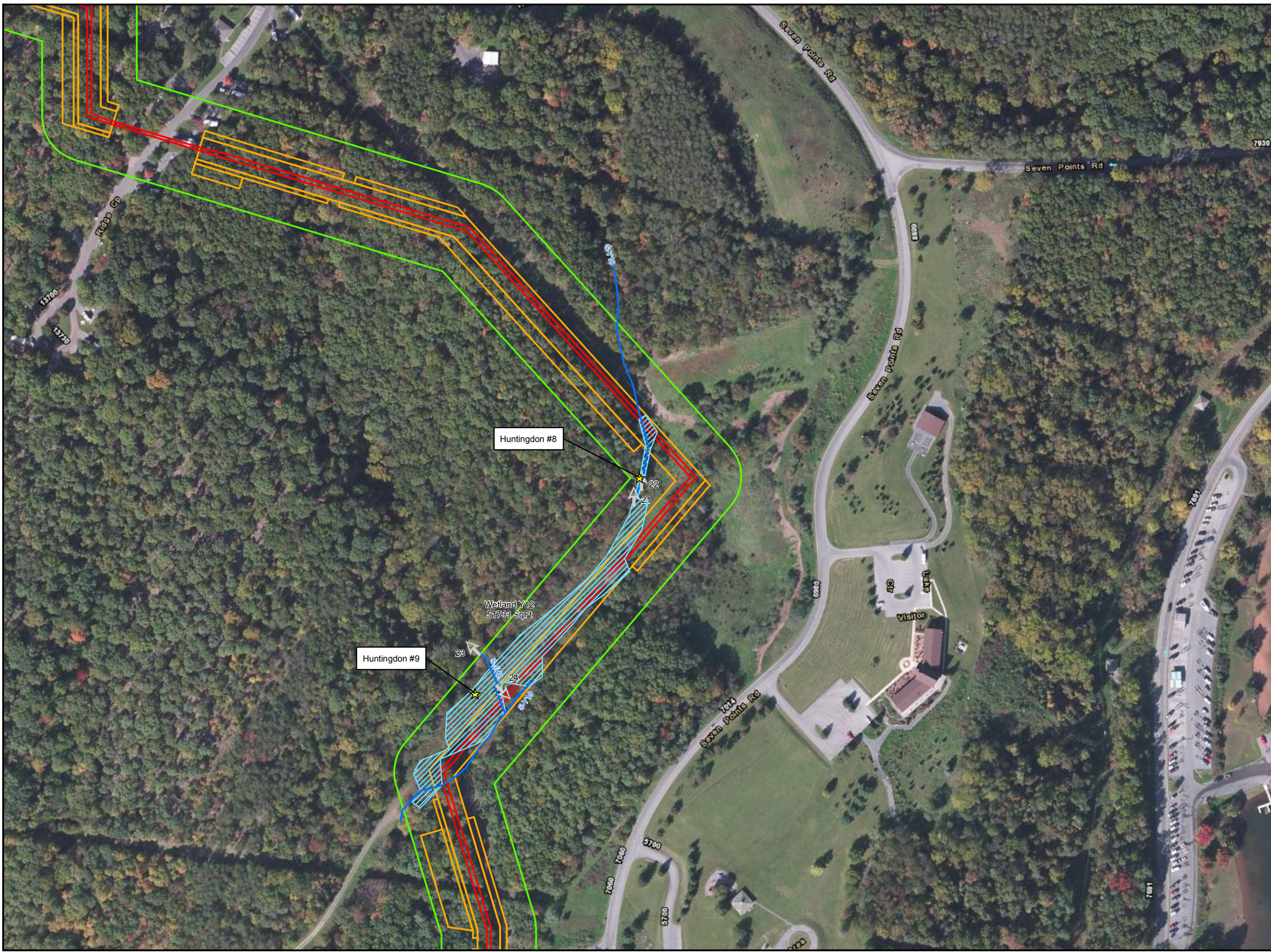


**PADEP FIELD REVIEW MAP  
HUNTINGDON #7  
FIGURE 16**  
**PENNSYLVANIA PIPELINE PROJECT**  
**FEBRUARY 25, 2016 ALIGNMENT**  
**SUNOCO LOGISTICS, L.P.**  
**HUNTINGDON COUNTY, PA**

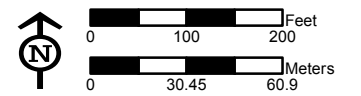
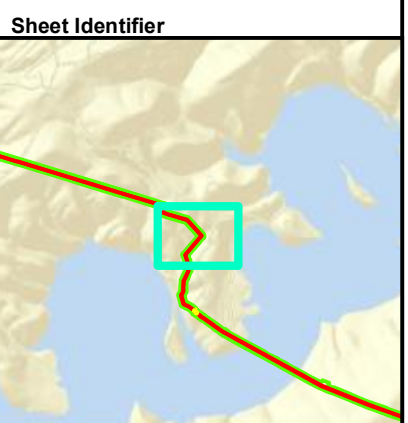


**Notes:**  
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).  
 2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.

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- Legend**
- ★ PADEP Comment Location
  - 📍 Photo Location
  - Stream
  - Wetland
    - ▨ PEM
    - ▨ PFO
    - ▨ PSS
    - ▨ PuB
  - Access Road
  - Alignment Centerline
  - Limit of Disturbance
  - Study Area



**<ACP>PADEP FIELD REVIEW MAP  
HUNTINGDON #8 & #9  
FIGURE 17  
PENNSYLVANIA PIPELINE PROJECT  
FEBRUARY 25, 2016 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
Huntingdon COUNTY, PA</ACP>**

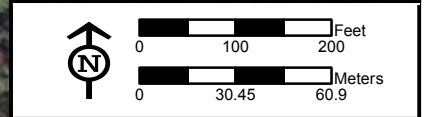
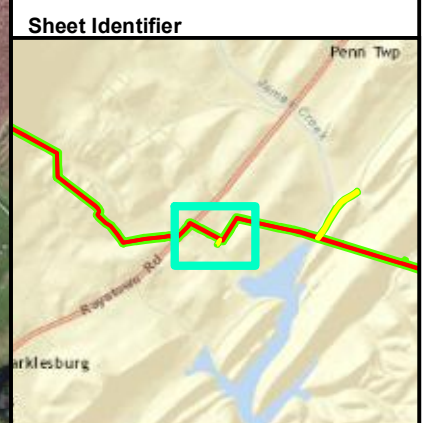


**Notes:**  
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).  
 2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.

