Pennsylvania Pipeline Project
Chapter 105 Joint Permit Application
Cambria County, Pennsylvania
Application ID: E11-352
APS No.: 1082170
January 2019

Prepared for:
Pennsylvania Department of Environmental Protection
Southcentral Regional Office
909 Elmerton Avenue
Harrisburg, Pennsylvania, 17110

Prepared by:
Tetra Tech OGA, Inc.
301 Ellicott Street
Buffalo, New York
(716) 849-9419

Prepared by: _____
Pat Green
Tetra Tech OGA, Inc.

Approved by: _____
Brad Schaeffer, P.M.P.
Tetra Tech OGA, Inc.

"I, Robert F. Simcik, do hereby certify to the best of my knowledge, information and belief, that the information contained in the accompanying plans, specifications, and reports has been prepared in accordance with accepted professional practice, is true and correct, and is in conformance with Chapter 106 of the rules and regulations of the Department of Environmental Protection."

"I, Robert F. Simcik, do hereby certify pursuant to the penalties of 18 Pa.C.S.A. Sec. 4904 to the best of my knowledge, information and belief, that the information contained in the accompanying plans, specifications and reports has been prepared in accordance with accepted engineering practice, is true and correct, and is in conformance with Chapter 105 of the rules and regulations of the Department of Environmental Protection."

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ROBERT F. SIMCIK
ENGINEER
PE-050435-E
1/31/19

Robert F. Simcik, P.E.
Professional Engineer No. PE050435E

ATTACHMENT A

Project Description and Alternative Analysis

Project Description

Sunoco Pipeline L.P. (SPLP) requests a major permit modification for a change in the route and installation methods for the 16-inch diameter pipeline previously permitted as the Goldfinch Lane and William Penn Avenue Horizontal Directional Drills (HDD). This permit request is to convert both of these HDDs to conventional open trench construction for the majority of the reroute, and a conventional auger bore under William Penn Avenue (State Route 271).

During the pilot hole drilling phase on the permitted Goldfinch and William Penn HDDs for the 20-inch pipeline installation through this area, several inadvertent returns (IRs) occurred and resulted in discharges to Waters of the Commonwealth. The HDD profiles were designed to the upper stress limits of the pipe to minimize the likelihood of IR events; however, due to the weakness of the geology above the profile, IRs occurred and despite numerous grouting attempts to seal the IR pathways, repetitive IR events could not be prevented. Therefore, given the geologic conditions at these HDD locations, the HDD evaluation staff cannot assure the Department that the 16-inch HDDs will not have similar problems in this area. Therefore, SPLP has elected to abandon any future HDD attempts to install the 16-inch pipeline through this area and has sought an alternate route of installation agreeable to the landowners and that minimizes impacts to Waters of the Commonwealth.

This permit modification requests an approximate 1 mile reroute to the south of the current permitted pipeline right-of-way. The new route will avoid wetlands N26 (PSS/PEM), N25 (PSS), N24 (PFO/PEM), and N20 (PFO), as well as streams S-N42, S-N41, S-N39, and S-N36. The new route will cross a total of 11 wetlands (4 PEM, 6 PSS, and 1 pond), and 9 streams (refer to Attachments C and E for additional information about these water resources). An open trench installation method across these resources will result in temporary, short term impacts to wetlands and waters but will avoid all PFO impacts and eliminate the risk of uncontrolled discharges associated with HDD IRs.

All the streams will be crossed via the open cut method with the appropriate dam and pump bypass installed to convey stream flow across the workspace and outlet downstream within the permitted limit-of-disturbance, such that work will be conducted in a dry stream channel. After the stream bypasses are in place, the trench will be excavated, and the 16-inch pipe will be installed via the open trench method through the wetlands and streams in accordance with all permit conditions and requirements. In order to efficiently complete all construction activities and minimize wetland impacts, SPLP is proposing a 50-foot-wide limit of disturbance (LOD) across the wetlands and additional temporary workspace outside of wetlands to further minimize wetland disturbance during construction. Timber mats and bridges will be placed within the travel lane where the wetland and streams are crossed to avoid soil compaction; allow for trench excavation; topsoil and stream substrate segregation, and stockpiling of excavated materials in adjacent upland areas. Once the pipe and appropriate trench plugs are installed, the trench will be backfilled, and restored to pre-existing elevations, hydrology, and vegetation. All work will be conducted in accordance with permit conditions/requirements as well as the revised/updated Erosion & Sediment and Restoration plan (refer to *Attachment D* of this permit modification). The reroute will not result in any loss of wetland area or water quality/quantity, and the localized impacts are considered minor and temporary.

Refer to *Attachment C - Environmental Assessment* for a discussion of existing conditions, potential impacts, mitigation/restoration, antidegradation compliance, and agency coordination associated with this requested reroute and proposed construction method.

Alternatives Analysis

The crossing of wetland and stream resources is unavoidable due to the linear nature of the proposed PPP Project, and as described in the Environmental Assessment, S1.B – Water Dependency (refer to *Attachment C* of this permit modification). Therefore, to avoid direct impacts to these resources, SPLP originally planned to HDD under the entire wetland/stream complex. However, there were complications

encountered during the HDDs of the 20-inch and IRs resulted in unpermitted discharges to the Waters of the Commonwealth.

SPLP evaluated an open cut of the existing permitted right-of-way and determined this would result in permanent PFO functional impacts associated with the conversion of forested wetlands to emergent/scrub-shrub wetlands. Subsequently, they evaluated a conventional auger bore under the extensive PFO wetland area on the William Penn HDD, and determined that the bore distance was too long for a conventional bore. A Direct Pipe bore was evaluated for passing under this same PFO wetland; however the workspace required to setup this method of installation was constricted by the presence of two homesites immediate to the SPLP permanent easement; and therefore, this method was determined to be unfeasible.

SPLP evaluated other routes around the wetland/stream complex but are limited due to the roads and residential properties to the north of the existing SPLP easement, as well as the increased density of developments along William Penn Avenue north of the existing route. In addition, a route to the north would likely impact more forested wetland areas and require a “greenfield”, or new, right-of-way through these areas resulting in more permanent PFO impacts. The proposed route to the south avoids PFO wetlands and minimizes the number of residential and developed areas disturbed during construction.

In conclusion, given the geologic conditions at the Goldfinch and William Penn HDD locations and IRs that occurred during the 20-inch HDD, the HDD evaluation staff cannot assure that the 16-inch HDDs will not have similar problems in this area. Alternative construction methods including an open cut and/or bore of the resources within the existing permitted right-of-way are not considered desirable due to the permanent PFO impacts, and unfeasible alternative construction methods. Therefore, SPLP has elected to abandon installing the 16-inch pipeline within their existing easement and has identified an alternate route south of the currently proposed right-of-way. Analysis of other potential routes to the north would result in potentially more environmental (PFO), residential, and commercial (areas along William Penn Avenue) impacts. Consequently, the professional opinion of the HDD Reevaluation Team, consisting of the Geotechnical Evaluation Leader, Professional Geologists, Professional Engineers, and other construction specialists is that an open cut with a dam and pump bypass in place for each stream crossing will have the least impact, as the work area and stream flow will be managed in accordance with all permit conditions (dam and pump) and can completed in the most efficient and timely manner, including restoration/stabilization of all the wetland and streams.

ATTACHMENT B

Resource Photographs

Sunoco Pipeline L.P.

Photo Log - Goldfinch Lane/William Penn HDDs Reroute

Notes: 12/5/2018 -- Wetland W1r (PEM)

Facing north across PEM wetland area.

Notes: 12/5/2018 -- Wetland W2r (PEM)

Facing south across PEM wetland area. Narrow emergent wetland associated with S1r and surrounded by scrub-shrub/forested upland.

Notes: 12/5/2018 -- Wetland 3r (PEM)

Facing northeast across PEM wetland area towards open field. Small isolated wetland located on edge of forest/field - trees and shrubs are located in upland area.

Notes: 12/5/2018 -- Wetland 4r (PEM)

Facing southwest across PEM wetland area. Narrow emergent wetland/seep surrounded by scrub-shrub/forested upland. Wetland is not located in the proposed LOD.

Notes: 12/5/2018 -- Wetland W5r (PSS)

Facing north across PSS wetland vegetation and towards adjacent upland forest.

Notes: 12/5/2018 -- Wetland W6r (PSS)

Facing southwest through PSS wetland vegetation towards open field located behind upland tree line.

Sunoco Pipeline L.P.

Photo Log - Goldfinch Lane/William Penn HDDs Reroute

Notes: 12/5/2018 -- Wetland W7r (PSS)

Facing northeast through PSS wetland vegetation. Wetland is surrounded by upland forest and scrub-shrub vegetation.

Notes: 12/5/2018 -- Wetland W8r (PSS)

Facing south through PSS wetland vegetation. Wetland is located at the headwaters of S6r.

Notes: 12/5/2018 -- Wetland W9r (PSS)

Facing south through PSS wetland vegetation and along S7r. Trees on left of photo are located in adjacent upland.

Notes: 01/28/2019 -- Wetland N20 (PEM)

Facing north across PEM portion of wetland N20 area.

Notes: 12/5/2018 -- Stream S1r Upstream (south)

Unnamed tributary with perennial flow to Hinckston Run

Notes: 12/5/2018 -- Stream S1r Downstream (north)

Unnamed tributary with intermittent flow to Hinckston Run

Sunoco Pipeline L.P.

Photo Log - Goldfinch Lane/William Penn HDDs Reroute

Notes: 12/5/2018 -- Stream S2r Upstream (south)

Unnamed tributary with intermittent flow to Hinckston Run

Notes: 12/5/2018 -- Stream S2r Downstream (north)

Unnamed tributary with intermittent flow to Hinckston Run

Notes: 12/5/2018 -- Stream S3r Upstream (southwest)

Unnamed tributary with intermittent flow to Hinckston Run, associated with wetlands W5r and W6r.

Notes: 12/5/2018 -- Stream S3r Downstream (northeast)

Unnamed tributary with intermittent flow to Hinckston Run associated with wetlands W5r and W6r.

Notes: 12/5/2018 -- Stream S4r Upstream (west)

Perennial stream Hinckston Run associated with wetlands W6r and W7r.

Notes: 12/5/2018 -- Stream S4r Downstream (east)_

Perennial stream Hinckston Run associated with wetlands W6r and W7r.

Sunoco Pipeline L.P.

Photo Log - Goldfinch Lane/William Penn HDDs Reroute

Notes: 12/5/2018 -- Stream S5r Upstream (northeast)

Unnamed tributary with intermittent flow to Hinckston Run associated with wetland W7r. Stream is not located in the proposed LOD.