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- Legend**
- ★ PADEP Comment Location
  - 📍 Photo Location
  - Stream
  - Wetland
  - ▨ PEM
  - ▨ PFO
  - ▨ PSS
  - ▨ PuB
  - Access Road
  - Alignment Centerline
  - Limit of Disturbance
  - Study Area

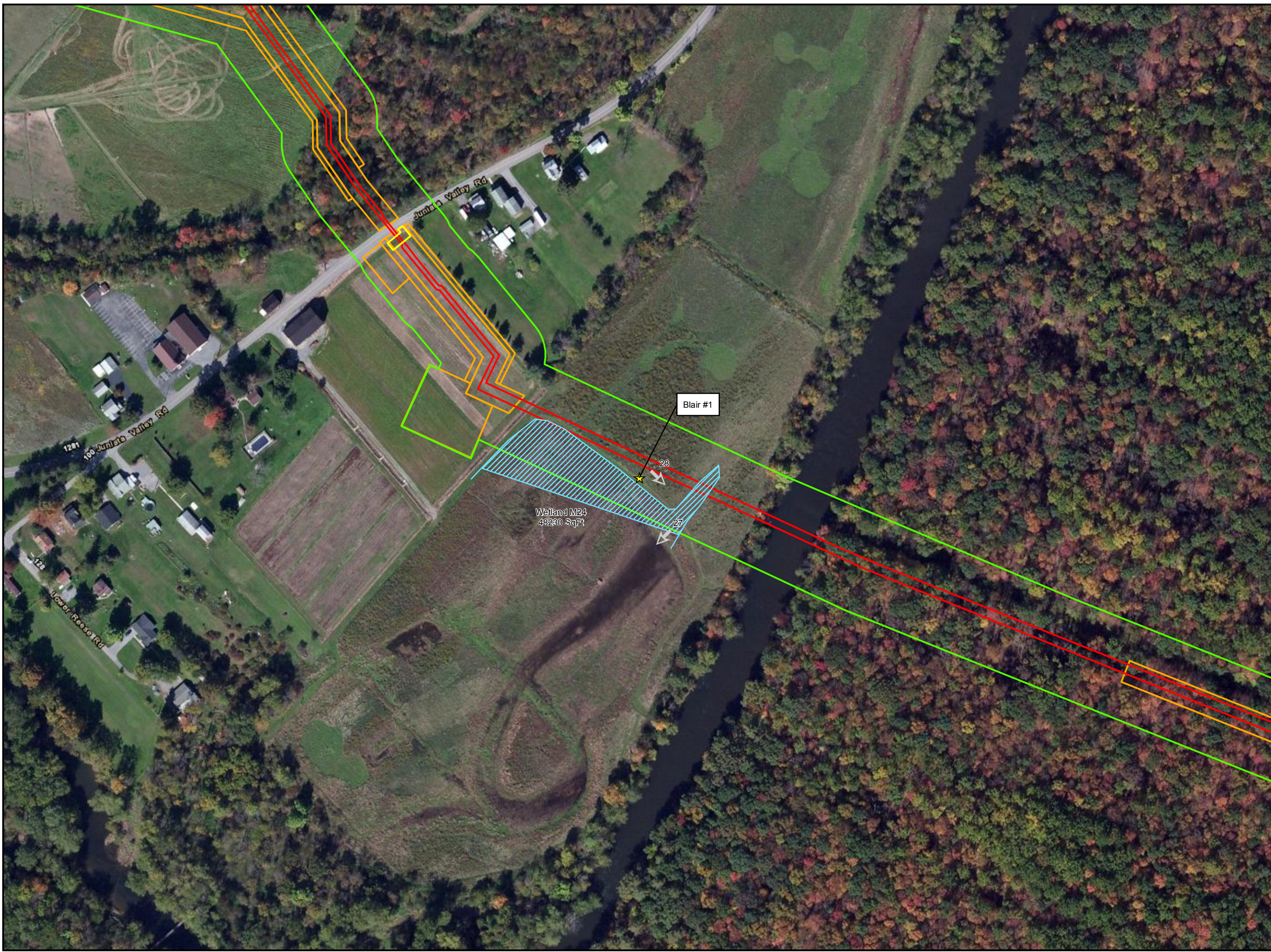


**PADEP FIELD REVIEW MAP  
HUNTINGDON #10  
FIGURE 18  
PENNSYLVANIA PIPELINE PROJECT  
FEBRUARY 25, 2016 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
HUNTINGDON COUNTY, PA**

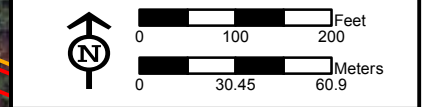
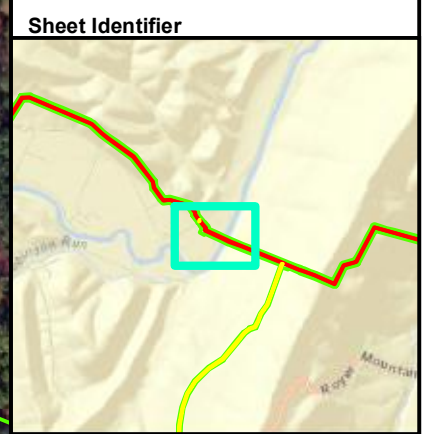


**Notes:**  
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).  
 2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.

PGH\_P\GIS\SUNOCO\MARINER\_EAST\_2\MXD\PENPIPELINE\_PADEP\_FIELDREVIEW.MXD 05/12/16 JN



- Legend**
- ★ PADEP Comment Location
  - 📍 Photo Location
  - Stream
  - Wetland
  - ▨ PEM
  - ▨ PFO
  - ▨ PSS
  - ▨ PuB
  - Access Road
  - Alignment Centerline
  - Limit of Disturbance
  - Study Area

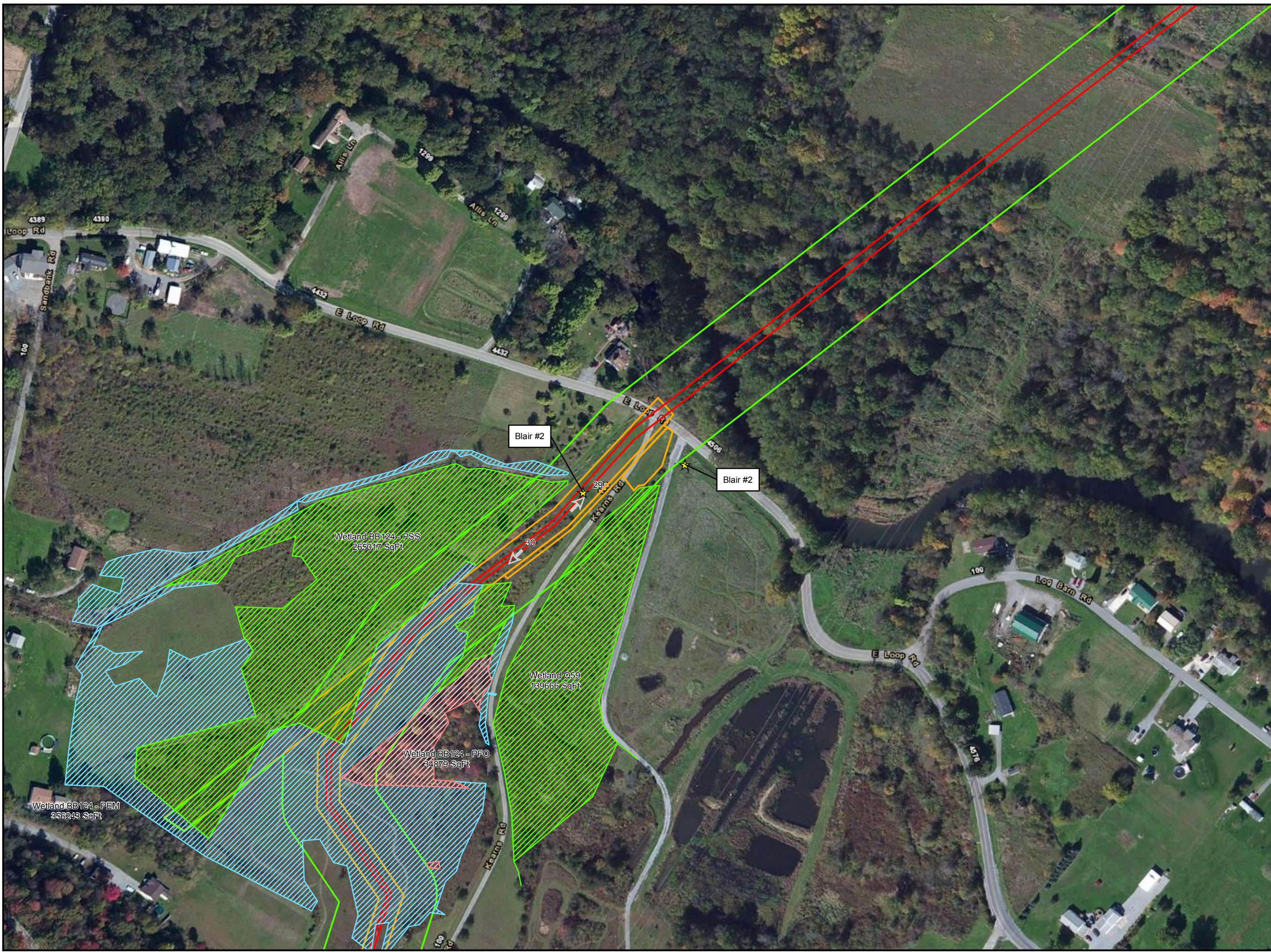


**PADEP FIELD REVIEW MAP  
BLAIR #1  
FIGURE 19  
PENNSYLVANIA PIPELINE PROJECT  
FEBRUARY 25, 2016 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
BLAIR COUNTY, PA**



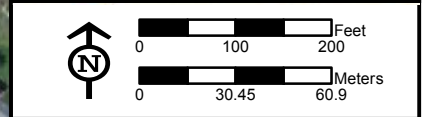
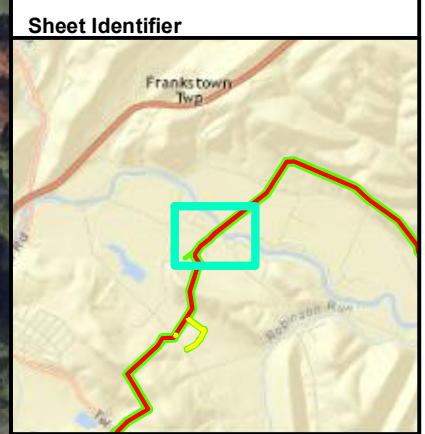
**Notes:**  
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).  
 2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.

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**Legend**

- ★ PADEP Comment Location
- 📍 Photo Location
- Stream
- Wetland
- ▨ PEM
- ▨ PFO
- ▨ PSS
- ▨ PuB
- Access Road
- Alignment Centerline
- Limit of Disturbance
- Study Area

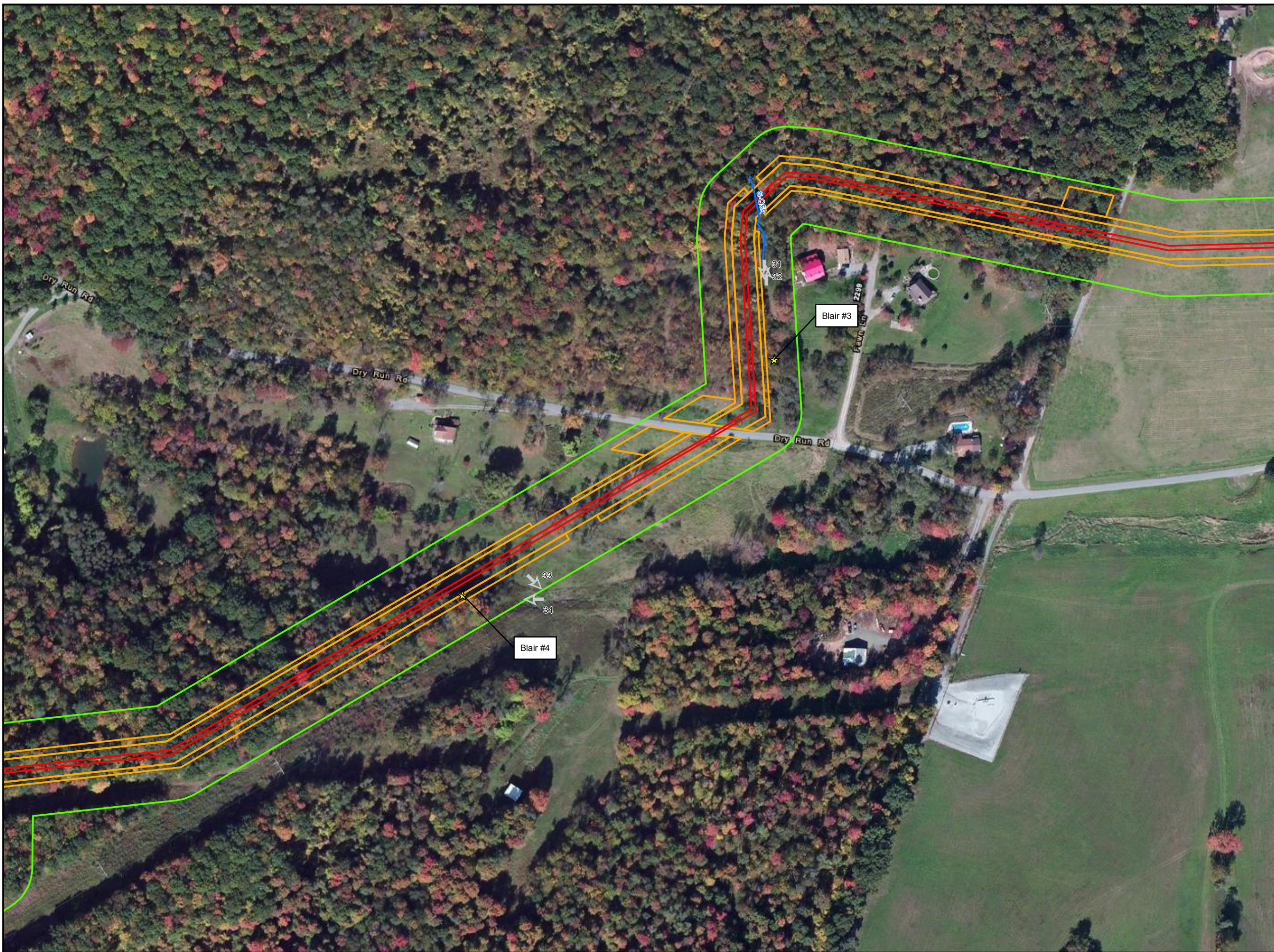


**PADEP FIELD REVIEW MAP  
BLAIR #2  
FIGURE 20  
PENNSYLVANIA PIPELINE PROJECT  
FEBRUARY 25, 2016 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
BLAIR COUNTY, PA**

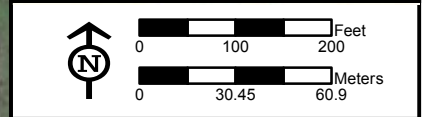
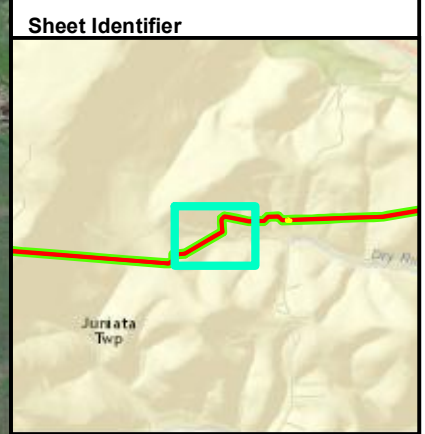


**Notes:**  
 1) Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).  
 2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.