Notes: 12/5/2018 -- Stream S5r Downstream (southwest)

Unnamed tributary with intermittent flow to Hinckston Run associated with wetland W7r. Stream is not located in the proposed LOD.

Notes: 12/5/2018 -- Stream S6r Upstream (east)

Tributary to Hinckston Run associated with wetlands W7r and W8r.

Notes: 12/5/2018 -- Stream S6r Downstream (west)

Tributary to Hinckston Run associated with wetlands W7r and W8r.

Notes: 12/5/2018 -- Stream S7r Upstream (north)

Unnamed tributary with perennial flow to Hinckston Run associated with wetland W9r.

Notes: 12/5/2018 -- Stream S7r Downstream (south)

Unnamed tributary with perennial flow to Hinckston Run associated with wetland W9r.

Sunoco Pipeline L.P.

Photo Log - Goldfinch Lane/William Penn HDDs Reroute

Notes: 01/28/2019 -- Stream 044 UNT to Hinckston Run (CWF)

Facing northeast or upstream along O44 on the western side of William Penn Ave (SR-271).

Notes: 01/28/2019-- Stream 044 UNT to Hinckston Run (CWF)

Facing west or downstream along O44 on the western side of William Penn Ave (SR-271).

Notes: 01/27/2019 -- Stream 044 UNT to Hinckston Run (CWF)

Facing west or downstream along O44 on the eastern side of William Penn Ave (SR-271). Compost filter sock installed along stream channel is unrelated to Mariner East II project.

Notes: 01/27/2019 -- Stream 044 UNT to Hinckston Run (CWF)

Facing east or upstream along O44 on the eastern side of William Penn Ave (SR-271). Orange safety fence is unrelated to Mariner East II project.

Notes: 01/28/2019 -- Stream N35 Downstream (south)

Unnamed tributary Hinckston Run

Notes: 01/28/2019 -- Stream N35 Upstream (north)

Unnamed tributary to Hinckston Run

Sunoco Pipeline L.P.

Photo Log - Goldfinch Lane/William Penn HDDs Reroute

Notes: 01/27/2019-- Stream O43 and Pond O2 Upstream (northwest)

Unnamed tributary to Hinckston Run

Notes: 01/27/2019-- Stream O43 and Pond O2 Upstream (northwest)

Unnamed tributary to Hinckston Run

Notes: 01/27/2019-- Stream O43 downstream (west)

Unnamed tributary to Hinckston Run, associated with Pond O2. Erosion controls, as well as alterations to the stream, are unrelated to Mariner East II project.

Notes: 01/28/2019 -- Stream O43 at confluence of Stream O44 (south)

Unnamed tributary to Hinckston Run. Alterations (culvert pipe) to this stream are unrelated to the Mariner East II project.

Notes: 01/28/2019-- Stream O43 and Pond O2 Upstream (aerial)

Erosion controls installed at Pond O2 and stream O43, as well as alterations to the pond and stream, are unrelated to Mariner East II project.

Notes: 01/28/2019-- Stream O43 and Pond O2 Upstream (aerial)

Erosion controls installed at Pond O2 and stream O43, as well as alterations to the pond and stream, are unrelated to Mariner East II project.

ATTACHMENT C

Environmental Assessment

Environmental Assessment (E.A. Form) Rev. 6/2017

February 2019

Note: The EA provided herein provides information relevant to the major permit modification required at the Goldfinch Lane/William Penn Avenue Reroute in Jackson Township, Cambria County, Pennsylvania, and includes specific excerpts and information previously submitted by Sunoco Pipeline, L.P. as part of the approved Pennsylvania Pipeline Project (PPP) Chapter 105 Joint Permit (E11-352).

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERWAYS ENGINEERING AND WETLANDS

CHAPTER 105 ENVIRONMENTAL ASSESSMENT FORM

			Included	Item Location
Note: The Department may waive a specific information requirement in writing, at the request of the Applicant, during the pre-application review process if the Department determines the information is not necessary to complete the review.				
Module S1: Project Summary				
This module is intended to organize information in order to present an overall summary of the project scope, certain key information requirements and when applicable, a comprehensive view of the overall project and related projects.				
A. Provide an overall project description and If the answer to the question below is **YES**, address CEA requirements; otherwise proceed to **S1.B** Comprehensive Environmental Assessment (CEA) when applicable. Answer the following question:			☒	Mod S1.A; Att. A
Does the "overall" project require more than one Ch. 105 permit in more than one county or will the project be completed in more than one phase?	☒ Yes	☐ No		
B. Provide information related to the project purpose, need, water dependency and summarize the amount and type of resources present and the temporary and permanent impacts proposed to those resources.			☒	Mod S1.B
Module S2: Resource Identification and Characterization				
This module is intended to organize information related to the identification of the resources present on the project site and to characterize those resources that may be affected by the proposed project.				
A. Provide the standard resource identification information, location map, wetland determination or delineation reports; watercourse reports; identification and qualifications of preparers; location map, and answer the related questions.			☒	App. S2.A-1; S2.A-2
Is the site located within or adjacent to any of the following; or within 100 feet of items vii or viii?				
i. National, state or local park, forest or recreation area	☐ Yes	☒ No		
ii. National natural landmark	☐ Yes	☒ No		
iii. National wildlife refuge, or Federal, state, local or private wildlife or plant sanctuaries	☐ Yes	☒ No		
iv. State Game Lands	☐ Yes	☒ No		
v. Areas identified as prime farmland	☒ Yes	☐ No		Mod S3.B
vi. Source for a public water supply	☐ Yes	☒ No		
vii. A National Wild or Scenic River or the Commonwealth's Scenic Rivers System	☐ Yes	☒ No		
viii. Designated Federal wilderness area	☐ Yes	☒ No		
B. Identify all aquatic resources present on the project site and provide an identifier, the resource type; size of the resource(s); fishery designations, Ch. 93 uses and special protection status; and Exceptional Value (EV) wetland analysis.			☒	Mod S2.B' Att. E
C. Provide the following information related to habitat for Federal threatened and endangered (T&E) plant and animal species or State T&E species or species of special concern - copies of search forms or search receipts; identification of avoidance and minimization efforts taken to resolve identified conflicts.			☒	Mod S2.C
Did the PNDI search or agency coordination identify any potential conflicts?	☐ Yes	☒ No		Att. G
If the above is answered **YES**; answer the following two questions related to PNDI Coordination:				
a. ***Is the applicant utilizing a sequential review of the PNDI coordination?***	☒ Yes	☐ No		Att. G
b. ***Is the applicant utilizing a concurrent review of the PNDI coordination?***	☐ Yes	☒ No		Att. G
D. Characterize the aquatic resources: riverine, wetland and lacustrine present on the project site that are proposed to be directly or indirectly affected by the project. Including but not limited to the following, resource classification information, Level 2 rapid condition assessment results, discussion of resource functions, characterization of riparian properties and any other relevant information or studies conducted.			☒	Mod S2.D; App S2.A-3
Module S3: Identification and Description of Potential Project Impacts				
This module is intended to organize and present information concerning the potential impacts or effects of the proposed project ***in this*** *application. Impacts related to the "over all" project that are proposed under related but separate application(s) should be addressed as part of the CEA Policy response under* ***S1.A****.*				
A. Provide a summary table of the proposed temporary and permanent direct and indirect impacts for each effected resource category (e.g. riverine, wetlands and lacustrine resources).			☒	Mod S3.A
B. If any questions from **S2.A** Standard Information Response questions were answered YES, discuss in detail any potential impacts to those resource(s).			☒	Mod S3.B

***IMPORTANT NOTE*: If either item vii or viii from S2.A is answered YES, the project is not eligible as a "Small Project Application" type. Complete all applicable sections of the EA form for the standard application type unless an item was otherwise waived by the Department in writing (see previous Note on waiving of information requirements).**		N/A

	Included	Item Location
C. Provide a table(s) of all proposed water obstruction(s), encroachment activities and dams (e.g. subfacility codes) and provide an identifier, the subfacility code and description, resource identifier from **S2.B**, latitude and longitude, the proposed temporary and permanent direct and indirect impacts and subfacility details.	☐	N/A
D. Provide a discussion of how the proposed subfacility(ies) individually and in combination directly and/or indirectly impact the identified resource(s) and the effects on the applicable resource functions: hydrologic, biogeochemical, habitat, recreation, any other environmental impacts and the effects on the property or riparian rights of owners upstream, downstream or adjacent to the project.	☒	Mod S3.D
E. **Antidegradation Analysis** - The applicant should demonstrate consistency with State antidegradation requirements as described in the Water Quality Antidegradation Implementation Guidance Policy Document Number 391-0300-002. Project application information provided below in **S3.F, G and H** may be cross-referenced.	☒	Mod S3.E
F. **Alternatives Analysis** - The scope and extent of this analysis should be commensurate with the size and scope of the proposed project impacts *in this* application, information provided in **S4.A** below, related to avoidance and minimization efforts, may be cross-referenced.	☒	Mod S3.F; Att. A
G. **Potential Secondary Impact Evaluation** - Identify and describe environmental impacts on adjacent land and water resources associated with but not that direct result of the project.	☒	Mod S3.G
H. Identify and evaluate the potential cumulative environmental impacts of this project and other potential or existing projects like it, and the impacts that may result through numerous piecemeal changes to the wetland resource.	☒	Mod S3.H
Module S4: Mitigation Plan		
*This module is intended to organize and present information concerning actions undertaken in accordance with the definition of **Mitigation** in Title 25 Pa. Code Chapter 105 - §105.1, 105.16, 105.18a(a)(3), 105.18a(b)(7), 105.20a, and 105.21 as related to the potential impacts or effects of the proposed project **in this** application.*		
A. Identify and discuss any measures taken that resulted in avoiding or minimizing unavoidable resource impacts, provide detailed responses for individual proposed impact area(s) **and** the project as a whole.	☒	Mod S4.A
B. Identify and discuss any repair, rehabilitation or restorative actions taken to rectify an impacted resource, provide detailed responses for individual proposed impact area(s) and the project as a whole. Identify and discuss any proposed preservation and maintenance operations that will be taken to reduce or eliminate an impact during the life of the project.	☒	Mod S4.B
C. Identify and discuss any actions undertaken to provide compensatory mitigation including the purchase of credits from an approved provider, a detailed discussion of proposed compensation actions and how they will offset the lost resource functions. Provide detailed plans including performance standards and success criteria.	☐	N/A
Answer the following question. If the answer to the question is **YES**, provide the information regarding the mitigation credit provider; otherwise provide a detailed mitigation plan. If the application proposes to utilize both mitigation bank credits and conduct permittee responsible mitigation; both the credit provider and mitigation plan information shall be submitted.	☐	N/A
Does the applicant propose to utilize an approved mitigation bank to provide all or a portion of the compensation? ☐ Yes ☒ No		
D. When applicable, provide a plan to monitor the identified actions proposed in **S4.B** and/or **S4.C** compensatory mitigation area. Applicants should utilize the Department's Design Criteria and the USACE's RGL 08-03 -(http://www.usace.army.mil/Portals/2/docs/civilworks/RGLS/rgl08_03.pdf) to develop monitoring plans for compensatory mitigation proposals. The plan should include performance standards/success criteria, duration and timeframes of monitoring, monitoring report template, and template remedial action or adaptive management plan.	☐	Mod S4.D; Att D
Note: All or portions of this Module may apply to "Small Project" type applications under case specific circumstances and should be discussed during any pre-application meetings or prior to application submittal.		
CERTIFICATION		
I certify that the above statements, attachments including those labeled and identified as Enclosures, and all conclusions are true, correct, and based upon current environmental principles and science, to the best of my knowledge and belief.		
Robin Dingl — Signature	1/31/2019 — Date	