PGH\_P:\GIS\SUNOCO\MARINER\_EAST\_2M\XD\PEN\PIPELINE\_PADEP\_FIELDREVIEW\_MAP\_051216\_IN



- Legend**
- ★ PADEP Comment Location
  - 📍 Photo Location
  - Stream
  - Wetland
    - ▨ PEM
    - ▨ PFO
    - ▨ PSS
    - ▨ PuB
  - Access Road
  - Alignment Centerline
  - Limit of Disturbance
  - Study Area



**PADEP FIELD REVIEW MAP  
BLAIR #3 AND #4  
FIGURE 21  
PENNSYLVANIA PIPELINE PROJECT  
FEBRUARY 25, 2016 ALIGNMENT  
SUNOCO LOGISTICS, L.P.  
BLAIR COUNTY, PA**



**Notes:**  
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 2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.



## FIELD DATA SHEETS

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: PPP City/County: Cumberland Sampling Date: 04/27/2016  
 Applicant/Owner: Sunoco State: PA Sampling Point: Cumberland 5  
 Investigator(s): JMM, HBS Section, Township, Range: North Middleton  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): Planar Slope (%): 3-5  
 Subregion (LRR or MLRA): LRRN Lat: 40.241236 Long: -77.247747 Datum: NAD83  
 Soil Map Unit Name: BeD - Berks channery silt loam, 15 to 25 percent slopes NWI classification: None

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Hydic Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>		
Remarks:		

Cowardin Code:  
 HGM:  
 WT:  
 Upland

**HYDROLOGY**

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

<b>Field Observations:</b>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	

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

Remarks:  
 Some gravel from road culvert washout upslope of sample point area. Sample point taken in woodland, adjacent to recently planted ROW.

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

Sampling Point: Cumberland 5

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30'</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)  Total Number of Dominant Species Across All Strata: <u>6</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>67</u> (A/B)
1. <u>Acer negundo</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Fraxinus americana</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. _____				
4. _____				
5. _____				
6. _____				
$\frac{50}{50} = \text{Total Cover}$ 50% of total cover: <u>25</u> 20% of total cover: <u>10</u>				<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A)    _____ (B)  Prevalence Index = B/A = _____
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15'</u> )				
1. <u>Ulmus rubra</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Ligustrum vulgare</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
$\frac{30}{30} = \text{Total Cover}$ 50% of total cover: <u>15</u> 20% of total cover: <u>6</u>				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
<b>Herb Stratum</b> (Plot size: <u>5'</u> )				
1. <u>Lonicera japonica</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Impatiens capensis</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
3. <u>Hesperis matronalis</u>	<u>5</u>		<u>FACU</u>	
4. <u>Alliaria petiolata</u>	<u>5</u>		<u>FACU</u>	
5. <u>Allium vineale</u>	<u>3</u>		<u>FACU</u>	
6. <u>Ranunculus abortivus</u>	<u>3</u>		<u>FACW</u>	
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
$\frac{71}{71} = \text{Total Cover}$ 50% of total cover: <u>35.5</u> 20% of total cover: <u>14.2</u>				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
<b>Woody Vine Stratum</b> (Plot size: <u>15'</u> )				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
$\frac{0}{0} = \text{Total Cover}$ 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____
Remarks: (Include photo numbers here or on a separate sheet.)				

**SOIL**

Sampling Point: Cumberland 5

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	10YR 4/2	100					SiL	
5-10	10YR4/3	100					SiL	
10-15+	10YR 5/3	88	10YR 4/4	12	C	M	SiL	

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

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

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: PPP City/County: Cumberland Sampling Date: 04/28/2016  
 Applicant/Owner: Sunoco State: PA Sampling Point: W-JH3  
 Investigator(s): JMM, HBS Section, Township, Range: Upper Frankford  
 Landform (hillslope, terrace, etc.): valley bottom Local relief (concave, convex, none): Concave Slope (%): 3-5  
 Subregion (LRR or MLRA): LRRN Lat: 40.246061 Long: -77.37568 Datum: NAD83  
 Soil Map Unit Name: Brinkerton silt loam, 0 to 3 percent slopes (BrA) NWI classification: None

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

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

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks: Cowardin Code: <u>PEM</u> HGM: <u>Slope</u> WT: <u>Isolate</u>	

**HYDROLOGY**

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

Remarks:  
 Appears to be broken tile drain in this area of the agricultural field

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

Sampling Point: W-JH3

	Absolute % Cover	Dominant Species?	Indicator Status		
<b>Tree Stratum</b> (Plot size: <u>30'</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)	
1.					
2.					
3.					
4.					
5.					
6.					
7.					
$\frac{0}{0} = \text{Total Cover}$ 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>					
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15'</u> )					<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A)    _____ (B)  Prevalence Index = B/A = _____
1.					
2.					
3.					
4.					
5.					
6.					
7.					
8.					
9.					
$\frac{0}{0} = \text{Total Cover}$ 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>					
<b>Herb Stratum</b> (Plot size: <u>5'</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input checked="" type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is $\leq 3.0^1$ ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
1.	Phalaris arundinacea	50	✓		FACW
2.	Eleocharis acicularis	15	✓		OBL
3.	Barbarea vulgaris	5			FACU
4.	Juncus effusus	3			FACW
5.					
6.					
7.					
8.					
9.					
$\frac{73}{36.5} = \text{Total Cover}$ 50% of total cover: <u>36.5</u> 20% of total cover: <u>14.6</u>					
<b>Woody Vine Stratum</b> (Plot size: <u>15'</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.	
1.					
2.					
3.					
4.					
5.					
$\frac{0}{0} = \text{Total Cover}$ 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>					
Remarks: (Include photo numbers here or on a separate sheet.)					<b>Hydrophytic Vegetation Present?</b> Yes <input checked="" type="checkbox"/> No _____

**SOIL**

Sampling Point: W-JH3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-2	10YR 4/2	95	10YR 4/4	5	C	PL	SiL	
2-6	2.5Y 5/2	82	7.5YR 4/6	18	C	PL	SiL	
6-10	2.5Y 5/2	90	10YR 4/4	10	C	PL	SiL	
10-15	2.5Y 5/3	64	10YR 5/4	30	C	M	SiCL	
			2.5Y 6/2	6	D	PL		

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

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

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes  No

Remarks:

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: PPP City/County: Cumberland Sampling Date: 04/28/2016  
 Applicant/Owner: Sunoco State: PA Sampling Point: W-JH3-UP  
 Investigator(s): JMM, HBS Section, Township, Range: Upper Frankford  
 Landform (hillslope, terrace, etc.): valley bottom Local relief (concave, convex, none): Convex Slope (%): 3-5  
 Subregion (LRR or MLRA): LRRN Lat: 40.246002 Long: -77.375615 Datum: NAD83  
 Soil Map Unit Name: Brinkerton silt loam, 0 to 3 percent slopes (BrA) NWI classification: None