Module S1: Project Summary

S1.A Overall Project Description

Sunoco Pipeline L.P. (SPLP) requests a major permit modification for a change in the route and installation methods of the 16-inch diameter pipeline from a Horizontal Directional Drill (HDD) to a conventional open trench and a conventional auger bore under William Penn Avenue (State Route 271). While conducting the permitted Goldfinch Lane/William Penn Avenue and William Penn HDDs for installation of the 20-inch pipeline through this area, several inadvertent returns (IRs) occurred and resulted in unpermitted discharges to Waters of the Commonwealth. The 20-inch HDD profiles were designed to the upper stress limits of the pipe to increase the depth of installation and to minimize the likelihood of IR events; however, due to the weakness of the geology above the profile, IRs occurred and despite numerous grouting attempts to seal the IR pathways, repetitive IR events could not be prevented. Given the geologic conditions at these HDD locations, the HDD evaluation staff cannot assure the Department that the 16-inch HDDs will not have similar problems in this area. Therefore, SPLP has elected to abandon any future HDD attempts to install the 16-inch pipeline through this area and has sought an alternate route of installation agreeable to the landowners and that minimizes impacts to Waters of the Commonwealth.

The 1.1 mile reroute would involve a conventional open trench excavation through eleven (11) wetlands (including one [1] pond) and nine (9) streams. All work will be conducted in accordance with permit conditions/requirements as well as the E&S and restoration plans (refer to Appendix D of this permit modification). The crossing will not result in any loss of wetland area or water quality/quantity and the localized impacts are considered minor and temporary.

Please refer to *Attachment A* of this permit modification request packet for the Project Description and Alternatives Analysis for this proposed change in installation method and alignment.

CEA Requirements

Per PADEP Technical Policy Guidance Document No. 310-2137-006, a Comprehensive Environmental Assessment that analyzes the alternatives, impacts, mitigation and antidegradation for all structures and activities associated with the overall Project was included with the original PPP Chapter 105 Joint Permit Application submitted to PADEP (E11-352. APS 879354). Specifically, Attachment 11 EAF, Enclosure E Part 3 addresses alternatives; Part 2 includes impacts; Part 4 identifies impact avoidance minimization and mitigation; and, Part 5 discusses antidegradation.

Information applicable to this specific permit modification request are presented in this submittal as follows:

- Alternatives – Module S3, S3.F
- Impacts – Module S3, S3.B
- Avoidance, Minimization, and Mitigation – Module S4
- Antidegradation – Module S3, S3.E

S1.B Project Purpose, Need, Water Dependency, and Summary of Resources and Impacts

Project Purpose & Need

As presented in the original PPP Chapter 105 Joint Permit (E11-352), the overall Project will provide transportation service of natural gas liquids (NGLs) with the combined pipelines from the Utica and Marcellus Shale formations for both domestic and international markets. NGLs are separated from the natural gas stream before consumer ready (dry) natural gas is shipped on the natural gas pipeline network. Upstream shippers are currently limited by the shortage of NGL transport systems. In addition, the Project will provide various delivery points to local Pennsylvania distributors for supply of needed propane supplies, at affordable prices, for use as heating and/or cooking fuel by consumers in Pennsylvania and neighboring states, increasing these fuel access and supply during peak demand periods when supplies would otherwise become short. Butane will also be shipped to local markets as a component of gasoline to ensure gasoline suppliers can meet seasonal vapor pressure restrictions.

Water Dependency

As presented in the original PPP Chapter 105 Joint Permit (E11-352), constructing and operating a natural gas liquids pipeline is not, per se, a water-dependent project. However, because of Pennsylvania's abundant water and wetland resources, any project which travels approximately 300 miles west to east across the Commonwealth requires the crossing of, and therefore access to, waters and wetlands. The overall Project requires access and proximity to and siting in, on, over or under waters and wetlands in order to achieve its primary purpose to transport natural gas liquids from Houston, Washington County to SPLP's existing facility in Marcus Hook, Delaware County. Therefore, the linear nature and approximately 300-mile length of the Project across 17 counties west to east in Pennsylvania makes the Project water-dependent.

Summary of Resources & Impacts

The impacts associated with the Goldfinch Lane/William Penn Avenue and William Penn Avenue Reroute will total approximately 33,534 ft^2 (0.77 acre) of permanent and 1,172 ft^2 (0.03 acre) of temporary wetland impacts, 4,480 ft^2 (0.10 acre) of permanent and 88 ft^2 (0.002 acre) of temporary stream impacts, and approximately 56,446 ft^2 (1.30 acres) of permanent and 12,692 ft^2 (0.29 acre) of temporary floodway impacts, respectively. Although PADEP defines pipeline operation and maintenance activities as permanent impacts, the impacts are considered minor/localized and temporary as the disturbed areas of the affected wetlands, streams, and associated floodways will be restored to their preconstruction condition (i.e., vegetation, elevation, flow, stream substrate, stream banks, hydrologic conditions). In addition, the wetland soils will be segregated during construction (double ditching) to maintain the native seed bank/composition and the PSS wetlands will be replanted with shrubs following construction. The resource crossings will not involve any permanent fill; the streams will not be relocated, and there will be no permanent loss of stream or wetland habitat or permanent loss of functions and values associated with the reroute modification request. Please refer to *Appendix E* of this permit modification request packet for the updated Aquatic Resource Impact Table.

Wetland (W2r) is classified as an exceptional value (EV) wetland as it is located in or along the floodplain of the reach of a wild trout stream. SPLP will restore the disturbed EV wetland to its pre-existing condition such that surface water hydrology is restored and the re-establishment of

hydrophytic vegetation is facilitated. SPLP will also implement E&S BMPs including the appropriate antidegradation best available combination of technologies (ABACT) measures for the EV wetland. No long-term impacts to this resource are anticipated.

The proposed reroute would cross streams designated by the Pennsylvania Fish and Boat Commission (PAFBC) as Drains to Approved Trout Waters (ATW) or Drains to ATW and Trout Natural Reproduction (TNR) streams. Therefore, SPLP will comply with timing window restrictions/limitations (i.e., 3/1 to 6/15 for ATW and 10/1 through 12/31 for TNR) during construction and will work with the appropriate agencies to avoid and minimize potential impacts to trout/spawning/migrating fish.

Module S2: Resource ID & Characterization

S2.A Location Map & Wetland Delineation Report.

The original location of the Project is provided in the Location Map prepared and submitted for the Project's Chapter 105 Joint Permit Application for Cambria County. The applicable page from the original application is provided in Appendix S2.A-1 and has been modified to reflect the location of the Project with the proposed Goldfinch Lane/William Penn Avenue Reroute as well as the locations of the wetlands and streams affected.

Similarly, an *Aquatic Resources Report* for Cambria County was prepared in July 2015 and submitted as part of the PPP Chapter 105 Joint Permit Application. The Aquatic Resources Report presents the results and conclusions of wetland and stream identification activities completed for the entire Project right-of-way. For this major permit modification request, an excerpt of the Aquatic Resources Report including information on Wetlands N20 and O35, and Streams N35, O43, and O44 are included as Appendix S2.A-2. In addition, a wetland delineation survey was conducted on December 5, 2018 and a supplemental *Aquatic Resources Report* with information on the wetlands and streams affected by the Goldfinch Lane/William Penn Avenue Reroute are also included in Appendix S2.A-2.

The proposed Project reroute will not cross any designated national, state, or local, parks forest or recreation areas; State Game Lands, natural wild, or wilderness areas; national, state, or local historic sites; national natural landmarks; wildlife refuges or management areas; federal, state, local, or private plant or wildlife sanctuaries; cultural or archaeological landmarks; designated critical or significant habitats, core habitats, or supporting landscapes. However, the proposed Goldfinch Lane/William Penn Avenue Reroute will cross soils classified as Prime Farmland in Cambria County. Specifically, it is anticipated that the proposed reroute will cross approximately 480 feet of Prime Farmland.

No public water suppliers (PWS) were identified within 0.5 mile of the proposed Goldfinch Lane/William Penn Avenue Reroute.

S2.B Aquatic Resources

For this permit modification request, SPLP identified all aquatic resources present within the Project reroute area and the resources that would be affected by the proposed reroute including eleven (11) wetlands and nine (9) streams.

Wetland W1r is crossed by the Project in three different locations. The entirety of the delineated limits of wetland W1r is identified as a palustrine emergent (PEM) wetland cover type. The dominant vegetation is generally consistent through each of the three proposed crossings of wetland W1r, primarily consisting of reed canarygrass (*Phalaris arundinacea*). The soils identified exhibit a borderline low-chroma matrix (10YR 3/1) with a silty loam texture (between 0 to 3 inches) and a low-chroma matrix (10YR 4/2) with a silty loam texture (between 3 to 14 inches) that contains redoximorphic features (7.5YR 5/8).

Wetland W2r where the Project crosses is identified as a PEM wetland cover type with dominant vegetation consisting of reed canary grass, melic mannagrass (*Glyceria melicaria*), and common rush (*Juncus effusus*). The soils identified exhibit a borderline low-chroma matrix (10YR 3/3) with a silty loam texture (between 0 to 3 inches) and a low-chroma matrix (10YR 4/2) with a silty loam

texture (between 3 to 12 inches) that contains redoximorphic features (7.5YR 5/8). Wetland W2r is identified as an EV wetland as it is located in or along the floodplains of the reach of stream S1r, a wild trout stream.