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

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

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Cowardin Code: HGM: WT: Upland	

**HYDROLOGY**

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

Remarks:

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

Sampling Point: W-JH3-UP

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30'</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>1</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
_____ = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15'</u> )				
1. _____	<u>10</u>	_____	<u>FACU</u>	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
_____ = Total Cover 50% of total cover: <u>5</u> 20% of total cover: <u>2</u>				
<b>Herb Stratum</b> (Plot size: <u>5'</u> )				<b>Hydrophytic Vegetation Indicators:</b> ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 <sup>1</sup> ___ 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. <u>Dactylis glomeratus</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Anthoxalum odoratum</u>	<u>10</u>	_____	<u>FACU</u>	
3. <u>Poa pratensis</u>	<u>10</u>	_____	<u>FACU</u>	
4. <u>Lotus corniculatus</u>	<u>8</u>	_____	<u>FACU</u>	
5. <u>Trifolium pratense</u>	<u>5</u>	_____	<u>FACU</u>	
6. <u>Taraxacum officinale</u>	<u>5</u>	_____	<u>FACU</u>	
7. <u>Barbarea vulgaris</u>	<u>3</u>	_____	<u>FACU</u>	
8. <u>Achillea millifolium</u>	<u>3</u>	_____	<u>FACU</u>	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover 50% of total cover: <u>47</u> 20% of total cover: <u>18.8</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>15'</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
Remarks: (Include photo numbers here or on a separate sheet.)				<b>Hydrophytic Vegetation Present?</b> Yes _____    No <input checked="" type="checkbox"/>

**SOIL**

Sampling Point: W-JH3-UP

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-11	10YR 3/2	100					SiL	
11-15+	10YR 5/4	100					SiL	

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

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	Hydric Soil Present?    Yes _____    No <input checked="" type="checkbox"/>
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Remarks:

<b>STREAM ID</b> S-JH4		<b>STREAM NAME</b> UNT to Fort Run	
<b>LAT</b> 40.334672 <b>LONG</b> -77.831048		<b>DATE</b> 04/27/2016	
<b>CLIENT</b> Sunoco Logistics, L.P.		<b>PROJECT NAME</b> PPP	
<b>INVESTIGATORS</b> JMM, HBS			
<b>WATER TYPE</b> TNW <input type="checkbox"/> RPW <input checked="" type="checkbox"/> NRPW <input type="checkbox"/>		<b>FLOW REGIME</b> Perennial <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/>	

<b>CHANNEL FEATURES</b>	<b>Estimate Measurements</b> Top of Bank Width: <u>2.0</u> ft Top of Bank Height: LB <u>1.0</u> ft    RB <u>1.0</u> ft Water Depth: <u>3.00</u> in Water Width: <u>1.0</u> ft Ordinary High Water Mark (Width): <u>1.5</u> in Ordinary High Water Mark (Height): <u>6.0</u> in Flow Direction: <u>Southwest</u>	<b>Stream Erosion</b> <input checked="" type="checkbox"/> None <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <b>Artificial, Modified or Channelized</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <b>Dam Present</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <b>Sinuosity</b> <input checked="" type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High <b>Gradient</b> <input checked="" type="checkbox"/> Flat (0.5/100 ft) <input checked="" type="checkbox"/> Moderate (2 ft/100 ft) <input type="checkbox"/> Severe (10 ft/100 ft)
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<b>FLOW CHARACTERISTICS</b>	<b>Water Present</b> <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 <b>Velocity</b> <input type="checkbox"/> Fast <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Slow	<b>Proportion of Reach Represented by Stream Morphology Types</b> Riffle 20 %    Run 80 % Pool % <b>Turbidity</b> <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly turbid <input type="checkbox"/> Turbid <input type="checkbox"/> Opaque <input type="checkbox"/> Stained <input type="checkbox"/> Other _____
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<b>INORGANIC SUBSTRATE COMPONENTS</b> (should add up to 100%) <small>100</small>			<b>ORGANIC SUBSTRATE COMPONENTS</b> (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")		Muck-Mud	black, very fine organic (FPOM)	
Gravel	2-64 mm (0.1"-2.5")				
Sand	0.06-2mm (gritty)		Marl	grey, shell fragments	
Silt	0.004-0.06 mm	100			
Clay	< 0.004 mm (slick)				

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

<b>AQUATIC VEGETATION</b>	<b>Indicate the dominant type and record the dominant species present</b> <input checked="" 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
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<b>MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES</b>	
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<b>STREAM ID</b> S-JH2-EPH		<b>STREAM NAME</b> UNT to Raystown Branch Juniata River	
<b>LAT</b> 40.381163 <b>LONG</b> -78.079218		<b>DATE</b> 04/26/2016	
<b>CLIENT</b> Sunoco Logistics, L.P.		<b>PROJECT NAME</b> PPP	
<b>INVESTIGATORS</b> JMM, HBS			
<b>WATER TYPE</b> TNW <input type="checkbox"/> RPW <input type="checkbox"/> NRPW <input checked="" type="checkbox"/>		<b>FLOW REGIME</b> Perennial <input type="checkbox"/> Intermittent <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/>	

<b>CHANNEL FEATURES</b>	<b>Estimate Measurements</b> Top of Bank Width: <u>4.0</u> ft Top of Bank Height: LB <u>1.5</u> ft      RB <u>1.0</u> ft Water Depth: <u>0.00</u> in Water Width: <u>0.0</u> ft Ordinary High Water Mark (Width): <u>26.0</u> in Ordinary High Water Mark (Height): <u>4.0</u> in Flow Direction: <u>East</u>	<b>Stream Erosion</b> <input checked="" type="checkbox"/> None <input type="checkbox"/> Moderate <input type="checkbox"/> Heavy <b>Artificial, Modified or Channelized</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <b>Dam Present</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <b>Sinuosity</b> <input checked="" type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High <b>Gradient</b> <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)
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<b>FLOW CHARACTERISTICS</b>	<b>Water Present</b> <input checked="" type="checkbox"/> No water, stream bed dry <input type="checkbox"/> Stream bed moist <input type="checkbox"/> Standing water <input type="checkbox"/> Flowing water <b>Velocity</b> <input type="checkbox"/> Fast <input type="checkbox"/> Moderate <input type="checkbox"/> Slow	<b>Proportion of Reach Represented by Stream Morphology Types</b> Riffle      %      Run      % Pool      % <b>Turbidity</b> <input type="checkbox"/> Clear <input type="checkbox"/> Slightly turbid <input type="checkbox"/> Turbid <input type="checkbox"/> Opaque <input type="checkbox"/> Stained <input type="checkbox"/> Other
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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)	40
Boulder	> 256 mm (10")				
Cobble	64-256 mm (2.5"-10")	15	Muck-Mud	black, very fine organic (FPOM)	
Gravel	2-64 mm (0.1"-2.5")	10			
Sand	0.06-2mm (gritty)	30	Marl	grey, shell fragments	
Silt	0.004-0.06 mm	45			
Clay	< 0.004 mm (slick)				