Wetland W3r where the Project crosses is identified as a PEM wetland cover type with dominant vegetation consisting of cinnamon fern (*Osmundastrum cinnamomeum*) and common rush. It is a low-lying depression with an immature forest area surrounding it. The soils identified exhibit a borderline low-chroma matrix (10YR 3/2) with a silty loam texture (between 0 to 4 inches) and a low-chroma matrix (10YR 4/2) with a silty loam texture (between 4 to 12 inches) that contains redoximorphic features (7.5YR 5/8).

Wetland W5r where the Project crosses is identified as a palustrine scrub-shrub (PSS) wetland cover type with dominant vegetation consisting of silky dogwood (*Cornus amomum*), sensitive fern (*Onoclea sensibilis*), arrowleaf tearthumb (*Persicaria sagittata*), and common rush. The soils identified exhibit a borderline low-chroma matrix (10YR 3/1) with a silty loam texture (between 0 to 3 inches) and a low-chroma matrix (10YR 5/2) with a silty loam texture (between 3 to 14 inches) that contains redoximorphic features (10YR 5/6). Some upland trees are present on upland "islands" within the wetland boundary.

Wetland W6r where the Project crosses is identified as a PSS wetland cover type with dominant vegetation consisting of pussy willow (*Salix discolor*), silky dogwood, sensitive fern, reed canarygrass, and common rush. The soils identified exhibit a low-chroma matrix (10YR 3/1) with a silty loam texture (between 0 to 4 inches) and a low-chroma matrix (10YR 5/2) with a silty loam texture (between 4 to 12 inches) that contains redoximorphic features (7.5YR 5/8).

Wetland W7r where the Project crosses is identified as a PSS wetland cover type with dominant vegetation consisting of silky dogwood, cinnamon fern, and common rush. The soils identified exhibit a low-chroma matrix (10YR 3/1) with a silty loam texture (between 0 to 3 inches) and a low-chroma matrix (10YR 5/2) with a silty loam texture (between 3 to 14 inches) that contains redoximorphic features (7.5YR 5/8).

Wetland W8r where the Project crosses is identified as a PSS wetland cover type with dominant vegetation consisting of silky dogwood, pussy willow, common rush, and sensitive fern. The soils identified exhibit a low-chroma matrix (10YR 3/1) with a silty loam texture (between 0 to 4 inches) and a low-chroma matrix (10YR 4/2) with a silty loam texture (between 4 to 14 inches) that contains redoximorphic features (10R 5/6).

Wetland W9r where the Project crosses is identified as a PSS wetland cover type with dominant vegetation consisting of pussy willow, gray alder (*Alnus incana*), and sensitive fern. The soils identified exhibit a borderline low-chroma matrix (10YR 2/2) with a silty loam texture (between 0 to 4 inches) and a low-chroma matrix (10YR 5/2) with a silty loam texture (between 4 to 14 inches) that contains redoximorphic features (7.5YR 5/8).

Wetland N20 where the Project crosses is identified as a PEM wetland cover type with vegetation consisting of black elder (*Sambucus nigra*) and common spike-rush (*Eleocharis palustris*), along with several other emergent plants. Although there are some shrubs present in this wetland, there is not enough shrub density to be considered a PSS wetland. The soils identified exhibited a low-chroma matrix (10YR 3/1) with a mucky texture (between 0 and 2 inches) and a low-chroma matrix (2.5Y 5/2) with a silty clay loam texture that contains redoximorphic features (7.5YR 5/8).

Wetland O35 where the Project crosses is identified as a PSS wetland cover type with dominant vegetation consisting of black willow, broad-leaf cattail (*Typha latifolia*), touch-me-not (*Impatiens* spp.) and wrinkle-leaf goldenrod (*Solidago rugosa*). The soils identified exhibit a low-chroma matrix (10YR 4/1) with a silt loam texture (between 0 and 12 inches) that contain redoximorphic features (7.5YR 4/6).

Stream S1r is a perennial tributary to Hinckston Run with a bank to bank width of approximately 3 feet and is associated with wetland W2r. Stream S2r is an intermittent tributary to Hinckston Run with a bank to bank width of approximately 1 foot. Stream S3r is an intermittent tributary to Hinckston Run with a bank to bank width of approximately 2 feet and is associated with wetlands W5r and W6r. Stream S4r is Hinckston Run, a perennial stream, with a bank to bank width of approximately 30 feet and is associated with wetlands W6r and W7r. Stream S6r is an intermittent tributary to Hinckston Run with a bank to bank width of approximately 1 foot and is associated with wetlands W7r and W8r. Stream S7r is a perennial tributary to Hinckston Run with a bank to bank width of approximately 10 feet and is associated with wetland W9r. Stream N35 (S-N35) is an intermittent tributary to Hinckston Run with a bank width of approximately 2 feet. Stream O43 (S-O43) is an intermittent tributary to Hinckston Run with a bank width of approximately 1 foot. Stream O44 (S-O44) is a perennial tributary to Hinckston Run with a bank width of approximately 5 feet, associated with wetlands N19 and O35.

Based on review of eMapPA maintained by the PADEP and a review of Drainage List A of Pennsylvania Code, Title 25, Chapter 93, SS 93.9h, the designated/protected uses and fisheries classification for the streams are Drains to Cold Water Fisheries (CWF), except for streams S4r (Hinckston Run), S7r (UNT to Hinckston Run) and S-O44 (UNT to Hinckston Run) which are classified directly as CWF.

The PAFBC classifies steams S1r and S2r as draining to ATW and TNR streams. The remaining streams are all designated as draining to ATW. Activities within the streams are considered non-jurisdictional by the USACE.

S2.C PNDI T&E plant and animal species or State T&E Species or Species of Special Concern Agency Coordination and Search Receipts

For this permit modification associated with the Goldfinch Lane/William Penn Avenue Reroute, a new request was submitted to the Pennsylvania Natural Diversity Index on January 17, 2019 (PNDI-675098). Based on the results of this search, no known impacts to threatened and endangered species and/or special concern species and resources were identified within the Project area. Therefore, no further coordination with the jurisdictional agencies is required. Please refer to *Attachment G* of this permit modification request packet for the PNDI update and agency coordination/correspondence.

S2.D Resource Classification Information; Level 2 Rapid Condition Assessment Results, Resource Function, Riparian properties and any other relevant studies.

This permit modification request is for a change in route and installation method of the 16-inch diameter pipeline from HDD to conventional open trench, and conventional auger bore under William Penn Avenue (State Route 271). Due to the proposed reroute and newly identified aquatic resources that would be directly or indirectly impacted by the proposed reroute, a brief description

of the wetlands, streams, and associated floodways are presented below for this permit modification request.

The wetlands and streams identified for the Goldfinch Lane/William Penn Avenue Reroute are located within the physiographic province of the Appalachian Plateau section. The surrounding land uses include agricultural, open fields/pasture, rural housing and roads, other gas pipeline ROWs, and/or wetland and upland scrub shrub-and forested habitats.

A wetland function-value assessment of Wetland W2r (EV wetland) was conducted and is included as Appendix S2.A-3. As presented therein, the principal functions and values identified for this wetland include groundwater recharge/discharge, fish and shellfish habitat, and sediment/toxicant retention. The wetland is also suitable for floodflow alteration, nutrient removal, sediment/shoreline stabilization, wildlife habitat and for uniqueness/heritage. The wetland is not believed to be substantially utilized during the migration of wildlife or birds.

Four (4) streams including Streams S1r, S4r, S7r, and S-O44 were identified as perennial streams providing potential habitat for seasonal spawning of game and non-game fish species. These streams have the potential to be used for resting by a variety of birds and mammals. Wildlife are more likely to utilize remote and secluded areas that offer more protection/cover for resting which would include some portions of the forested area along the Goldfinch Lane/William Penn Avenue Reroute. As these are perennial streams, the streams support a continuous flow of water with moderate rates of flushing and residence times. The remaining streams, Streams S2r, S3r, S6r, S-N35, and S-O43 are intermittent streams and do not support a continuous flow of water throughout the year. These streams support similar habitat as perennial streams, except for providing a year-round water source.

Although all the streams are classified as PAFBC Drains to ATW, or Drains to ATW and TNR streams (Streams S1r and S2r), seasonal migration of trout during spawning would likely be limited to Streams S1r, S4r, S7r, and S-044 based on these streams' perennial flow characteristics. Similarly, the potential for anadromous fish migration to occur is likely to occur for the streams designated as CWF. Regardless, SPLP is aware of the timing window restriction associated with these streams (i.e., 3/1 to 6/15 for ATW and 10/1 through 12/31 for TNR) and will work with the appropriate agencies to avoid/minimize potential impacts to the streams' trout resources and comply with any agency restrictions or limitations. SPLP will update PADEP of future agency coordination/responses as it becomes available.

The wetlands and streams all provide a food source for invertebrates, birds, reptiles, amphibians, and mammals. Growth of herbaceous plants constitute the food chain base that supports primary consumers such as invertebrates and small mammal herbivores. Secondary and tertiary consumers are supported by the diversity and abundance of prey in the wetland and stream ecosystems. In addition, most of the streams support photosynthetic algae, overhanging woody vegetation, and/or small aquatic vascular plants that support invertebrate herbivores. Such invertebrates are consumed by small reptiles and fish that can inhabit the streams. Both the wetland and streams likely support aquatic insects or amphibians that meet specific prey requirements of birds and mammals with an affinity for stream habitats such as raccoon (*Procyon lotor*). The streams are also likely utilized by a variety of wildlife species as a source of drinking water.

The water quality of the streams is considered good, as evidenced by their classifications as CWF/drains to CWF and drains to ATW/TNR classifications. Based on the size and location of the streams, there is potential for some of the streams to be utilized for recreational or sport fishing opportunities.

Module S3: Identification and Description of Potential Project Impacts

S3.A Impact Summary

Table S3.A-1 Summary of Project Impacts
Permit Modification Request for the Goldfinch Lane/William Penn Avenue Reroute
Open Cut Crossing Method

Resource Category	Corps 404		PADEP/105	
	Temporary (ft^2)	Permanent (ft^2)	Temporary (ft^2)	Permanent (ft^2)
Wetlands	34,706	N/A	1,172	33,534
Streams	4,568	N/A	88	4,480
Floodways	N/A	N/A	12,692	56,446

S3B. Standard Information Responses

The requested permit modification for open cut crossing of the wetlands and streams associated with the Goldfinch Lane/William Penn Avenue Reroute will not impact any resources identified in Module S2, Part A except for approximately 480 feet of Prime Farmland. Therefore, SPLP will take precautions during the construction and restoration to protect these unique soils. Potential short-term impacts to prime farmland soils associated with construction may result in increased soil erosion and sedimentation on steep slopes and at stream crossings due to the removal of vegetation, compaction of soils, inclusion of rock fragments in topsoil (caused by blasting) and poor revegetation. However, SPLP will prevent and minimize impacts on prime farmland soils. Specifically, SPLP will segregate and conserve topsoil, utilize decompaction if necessary, and compensate landowners for temporary suspension of crop production during the construction period. Because SPLP will restore the Project ROW and most agricultural activities will be allowed to resume following installation of the 16-inch pipeline, the Project would not have long-term impacts on Prime Farmland soils.