<b>WATERSHED FEATURES</b>	<b>Predominant Surrounding Landuse</b> <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 checked="" type="checkbox"/> Other: ROW <b>Canopy Cover</b> <input type="checkbox"/> Open <input type="checkbox"/> Partly shaded <input checked="" type="checkbox"/> Shaded	<b>Indicate the dominant type</b> <input checked="" type="checkbox"/> Trees <input type="checkbox"/> Shrubs <input type="checkbox"/> Grasses <input type="checkbox"/> Herbaceous <b>Floodplain Width</b> <input type="checkbox"/> Wide > 30ft <input type="checkbox"/> Moderate 15-30ft <input checked="" type="checkbox"/> Narrow <16ft <b>Wetland Present</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <b>Wetland ID</b> W-Y12
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<b>AQUATIC VEGETATION</b>	<b>Indicate the dominant type and record the dominant species present</b> <input type="checkbox"/> Rooted emergent <input type="checkbox"/> Rooted submergent <input type="checkbox"/> Rooted floating <input checked="" type="checkbox"/> Free floating <input type="checkbox"/> Floating algae <input type="checkbox"/> Attached algae
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<b>MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES</b>	Ephemeral portion of S-JH2.
	Crosses access road within survey corridor in 6" wide plastic culvert.

<b>STREAM ID</b> S-JH2-INT		<b>STREAM NAME</b> UNT to Raystown Branch Juniata River	
<b>LAT</b> 40.381163	<b>LONG</b> -78.079218	<b>DATE</b> 04/26/2016	
<b>CLIENT</b> Sunoco Logistics, L.P.		<b>PROJECT NAME</b> PPP	
<b>INVESTIGATORS</b> JMM, HBS			
<b>WATER TYPE</b> TNW <input type="checkbox"/> RPW <input checked="" type="checkbox"/> NRPW <input type="checkbox"/>		<b>FLOW REGIME</b> Perennial <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/>	

<b>CHANNEL FEATURES</b>	<b>Estimate Measurements</b> Top of Bank Width: <u>8.0</u> ft Top of Bank Height: LB <u>5.0</u> ft RB <u>5.0</u> ft Water Depth: <u>0.50</u> in Water Width: <u>1.5</u> ft Ordinary High Water Mark (Width): <u>2.0</u> ft Ordinary High Water Mark (Height): <u>3.0</u> ft Flow Direction: <u>East</u>	<b>Stream Erosion</b> <input type="checkbox"/> None <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Heavy <b>Artificial, Modified or Channelized</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <b>Dam Present</b> <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No <b>Sinuosity</b> <input checked="" type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High <b>Gradient</b> <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)
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<b>FLOW CHARACTERISTICS</b>	<b>Water Present</b> <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 <b>Velocity</b> <input type="checkbox"/> Fast <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Slow	<b>Proportion of Reach Represented by Stream Morphology Types</b> Riffle 60 % Run 40 % Pool % <b>Turbidity</b> <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Slightly turbid <input type="checkbox"/> Turbid <input type="checkbox"/> Opaque <input type="checkbox"/> Stained <input type="checkbox"/> Other
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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)	30
Boulder	> 256 mm (10")				
Cobble	64-256 mm (2.5"-10")	20	Muck-Mud	black, very fine organic (FPOM)	
Gravel	2-64 mm (0.1"-2.5")	30			
Sand	0.06-2mm (gritty)	10	Marl	grey, shell fragments	
Silt	0.004-0.06 mm	40			
Clay	< 0.004 mm (slick)				

<b>WATERSHED FEATURES</b>	<b>Predominant Surrounding Landuse</b> <input 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 checked="" type="checkbox"/> Other: ROW <b>Canopy Cover</b> <input type="checkbox"/> Open <input checked="" type="checkbox"/> Partly shaded <input type="checkbox"/> Shaded	<b>Indicate the dominant type</b> <input type="checkbox"/> Trees <input checked="" type="checkbox"/> Shrubs <input type="checkbox"/> Grasses <input checked="" type="checkbox"/> Herbaceous <b>Floodplain Width</b> <input type="checkbox"/> Wide > 30ft <input type="checkbox"/> Moderate 15-30ft <input checked="" type="checkbox"/> Narrow <16ft <b>Wetland Present</b> <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <b>Wetland ID</b> W-Y12
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<b>AQUATIC VEGETATION</b>	<b>Indicate the dominant type and record the dominant species present</b> <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
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<b>MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES</b>	Intermittent portion of S-JH2.
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**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: PPP City/County: Huntingdon Sampling Date: 04/26/2016  
 Applicant/Owner: Sunoco State: PA Sampling Point: Huntingdon 10  
 Investigator(s): JMM, HBS Section, Township, Range: Penn  
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): Planar Slope (%): 0-3  
 Subregion (LRR or MLRA): LRRN Lat: 40.396803 Long: -78.144975 Datum: NAD83  
 Soil Map Unit Name: Ne - Newark silt loam NWI classification: None

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

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

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
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Remarks:  
 Cowardin Code:  
 HGM:  
 WT:  
 Upland

**HYDROLOGY**

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

Remarks:

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

Sampling Point: Huntingdon 10

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30'</u> )				<b>Dominance Test worksheet:</b>
1. <u>Ulmus rubra</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>7</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>43</u> (A/B)
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>5</u> = Total Cover 50% of total cover: <u>2.5</u> 20% of total cover: <u>1</u>				<b>Prevalence Index worksheet:</b>
Sapling/Shrub Stratum (Plot size: <u>15'</u> )				Total % Cover of: _____ Multiply by: _____
1. <u>Rhus glabra</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>UPL</u>	OBL species _____ x 1 = _____
2. <u>Ligustrum vulgare</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	FACW species _____ x 2 = _____
3. <u>Cornus ammomum</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	FAC species _____ x 3 = _____
4. _____	_____	_____	_____	FACU species _____ x 4 = _____
5. _____	_____	_____	_____	UPL species _____ x 5 = _____
6. _____	_____	_____	_____	Column Totals: _____ (A)    _____ (B)
7. _____	_____	_____	_____	Prevalence Index = B/A = _____
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
<u>25</u> = Total Cover 50% of total cover: <u>12.5</u> 20% of total cover: <u>5</u>				<b>Hydrophytic Vegetation Indicators:</b>
Herb Stratum (Plot size: <u>5'</u> )				<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
1. <u>Solidago altissima</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<input type="checkbox"/> 2 - Dominance Test is >50%
2. <u>Solidago rugosa</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 <sup>1</sup>
3. <u>Bromus inermis</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>UPL</u>	<input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)
4. <u>Dipsacus fullonum</u>	<u>2</u>	_____	<u>FACU</u>	<input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
5. <u>Apocynum cannabinum</u>	<u>1</u>	_____	<u>FACU</u>	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
<u>83</u> = Total Cover 50% of total cover: <u>41.5</u> 20% of total cover: <u>16.6</u>				<b>Definitions of Four Vegetation Strata:</b>
Woody Vine Stratum (Plot size: <u>15'</u> )				<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.
1. _____	_____	_____	_____	<b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.
2. _____	_____	_____	_____	<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
3. _____	_____	_____	_____	<b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
<u>0</u> = Total Cover 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: Huntingdon 10