S3.C Subfacility Details

Information related to the proposed water obstruction, encroachment activities, and temporary/permanent impacts associated with the requested permit modification to open cut/trench wetlands, streams, and floodways is provided in the original PPP Chapter 105 Joint Permit Application (E11-352) and summarized within this Environmental Assessment, as well as the other Attachments comprising this permit modification packet.

S3.D Direct and Indirect Impacts

As discussed above, direct and indirect impacts for the overall Project were presented in Attachment 11, Enclosures D and E (Part 2) of the PPP Chapter 105 Joint Permit Application (E11-352). Excerpts from the submittal and additional information relevant to this permit modification request for the Goldfinch Lane/William Penn Avenue Reroute using open cut/trench construction method are discussed below.

Wetlands

The proposed open cut/trench crossing of the wetlands will result in approximately 33,534 ft^2 (0.77 acre) of permanent and 1,172 ft^2 (0.03 acre) of temporary wetland impacts. As defined by PADEP, permanent impacts include direct and indirect effects resulting from the placement or construction of the pipeline and impacts to those areas necessary for the long-term operation and maintenance of the pipeline. Temporary impacts include areas affected during the construction of the Project that will be restored when construction is completed. All physical/ecological impacts are considered minor and temporary: topsoil and subsoils will be segregated and SPLP will install trench plugs at wetland boundaries to minimize wetland impacts during construction; then wetlands will be restored to their original condition (i.e., wetland soils, hydrophytic vegetation, elevation, flow, stream substrate, hydrologic conditions, etc.). SPLP will not maintain the ROW through wetland areas (i.e., no mowing); therefore, the pre-and post-construction conditions of the wetlands will remain the same. In addition, the Project would not involve any permanent fill or conversion of cover type/vegetation, and there would be no permanent loss of wetlands or streams associated with the Project.

As previously noted, Wetland W2r is classified as an EV wetland as it is located in or along the floodplains of the reach of a wild trout stream. The open cut/trench construction method through this wetland would be a temporary disturbance to the wetland's vegetation, hydrology, soils, and functions and values. In order to reduce impacts, SPLP has reduced the construction workspace width to 50-feet, where possible. SPLP will separate topsoil during construction and replace the wetland soil to its original horizon and elevation to maintain the natural seed bed and facilitate revegetation of the disturbed wetland area. Based on implementation of these avoidance, minimization, and mitigation measures, effects of the requested open cut/trench crossing are likely to be minimal. As previously noted, SPLP will restore the disturbed wetland area to its pre-existing condition such that surface water hydrology is restored and the re-establishment of hydrophytic vegetation is facilitated. SPLP will also implement E&S BMPs and the appropriate antidegradation best available combination of technologies (ABACT) measures for the EV wetland. Consequently, the functions and values of Wetland W2r will incur nominal impacts and its classification as EV will not be altered. Similarly, temporary and minor impacts would occur to the food chain, nesting/resting, and feeding activities within the wetland. Additional detail regarding wetland construction methods were provided in the Project' Chapter 105 Joint Permit Application in Attachment 11 Enclosure E Part 2.

Streams

The proposed open cut/trench crossing of streams will result in approximately 4,480 ft^2 (0.10 acre) of permanent and 88 ft^2 (0.002 acre) of temporary stream impacts, and 56,446 ft^2 (1.30 acres) of permanent and 12,692 ft^2 (0.29 acre) of temporary floodway impacts. Similar to the wetland impacts, PADEP defines permanent impacts as direct and indirect impacts resulting from the placement or construction of the pipeline and to those areas necessary for the long-term operation and maintenance of the pipeline. Temporary impacts include areas affected during construction of the Project that will be restored when construction is completed. All physical/ecological impacts are considered minor and temporary as the streams will be restored to their original condition (i.e., elevation, flow, stream substrate, hydrologic conditions, etc.). SPLP will not maintain the ROW through the streams (i.e., no mowing); therefore, the pre-and post-construction conditions of the streams will remain the same. In addition, the Project would not involve any permanent fill or

conversion of cover type/vegetation, and there would be no permanent loss of stream associated with the Project.

Impacts to the streams would occur as a result of in-stream construction activities and would result in a temporary localized increase in turbidity levels and downstream sediment deposition. Sediments that become suspended during the short period of in-stream disturbance (i.e., installation of the dam and pump) are expected to settle out of the water column relatively quickly.

Temporary impacts would occur to aquatic life in the streams (including floodways) at or downstream from the construction site (pipe crossing), including potential degradation of benthic habitat due to direct disturbance to the bottom substrate in the trench zone, and associated disturbances to aquatic vegetation and invertebrates within the construction right-of-way. Indirect impacts from sedimentation may affect areas downstream, but generally conditions would be expected to resolve relatively quickly (e.g., dry crossing methods involving in-stream excavation would have a limited effect on downstream sedimentation for a period of 1 to 3 days).

Indirect, long-term impacts to fish spawning/migration could occur (particularly to the identified perennial streams) if substantial changes to stream substrate or current patterns result from Project construction. However, substantial changes to stream substrate and current patterns are not anticipated because the native stream substrate will be replaced, and stream bed and banks will be restored as closely as possible to the original contours following construction. Furthermore, SPLP is aware of the timing window restriction associated with these streams (i.e., 3/1 to 6/15 for ATW and 10/1 through 12/31 for TNR) and will work with the appropriate agencies to avoid/minimize potential impacts to the streams' trout resources and comply with any agency restrictions or limitations. No impacts to fish spawning/migration are anticipated during Project operations.

In addition to the above, no fill, aboveground facilities or alteration of surface elevations/contours are proposed within the streams' floodways as they will be restored to pre-construction conditions. As such, the Project would not result in long-term impacts to the associated floodways.

Construction of the proposed Project is not expected to affect the flushing characteristics of the streams. SPLP has sited the right-of-way such that the stream crossings are generally perpendicular and thereby of minimal impact. In addition, the Project will not alter the volume of water or flow rates that the streams typically/naturally experience. Furthermore, stream channels will be restored to pre-construction contours, thereby restoring pre-existing flushing characteristics and patterns within both the stream and wetlands crossed. Similarly, operation of the Project would not have any impact on natural drainage patterns.

Construction of the proposed Project is not expected to affect groundwater discharge that may be important for supporting stream baseflow or wetland hydrology. Trench plugs will be installed in the trench at the entry and exit of all streams crossed to prevent draining of streams along the trench line. In addition, there are no groundwater control features or interceptor structures incorporated into the Project design. Topographic contours and drainage patterns will be restored following construction of the Project and impacts to groundwater discharge are not anticipated.

There are no proposed aboveground facilities associated with this permit modification request. Therefore, construction is not expected to negatively impact the ability of the streams to either store or control storm and flood waters.

SPLP has designed the Project to avoid and minimize impacts to stream resources to the greatest extent possible. SPLP will conduct all activities in accordance with the Chapter 102 Permit requirements and will implement erosion and sediment control best management practices (BMPs) and ABACT measures, as necessary. Thus, this requested permit modification will not cause long-term degradation of water quality, alter flow volumes, or change the direction of flow.

Vegetation & Wildlife

For this permit modification, co-location with SPLP's existing ROW and other utility corridors was paralleled to the maximum extent possible but was not entirely practicable. Therefore, while SPLP generally parallels its existing ROW in a west to east direction, the proposed Goldfinch Lane/William Penn Avenue reroute veers to the south, paralleling the edges of forested habitat where the forested areas meet agricultural fields. As such, some portion of the new proposed route will affect vegetation in upland shrub lands, upland forests, open lands (meadows and fields), agricultural areas and wetlands (as discussed above). Upland vegetation will be altered within permanent impact areas, including permanent ROW and will be permanently maintained in an open condition (herbaceous and shrub species) by routine mowing. Upland vegetation in the temporary impact areas including temporary ROW, additional temporary workspace will be allowed to revert to its preconstruction cover type. The disturbed areas will be revegetated and maintained in accordance with the Project's E&S Plan and BMPs for restoration and maintenance will be implemented.

Vegetation removal may result in the loss/mortality of some less mobile species such as small amphibians, reptiles, and mammals or insects; however, this would not adversely impact the overall population or viability of these species along the proposed pipeline corridor. Impacts to wildlife during operation are anticipated to be minimal in nature and of short duration such that they are negligible. Routine maintenance and mowing could result in some disturbances but are not anticipated to permanently displace wildlife from their habitat. Wildlife are anticipated to return and continue to use the habitat once these activities cease.

While the Project will result in the creation of a new ROW resulting in permanent change in cover type along the permanent ROW, siting the majority of proposed reroute along the edges of forested habitat and agricultural areas will shift edge conditions to the new ROW limit. In addition, with revegetation/restoration of temporarily disturbed areas, no adverse long-term impact to vegetative communities is anticipated. In addition to the above, the proposed reroute would not cross identified Core Habitat areas or Landscape Conservation areas. Therefore, the Project would have no impact to Vegetation Communities of Special Concern.

S3.E Antidegradation Analysis

An Antidegradation Analysis was prepared for the overall Project and submitted as part of the PPP Chapter 105 Joint Permit Application (E11-352) in Attachment 11, Enclosure E (Part 5). The Antidegradation Analysis was prepared in accordance with 25 Pa. Code § 105.14(b)(11). Specifically, SPLP's Joint Permit Application for a Pennsylvania Water Obstruction and Encroachment Permit Application and U.S. Army Corps of Engineers (USACE) Section 404 Permit Application for the Project needed to ensure consistency with State antidegradation requirements contained in Chapters 93, 95 and 102 (relating to water quality standards; wastewater treatment requirements; and erosion and sediment control) and the Clean Water Act (CWA) (33 U.S.C.A. § § 1251—1376).