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-12	10YR 4/2	100					SiL	
12-20	10YR 5/3	100					SiL	

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

Hydric Soil Indicators:

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

- Dark Surface (S7)
- Polyvalue Below Surface (S8) (MLRA 147, 148)
- Thin Dark Surface (S9) (MLRA 147, 148)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (LRR N, MLRA 136)
- Umbric Surface (F13) (MLRA 136, 122)
- Piedmont Floodplain Soils (F19) (MLRA 148)
- Red Parent Material (F21) (MLRA 127, 147)

Indicators for Problematic Hydric Soils<sup>3</sup>:

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present?    Yes \_\_\_\_\_    No

Remarks:

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: PPP City/County: Blair Sampling Date: 04/26/2016  
 Applicant/Owner: Sunoco State: PA Sampling Point: Blair 1  
 Investigator(s): JMM, HBS Section, Township, Range: Frankstown  
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): Planar Slope (%): 0-3  
 Subregion (LRR or MLRA): LRRN Lat: 40.434570 Long: -78.297892 Datum: NAD83  
 Soil Map Unit Name: Ba - Basher Soils NWI classification: None

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

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

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: Cowardin Code: HGM: WT: Upland	

**HYDROLOGY**

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

Remarks:

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

Sampling Point: Blair 1

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30'</u> )				<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>2</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
$\frac{0}{0} = \text{Total Cover}$ 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15'</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
$\frac{0}{0} = \text{Total Cover}$ 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
<b>Herb Stratum</b> (Plot size: <u>5'</u> )				<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. <u>Solidago altissima</u>	<u>50</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Plantago lanceolata</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. <u>Veronica arvensis</u>	<u>3</u>	_____	<u>UPL</u>	
4. <u>Panicum virgatum</u>	<u>3</u>	_____	<u>FAC</u>	
5. <u>Barbarea vulgaris</u>	<u>3</u>	_____	<u>FACU</u>	
6. <u>Juncus effusus</u>	<u>2</u>	_____	<u>FACW</u>	
7. <u>Cardamine hirsuta</u>	<u>1</u>	_____	<u>FACU</u>	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
$\frac{82}{82} = \text{Total Cover}$ 50% of total cover: <u>41</u> 20% of total cover: <u>16.4</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>15'</u> )				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.   <b>Hydrophytic Vegetation Present?</b> Yes _____    No <input checked="" type="checkbox"/>
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
$\frac{0}{0} = \text{Total Cover}$ 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
Remarks: (Include photo numbers here or on a separate sheet.)				

**SOIL**

Sampling Point: Blair 1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-4	7.5YR 3/3	100					SiL	
4-11.5	7.5YR 4/3	100					L	
11.5-18+	7.5YR 4/6	100					SiL	

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

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	Hydric Soil Present?    Yes _____    No <input checked="" type="checkbox"/>
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Remarks:

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: PPP City/County: Blair Sampling Date: 04/26/2016  
 Applicant/Owner: Sunoco State: PA Sampling Point: Blair 2  
 Investigator(s): JMM, HBS Section, Township, Range: Frankstown  
 Landform (hillslope, terrace, etc.): floodplain Local relief (concave, convex, none): Planar Slope (%): 0-3  
 Subregion (LRR or MLRA): LRRN Lat: 40.440161 Long: -78.332014 Datum: NAD83  
 Soil Map Unit Name: Ba - Basher Soils NWI classification: None

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes _____ No <input checked="" type="checkbox"/>
Remarks: Cowardin Code: HGM: WT: Upland	

**HYDROLOGY**

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

Remarks:

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

Sampling Point: Blair 2

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30'</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
$\frac{0}{0} = \text{Total Cover}$ 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15'</u> )				
1. <u>Lonicera morrowii</u>	<u>25</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Craetagus sp</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>ND</u>	
3. <u>Ligustrum vulgare</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
4. <u>Cornus ammomum</u>	<u>5</u>	_____	<u>FACW</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
$\frac{50}{25} = \text{Total Cover}$ 50% of total cover: <u>25</u> 20% of total cover: <u>10</u>				
<b>Herb Stratum</b> (Plot size: <u>5'</u> )				
1. <u>Solidago altissima</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
2. <u>Poa sp</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>ND</u>	
3. <u>Lotus corniculatus</u>	<u>10</u>	_____	<u>FACU</u>	
4. <u>Dichanthelium acuminata</u>	<u>5</u>	_____	<u>FAC</u>	
5. <u>Plantago lanceolata</u>	<u>3</u>	_____	<u>FAC</u>	
6. <u>Microstegium viminium</u>	<u>2</u>	_____	<u>FAC</u>	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
$\frac{80}{40} = \text{Total Cover}$ 50% of total cover: <u>40</u> 20% of total cover: <u>16</u>				
<b>Woody Vine Stratum</b> (Plot size: <u>15'</u> )				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
$\frac{0}{0} = \text{Total Cover}$ 50% of total cover: <u>0</u> 20% of total cover: <u>0</u>				

**Dominance Test worksheet:**

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 3\* (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

**Prevalence Index worksheet:**

Total % Cover of: \_\_\_\_\_ Multiply by:

OBL species \_\_\_\_\_ x 1 = \_\_\_\_\_

FACW species \_\_\_\_\_ x 2 = \_\_\_\_\_

FAC species \_\_\_\_\_ x 3 = \_\_\_\_\_

FACU species \_\_\_\_\_ x 4 = \_\_\_\_\_

UPL species \_\_\_\_\_ x 5 = \_\_\_\_\_

Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B)

Prevalence Index = B/A = \_\_\_\_\_

**Hydrophytic Vegetation Indicators:**

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is  $\leq 3.0^1$

4 - Morphological Adaptations<sup>1</sup> (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation<sup>1</sup> (Explain)

<sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

**Definitions of Four Vegetation Strata:**

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

**Sapling/Shrub** – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

**Herb** – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

**Woody vine** – All woody vines greater than 3.28 ft in height.

**Hydrophytic Vegetation Present?**    Yes \_\_\_\_\_ No

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

ND - Not Determined.

\* Vegetation not ID'd to species level not included in dominance test.

**SOIL**

Sampling Point: Blair 2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0 - 3.5	7.5YR 4/3	100						
3.5 - 11	7.5YR 4/2	100						
11 - 20+	7.5YR 4/3	100						

<sup>1</sup>Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

<sup>2</sup>Location: PL=Pore Lining, M=Matrix.