PADEP has implemented an Antidegradation Program to promote the maintenance and protection of existing water quality for Exceptional Value (EV) waters, and the protection of existing uses for all surface waters (PADEP 2003). Wetland W2r is classified as an EV wetland and all of the streams to be crossed by the proposed reroute are either classified as CWF streams or drains to CWF, ATW streams, or Drains to ATW and TNR streams. Therefore, the antidegradation requirements applicable to this permit modification is limited to the protection of the existing water uses (93.4a(b)) and water quality (93.4a(c)), as well as the use and quality of the EV wetland (93.4a(d)).

- **Section 93.4a(b)** states that "Existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." In order to reduce water use impacts, SPLP has reduced the construction right-of-way (ROW) to 50 feet across stream crossings and floodways, where possible; limited the land disturbance to the excavated trench line, and temporary minor grading of the stream banks at the travel lane crossing, as required; limited the time/duration of in-stream construction (typically less than 2 days); designed the crossings such that the pipeline will be 5 feet under the streams, as compared to the PADEP 3 foot depth requirement; and, implemented erosion and sediment control measures for all land disturbances in accordance with PADEP's Erosion and Sediment Pollution Control Program Manual (PADEP 2012) as demonstrated throughout the Project's ESCGP Permit applications. With the proper implementation and maintenance of these protective measures, construction-related Project impacts to water quality such as increased turbidity related to sedimentation and in-stream construction will be minor, temporary, and localized and will not adversely impact or degrade the water resources. Specifically, the water quality and designated/existing uses of the streams will be maintained and protected post-construction.

- **93.4a(d): Protection for Exceptional Value Waters** states that "The water quality of Exceptional Value Waters shall be maintained and protected." The proposed Project will protect and maintain the existing/designated uses and water quality of the EV wetland impacted by this requested permit modification. Specifically, SPLP has reduced the construction ROW to 50 feet through the wetlands, where possible; limited the land disturbance to the excavated trench line and minor grading of the travel lane crossing, as required; roots/stumps will be left in place, to the extent possible, so that the roots stabilize the soils (minimize erosion), and re-establishment of native vegetation is facilitated; limited the time/duration of construction; implemented the bore crossing method for the 20-inch pipe; required the use of timber mats when working in and travelling through the wetland; designed the crossing such that the 16-inch pipe will be 4 feet under wetlands, as compared to the PADEP 3 foot depth requirement; and, implemented erosion and sediment control measures for all land disturbances in accordance with PADEP's Erosion and Sediment Pollution Control Program Manual (PADEP 2012) as demonstrated throughout the Project's ESCGP Permit applications. In addition, SPLP has incorporated ABACT BMPs into their E&S Plan to further reduce potential impacts to this EV resource by reducing/controlling turbidity associated with sedimentation and construction activities. Specifically, standard and ABACT BMP measures that SPLP will implement to control/manage erosion and sedimentation within the Project area include:

    - Use of wash racks at rock construction entrances;

- Placement of compost filter socks on the downgradient side of the filter bags and/or dewatering structure;
- Application of erosion control blanket within 100 feet of receiving EV waters/wetlands and on slopes 3:1 (H:V) or steeper;
- Installation of compost filter socks at slope breaker outlets to provide additional filtration prior to discharge to surface waters;
- Installation of berms and trenches to promote infiltration and manage flow rate;
- Implementation of the PPC Plan; and,
- Application of permanent seeding for site restoration.

As previously stated, Project impacts to wetlands, including EV resources, will be minor, temporary, and localized. As further demonstrated above, Project implementation of the requested crossing method, PADEP-approved ABACT BMPs identified above, and the revised 102 drawings (*Appendix D* of this permit modification request packet) will ensure the maintenance and protection of the overall water quality of the EV wetland. In addition, the area around and in the EV wetland will be restored to pre-construction conditions following construction such that water quality is further protected and maintained post-construction.

Chapter 93.4c(a)(2) requires the protection of endangered or threatened species if PADEP has confirmed the presence, critical habitat, or critical dependence of endangered or threatened Federal or Pennsylvania species in or on a surface water. As noted above, a new PNDI search review did not identify any T&E species or Special Species of Concern associated with the Goldfinch Lane/William Penn Avenue Reroute. Please refer to Module 2, S2.C of this Environmental Assessment and *Attachment G* of this permit modification request packet for additional information.

Chapter 93.6 states that a project will not introduce/discharge any substance "in concentrations or amounts sufficient to be inimical or harmful to the water uses to be protected or to human, animal, plant, or aquatic life," including actions that could produce turbidity. The requested permit modification will result in minor, temporary, and localized impacts to surface waters of the Commonwealth primarily associated with increased turbidity during construction activities. The requested permit modification does not involve any permanent structures/facilities that will discharge any treated or created industrial wastewater, nor will it alter the existing natural conditions (chemical, biological, or physical) of the water resources crossed by the Project. In addition, the Project does not involve the addition or discharge of any toxic (Section 93.8a) or harmful substances into the waters of the Commonwealth. All water resources will be restored to their pre-existing conditions following Project construction such that their designated/existing water uses are not impacted by the Project. Accordingly, the proposed Project does not have the potential to alter the water quality such that the existing water uses or aquatic life of the HQ and EV resources will be affected.

Please refer to the complete *Antidegradation Analysis* for additional details/information.

S3.F Alternatives Analysis

An Alternatives Analysis was prepared and submitted as part of the PPP Chapter 105 Joint Permit Application (E11-352) in Attachment 11, Enclosure E (Part 3). In addition, an Alternatives

Analysis specific to the requested open cut crossing of the wetlands and streams associated with the Goldfinch Lane/William Penn Avenue Reroute has been prepared for this permit modification request.

Please refer to *Attachment A* of this permit modification request packet for the updated Project Description and Alternatives Analysis for these resource crossings.

S3.G Potential Secondary Impact Evaluation

A Resource ID and Project Impacts Report was prepared and submitted as part of the PPP Chapter 105 Joint Permit Application (E11-352; APS 879354) in Attachment 11, Enclosure E (Part 2). Potential secondary impacts to wetlands/streams and the aquatic habitat, water quantity, and water quality resulting from the Project were discussed in Section 4.1 of that report. Excerpts applicable to the proposed permit modification for the affected wetlands and streams and additional pertinent information are discussed below.

Potential secondary impacts to wetland/stream habitats could result from the Project, including short-term release of sediments into waterways and vegetation clearing, that could result in the temporary displacement of wildlife to adjacent areas. These short-term impacts adjacent to and downgradient of the LOD could temporarily alter substrate and make it less suitable for spawning and foraging, and may create temporary turbidity that could alter the feeding habits of local wildlife. In addition, the clearing of vegetation reduces the shelter and buffer capacity to adjacent habitats and creates new edge habitat when located through greenfield areas. SPLP has mitigated for these potential secondary impacts by minimizing/reducing the area of disturbance and clearing, the duration of construction activities in stream and wetland areas, implementing the E&S BMPs (Appendix D) and appropriate ABACT measures, and restoring the disturbed areas with vegetation to avoid impacts off the ROW.

Other potential secondary impacts to wetlands such as the introduction of invasive or exotic vegetation will be avoided by topsoil segregation of trench material, which maintains the native seed source, and the prompt establishment of native or temporary cover immediately following construction. In addition, restoration of wetland areas by planting native shrub vegetation will avoid secondary impacts to adjacent habitat caused by changes in vegetative community or establishment of invasive or exotic vegetation.

Potential secondary impacts on adjacent stream/aquatic habitat functions could result from the short-term release of turbid waters and vegetation clearing, resulting in the temporary displacement of wildlife that use adjacent areas for spawning, foraging, nesting, rearing, and resting. However, the potential secondary impacts from the release of turbid waters, at most, will be negligible in nature given the short duration of in-stream construction, the intermittent flow characteristics of the streams, and through implementation of temporary and permanent E&S controls (refer to Attachment D of this permit modification packet). Most of the streams are buffered by wetlands and the affected areas of the wetlands will be restored with native shrubs and allowed to revert back to the PSS condition. Restoration of these areas with native plant species will avoid potential secondary impacts to adjacent habitat from changes in vegetation communities as well as the establishment of invasive or exotic vegetation.

Potential secondary impacts on water quantity or the hydrology of streams could result from changes in natural/current drainage patterns and alteration in flow and water levels from

construction. However, the Project does not involve any stream relocations, enclosures, channel deepening/dredging activities, and addition of structures or impervious surfaces in the wetland/stream complex. Given that the Project does not involve direct impacts to natural and current drainage patterns, the Project will likewise not result in secondary impacts to natural and current drainage patterns. Temporary dam and flow bypass methods will be used to maintain a continuous downstream flow during construction.

Potential secondary impacts to stream water quality beyond the Project's limit of disturbance could result from: release of sediments/turbid waters from trenching, dewatering, clearing and grading of adjacent land and stream banks, and post-construction stream bank subsidence; and, release of pollutants from construction equipment or activities adjacent to waters. However, in accordance with the Chapter 102 E&S requirements, trench dewatering will be monitored and directed into appropriate receiving structures located in well-vegetated uplands to allow for filtration. Released water will naturally infiltrate to prevent secondary impacts to water quality of streams outside the ROW. Potential secondary impacts from stream bank subsidence will be avoided by leaving roots/stumps in place, except for over the trench, and by stabilizing and revegetating stream banks as soon as possible after construction. Post-construction monitoring will ensure that successful restoration occurs, or necessary corrective actions are implemented to result in successful restoration, thereby avoiding potential secondary impacts from stream bank subsidence/subsequent downstream erosion and sedimentation. Additionally, aerial and ground inspections during Project operation will identify stream bank subsidence and soil erosion issues which will be rectified by repairs or installation of temporary erosion control devices until permanent erosion control measures become effective.

Potential secondary impacts to adjacent resources will be avoided and minimized to the extent possible such that there is no loss of aquatic habitat, water quantity, or water quality.

S3.H Potential Cumulative Impacts

A Cumulative Impact Analysis (CIA) was prepared for the overall Project and submitted as part of the PPP Chapter 105 Joint Permit Application (E11-352) in Appendix 11, Enclosure E (Part 6). The CIA addresses the cumulative impact for the entire Project and other potential or existing SPLP projects, and other oil and gas projects within the Cumulative Impact Assessment Area (CIAA) of the Project.

All wetlands affected by construction for the proposed Goldfinch Lane/William Penn Avenue Reroute will be restored as wetlands. Some functions and values of the wetlands would be temporarily affected during construction. However, as most of the wetlands extend beyond the Project boundaries, these wetlands would also continue to provide functions and values during construction as the impact area relative to the size of the wetlands is minor. Furthermore, the scrub-shrub wetlands affected by the Project will be replanted onsite to mitigate temporal impacts to functions and values. Some functions/values may be slightly reduced (wildlife habitat), some will not be altered (groundwater discharge), and others may be increased due to the establishment of a thick herbaceous ground layer (sediment retention and nutrient removal). There will be a temporal loss of the previously listed functions during construction and near-term post construction until the wetlands are restored. No permanent fill in wetlands is proposed; consequently, no loss of wetland area would result from construction or operation of the requested modification in crossing methodology. When the impacts to the wetlands from the proposed

Goldfinch Lane/William Penn Avenue Reroute are added to the wetland impacts from all other projects in the CIAA, a maximum of approximately of 47.9 acres of wetlands would be disturbed. However, with implementation of best management practices for each potential or existing project and compliance with permit conditions, disturbances to wetlands are (existing projects) or are anticipated to be (potential projects) minor and temporary, and would result in no more than minimal individual and cumulative adverse environmental effects.

The cumulative impacts to streams (including floodways) associated with the requested open cut/trench crossing methodology would be limited to the aggregate impacts of the Project (and other potential or existing SPLP projects, and other evaluated projects within the CIAA) on waterbodies. As reported in the CIA, implementation of the Project, including the addition of impacts associated with the requested modification for the open cut method, and other potential or existing SPLP projects, and other projects evaluated within the CIAA will result in a cumulative waterbody disturbance of approximately 65,575 linear feet. These disturbances will result in no loss of waters or long-term water-quality and quantity. As documented in the CIA, with the implementation of each potential or existing project in compliance with best management practices and permit conditions, all the disturbances to streams are (existing projects) or are anticipated to be (potential projects) minor and temporary; therefore, no more than minimal and temporary individual and cumulative adverse environmental effects are anticipated.

Module S4: Mitigation Plan

S4.A Avoidance, Minimization and Unavoidable Impacts

The crossing of the aforementioned wetlands and streams (as well as floodways) is unavoidable due to the linear nature of the proposed PPP Project and as described above in S1.B – Water Dependency. SPLP originally proposed an HDD installation of both the 20" and 16" pipe (to north of this reroute) to avoid direct impacts to a wetland/stream complex. However, as described in Project Description (Appendix A of this permit modification request packet), while conducting the permitted Goldfinch and William Penn HDDs for the 20-inch pipeline through this area several inadvertent returns (IRs) occurred and resulted in unpermitted discharges to Waters of the Commonwealth. The HDD profiles were designed to the upper stress limits of the pipe to maximize depth of installation and minimize the likelihood of IR events; however, due to the weakness of the geology above the profile, IRs occurred and despite numerous grouting attempts to seal the IR pathways, repetitive IR events could not be prevented. Therefore, given the geologic conditions at these HDD locations, the HDD evaluation staff cannot assure the Department that the 16-inch HDDs will not have similar problems in this area. Therefore, SPLP has elected to abandon any future HDD attempts to install the 16-inch pipeline through this area and has sought an alternate route of installation agreeable to the landowners and that minimizes impacts to Waters of the Commonwealth.

SPLP evaluated an open cut within the permitted right-of-way and determined that this would result in permanent PFO impacts associated with the conversion of wetland cover type from forested to emergent/scrub-shrub. Subsequently, they evaluated a conventional auger bore under the PFO wetland area and found that the distance was too long for a bore. A Direct Pipe bore was evaluated for passing under the PFO wetland; however, the workspace required for this type of construction method was restricted by the presence of two residential homesites abutting the permanent easement, resulting in a determination that this method was not feasible.

SPLP evaluated other routes around the wetland/stream complex but these are limited due to the roads and residential properties to the north, as well as the increased density of development along William Penn Avenue north of the pipeline crossing. In addition, a route to the north would likely impact more forested wetland areas and require a "greenfield", or new, right-of-way through these areas resulting in more permanent PFO impacts. The proposed route to the south avoids PFO wetlands and minimizes the number of residential and developed areas disturbed during construction. Specifically, the approximate 1 mile reroute to the south of the current permitted pipeline right-of-way will avoid wetlands N26 (PSS/PEM), N25 (PSS), N24 (PFO/PEM), and N20 (PFO), as well as streams S-N42, S-N41, S-N39, and S-N36. The new route will cross 11 wetlands, and nine (9) streams (refer to Attachments C and E for additional information about these resources). An open trench installation method across these resources will result in temporary, short term impacts but will avoid all PFO impacts and eliminate the risk of uncontrolled discharges associated with HDD IRs. All the streams will be crossed via the open cut method with the appropriate dam and pump bypass installed to convey stream flow across the workspace and outlet downstream within the permitted limit-of-disturbance, such that work will be conducted in a dry stream channel. After the stream bypasses are in place, the trench will be excavated, and the 16-inch pipe will be installed via the open trench method through the wetlands and streams in accordance with all permit conditions and requirements. In order to efficiently complete all construction activities and minimize wetland impacts, SPLP is proposing a 50-foot-wide limit

of disturbance (LOD) across the wetlands and added additional temporary workspace near or across from wetlands to further minimize wetland disturbance during construction, if possible. Timber mats and bridges will be placed within the travel lane where the wetland and streams are crossed to avoid soil compaction, allow for trench excavation, topsoil and stream substrate segregation, and stockpiling in adjacent upland areas. Once the pipe and appropriate trench plugs are installed, the trench will be backfilled, and restored to pre-existing elevations, hydrology, and vegetation. All work will be conducted in accordance with permit conditions/requirements as well as the revised/updated Erosion & Sediment and Restoration plan (refer to Attachment D of this permit modification). The reroute will not result in any loss of wetland area or water quality/quantity, and the localized impacts are considered minor and temporary.

In conclusion, given the geologic conditions at the Goldfinch and William Penn HDD locations and IRs that occurred during the 20-inch HDD, the HDD evaluation staff cannot assure that the 16-inch HDDs will not have similar problems in this area. In addition, alternative construction methods including an open cut, conventional bore and Direct Pipe bore of the resources within the currently proposed right-of-way are not considered desirable for feasible due to the permanent PFO impacts, length of the wetland crossing, or workspace required for setup of the boring equipment Therefore, SPLP has elected to abandon installing the 16-inch pipeline through this area and has identified an alternate route south of the currently proposed right-of-way. Analysis of other potential routes to the north would result in potentially more environmental (PFO), residential, and commercial (areas along William Penn Avenue) impacts. Consequently, it is SPLP's professional opinion that an open cut with a dam and pump bypass in place for each stream crossing will have the least impact, as the work area and stream flow will be managed in accordance with all permit conditions (dam and pump) and can completed in the most efficient and timely manner; all PFO wetlands will be avoided and there will be no permanent wetland impacts; and, all wetlands and streams will be restored to their pre-construction condition.

S4.B Repair, Rehab, and Restoration Actions/Proposed Preservation and Maintenance Operations

SPLP will construct the wetland and stream crossings in accordance with the Chapter 102 Permit requirements and will implement erosion and sediment control BMPs and ABACT measures (EV wetland), as required and presented throughout this permit modification request, during all construction and restoration activities. Please refer to *Appendix D* of this permit modification request packet for the updated E&S and Restoration plans specific to the requested partial open cut (open-trench) crossing of wetland, streams, and floodways associated with the Goldfinch Lane/William Penn Avenue Reroute

In addition, SPLP will implement all protective and/or preventative requirements required by the agencies with regard to wild trout resources. Please refer to *Attachment G* of this permit modification request packet for the PNDI Update and Agency Coordination specific to the crossing of wetlands, streams, and floodways associated with the Goldfinch Lane/William Penn Avenue Reroute.

S4.C Compensatory Mitigation

This permit modification request for a construction methodology change to an open cut (open-trench) dry crossing at the wetlands and streams (and associated floodways) would result in minor, short-term, and temporary impacts. No permanent fill of wetland or streams and/or

relocation of these resources would occur. Furthermore, the Project would not result in permanent conversion of wetland cover types that would require compensatory wetland mitigation per PADEP and USACE regulations and policies. Therefore, no compensatory mitigation is required or offered.

S4.D Project Monitoring Plan

Utility Inspection Program & Environmental Compliance Program

All aspects of construction, operation, and maintenance of the PPP Project are supervised by SPLP personnel. Utility or "Craft" inspectors working on behalf of SPLP are staffed throughout all phases of construction to ensure the facilities are constructed and installed in accordance with SPLP, state, local, and federal specifications and standards.

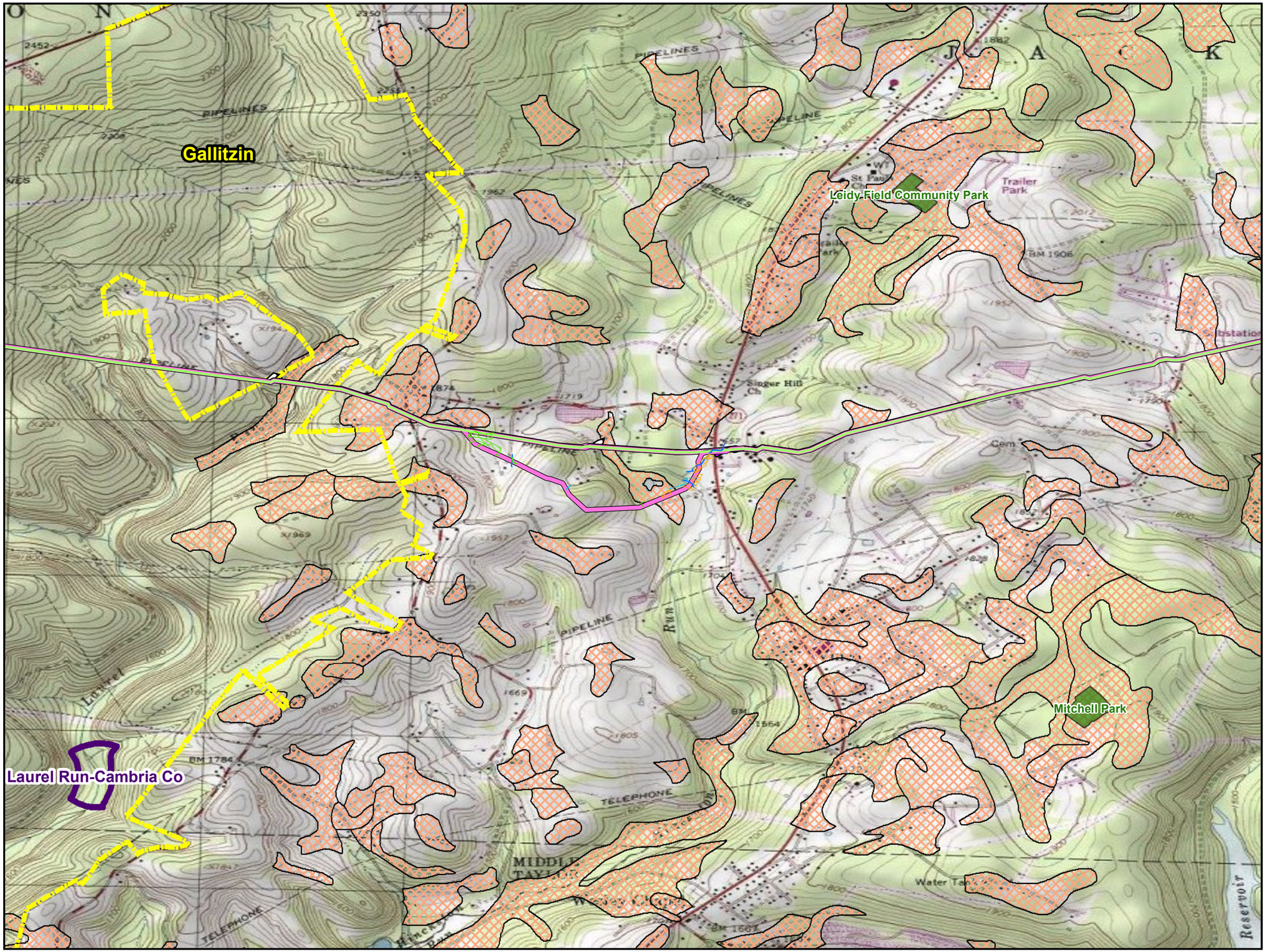
Supplemental to their Utility Inspection Program, SPLP has implemented a comprehensive Environmental Compliance Program (ECP). The ECP encompasses highly integrated and essential program elements designed to ensure compliance with the requirements of the E&S Plan, permit conditions, and approved mitigation measures and conditions. The primary elements of the ECP are environmental training; environmental inspection; biological and cultural resource monitoring/training; and, agency and Project team notification and documentation requirements. Each of these elements is incorporated into the single integrated ECP organization structure and execution plan.