**Hydric Soil Indicators:**

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

- Dark Surface (S7)
- Polyvalue Below Surface (S8) **(MLRA 147, 148)**
- Thin Dark Surface (S9) **(MLRA 147, 148)**
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) **(LRR N, MLRA 136)**
- Umbric Surface (F13) **(MLRA 136, 122)**
- Piedmont Floodplain Soils (F19) **(MLRA 148)**
- Red Parent Material (F21) **(MLRA 127, 147)**

**Indicators for Problematic Hydric Soils<sup>3</sup>:**

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

**Restrictive Layer (if observed):**

Type: \_\_\_\_\_  
 Depth (inches): \_\_\_\_\_

Hydric Soil Present? Yes \_\_\_\_\_ No

Remarks:

**WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region**

Project/Site: PPP City/County: Blair Sampling Date: 04/26/2016  
 Applicant/Owner: Sunoco State: PA Sampling Point: Blair 4  
 Investigator(s): JMM, HBS Section, Township, Range: \_\_\_\_\_  
 Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): Planar Slope (%): 15-25  
 Subregion (LRR or MLRA): LRRN Lat: \_\_\_\_\_ Long: \_\_\_\_\_ Datum: NAD 83  
 Soil Map Unit Name: \_\_\_\_\_ NWI classification: None

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

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

Hydrophytic Vegetation Present? Yes _____ No <input checked="" type="checkbox"/> Hydric Soil Present? Yes _____ No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes _____ No <input checked="" type="checkbox"/>	<b>Is the Sampled Area within a Wetland?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks: Cowardin Code: HGM: WT: Upland	

**HYDROLOGY**

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

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

Sampling Point: Blair 4

	Absolute % Cover	Dominant Species?	Indicator Status	
<b>Tree Stratum</b> (Plot size: <u>30'</u> )				
1. <u>Acer saccharum</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Dominance Test worksheet:</b> Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)  Total Number of Dominant Species Across All Strata: <u>3</u> (B)  Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
2. <u>Prunus serotina</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
$\frac{45}{50\% \text{ of total cover: } \underline{22.5}}$ = Total Cover		$\frac{20\% \text{ of total cover: } \underline{9}}$		
<b>Sapling/Shrub Stratum</b> (Plot size: <u>15'</u> )				
1. <u>Acer pensylvanicum</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	<b>Prevalence Index worksheet:</b> Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B)  Prevalence Index = B/A = _____
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
$\frac{5}{50\% \text{ of total cover: } \underline{2.5}}$ = Total Cover		$\frac{20\% \text{ of total cover: } \underline{1}}$		
<b>Herb Stratum</b> (Plot size: <u>5'</u> )				
1. <u>Rosa multiflora</u>	<u>3</u>		<u>FACU</u>	<b>Hydrophytic Vegetation Indicators:</b> <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is $\leq 3.0^1$ <input type="checkbox"/> 4 - Morphological Adaptations <sup>1</sup> (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. <u>Prunus serotina</u>	<u>1</u>		<u>FACU</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
$\frac{4}{50\% \text{ of total cover: } \underline{2}}$ = Total Cover		$\frac{20\% \text{ of total cover: } \underline{0.8}}$		
<b>Woody Vine Stratum</b> (Plot size: <u>15'</u> )				
1. _____				<b>Definitions of Four Vegetation Strata:</b>  <b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  <b>Sapling/Shrub</b> – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  <b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  <b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
2. _____				
3. _____				
4. _____				
5. _____				
$\frac{0}{50\% \text{ of total cover: } \underline{0}}$ = Total Cover		$\frac{20\% \text{ of total cover: } \underline{0}}$		
				<b>Hydrophytic Vegetation Present?</b> Yes _____ No <input checked="" type="checkbox"/>
Remarks: (Include photo numbers here or on a separate sheet.)				

**SOIL**

Sampling Point: Blair 4

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		
0-5	5YR 4/3	100					SiL	
5-20	2.5YR 4/4	100					L	

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

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

<sup>3</sup>Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

<b>Restrictive Layer (if observed):</b> Type: _____ Depth (inches): _____	<b>Hydric Soil Present?</b> Yes _____    No <input checked="" type="checkbox"/>
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Remarks:



## PHOTOGRAPHS



Photograph 1. Berks #1. W-B32, facing north.



Photograph 2. Berks #1. W-B33, facing south.



Photograph 3. Lebanon #1. Facing southeast. Upland.



Photograph 4. Lebanon #1. Facing south. Upland.



Photograph 5. Cumberland #3. Facing southwest. Upland.



Photograph 6. Cumberland #3. Facing southwest. Upland.



Photograph 7. Cumberland #4. Facing northwest. Upland.



Photograph 8. Cumberland #4. Facing east. Upland.



Photograph 9. Cumberland #5. Facing west. Upland.



Photograph 10. Cumberland #5. Facing west. Upland.



Photograph 11. Cumberland #7. Facing east. Upland.



Photograph 12. Cumberland #7. Facing northwest. Upland.



Photograph 13. Cumberland #8. W-JH3, facing northwest.



Photograph 14. Cumberland #8. W-JH3, facing northwest.



Photograph 15. Huntingdon #1. S-JH4, facing northeast.



Photograph 16. Huntingdon #1. S-JH4, facing southwest.



Photograph 17. Huntingdon #3. Facing northwest. Upland.



Photograph 18. Huntingdon #3. Facing northwest. Upland.



Photograph 19. Huntingdon #4. W-46b, facing northwest.



Photograph 20. Huntingdon #4. W-46b, facing south.



Photograph 21. Huntingdon #8. S-Y18 extension, facing north.



Photograph 22. Huntingdon #8. S-Y18 extension, facing north.



Photograph 23. Huntingdon #9. The ephemeral reach of S-JH2, facing northwest.



Photograph 24. Huntingdon #9. The intermittent reach of S-JH2, facing southeast.



Photograph 25. Huntingdon #10. W-L36 in the woody treeline, facing east. The herbaceous foreground is upland.



Photograph 26. Huntingdon #10. Facing north. Upland.



Photograph 27. Blair #1. W-M24, facing southwest.



Photograph 28. Blair #1. Facing southeast. The fore- and mid-ground is upland. W-M24 is at the low point in the topography.



Photograph 29. Blair #2. Facing northeast. Upland.



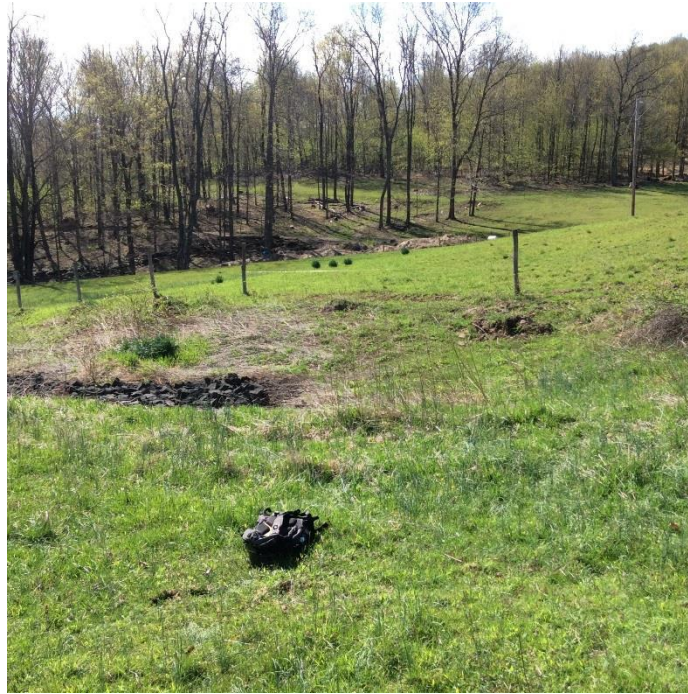
Photograph 30. Blair #2. Facing southwest. Upland.



Photograph 31. Blair #3. Facing north. S-Q59 loses bed and bank in the shrub line.



Photograph 32. Blair #3. Facing south. Downslope of S-Q59 endpoint.



Photograph 33. Blair #4. Facing southeast. Upland.



Photograph 34. Blair #4. Facing west. Upland.