Post-Construction Monitoring

The wetlands and streams (including floodways) will be temporarily impacted and restored to original grade, stabilized, and vegetated in accordance with the E&S Plan (refer to *Appendix D* of this permit modification request packet). Post-construction, the wetland and streams will be monitored in accordance with the Project's Impact Avoidance, Minimization, and Mitigation Procedures provided in Attachment 11, Section E, Part 4 of the PPP Chapter 105 Joint Permit Application (E11-352) as well as all applicable permits and clearances.

Appendix S2.A-1

Location Map



Legend

- Recently Installed PPP 20-inch Pipeline Corridor
- Proposed PPP 16-inch Pipeline Goldfinch Reroute
- Permanent Access
- Temporary Access
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Wildlife Management
- Local Parks
- State Forest
- USDA Soils-Prime Farmlands

Sheet Location

N

0 1,000 2,000

1 inch = 2,000 feet

Pennsylvania Pipeline Project:
Environmental Assessment
Enclosure B - Resource Identification
Sheet 1 of 2

Prepared By: TETRA TECH

Prepared for: Sunoco Logistics

Base Map; ESRI ArcGIS Online
Coordinate System: NAD 83 UTM 17N

Date: 01/2019

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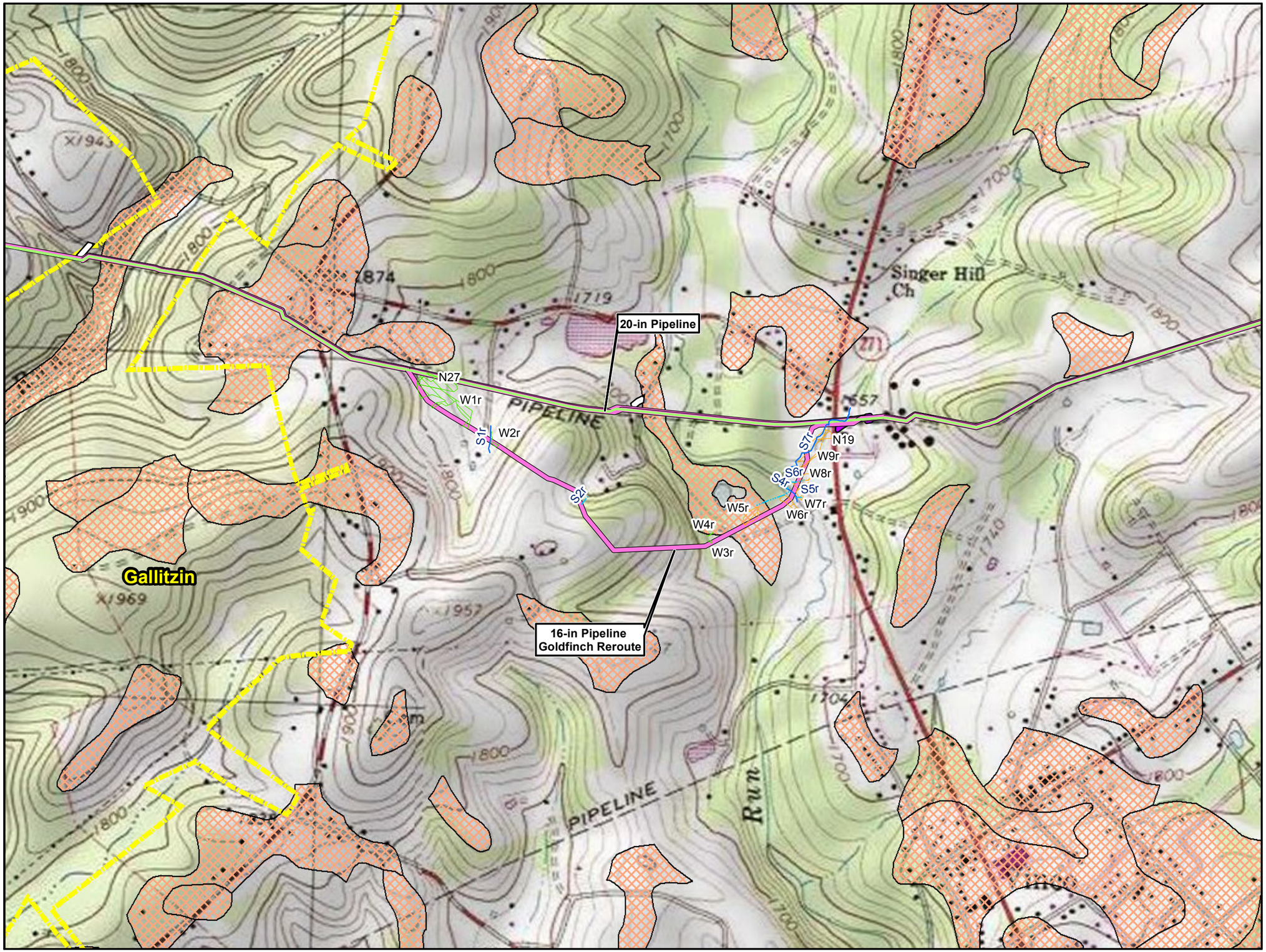

Legend

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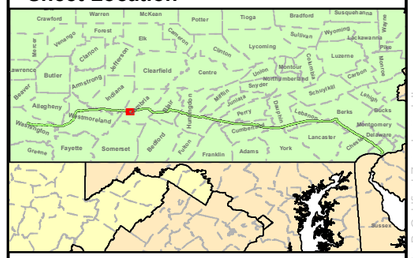
- PSS Wetland
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- State Forest
- USDA Soils-Prime Farmlands

Sheet Location



N

0 450 900 Feet

1 inch = 900 feet

Pennsylvania Pipeline Project:
Environmental Assessment
Enclosure B - Resource Identification
Sheet 2 of 2

Prepared By: TETRA TECH

Prepared for: Sunoco Logistics

Base Map; ESRI ArcGIS Online

Coordinate System: NAD 83 UTM 17N

Date: 01/2019

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Appendix S2.A-2

Supplemental Aquatic Resources Report

(January 2019) and Excerpts from Aquatic Resources

Report (June 2015)

Aquatic Resource Report
for the
Pennsylvania Pipeline Project, Southwest Region
Westmoreland, Indiana, and Cambria Counties
Pennsylvania

Prepared By:

Tetra Tech, Inc. For
Sunoco Pipeline, LP
525 Fritztown Road
Sinking Spring, PA

NOTE: This Aquatic Resources Report excerpts information relevant to the major permit modification for the Goldfinch Lane/WIlliam Penn Avenue Reroute and previously submitted information by Sunoco Pipeline, LP as part of the approved PPP Chapter 105 Joint Permit (E50-258. APS 879354)]

June 2015

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3.0 RESULTS **3-1**
3.1 WETLAND IDENTIFICATION AND DELINEATION
3.2 STREAM IDENTIFICATION AND EVALUATION

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2 MAPPED HYDRIC SOILS IN STUDY AREA
3 MAPPED NWI AND CORRESPONDING DELINEATED WETLANDS

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2-WASH, 2-1 to 2-12 NRCS SOILS MAP

3-WASH, 3-1 to 3-12 NATIONAL WETLAND INVENTORY MAP

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B WETLAND PHOTOGRAPHS
C STREAM DATA SHEETS
D STREAM PHOTOGRAPHS
E HYDRIC SOILS LIST
F RESUMES

ACRONYMS

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

1.0 INTRODUCTION

This Wetland Delineation and Stream Identification Report for the Southwest Region Pennsylvania Pipeline Project (Project) has been prepared by Tetra Tech, Inc. on behalf of Sunoco Pipeline, LP (SPLP). Wetland areas were delineated on site using methodology enumerated in the United States Army Corps of Engineers (USACE) Wetland Delineation Manual (Environmental Laboratory, 1987) (1987 Manual), as amended by the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, April 2012 (Corps Regional Supplement).

The subject of this report is a wetland delineation and stream identification field investigation for a proposed natural gas pipeline right-of-way (ROW), associated access roads, and workspaces located across southern Pennsylvania.

The Project study area drains to Beaver Run and its unnamed tributaries (UNT), Findley Run and its UNTs, Laurel Run and its UNTs, Porters Run and its UNTs, Saltlick Run and its UNTs, Spruce Run and its UNTs, Stewart Run and its UNTs, UNTs to Noels Creek, and UNTs to North Branch Little Conemaugh River which are listed as High Quality Cold Water Fishes (HQ-CWF), as designated in Chapter 93 of Title 25 of the PA Code. The study area drains to Boatyard Run and its UNTs, Burgoon Run and its UNTs, Hinchston Run and its UNTs, Little Conemaugh River and its UNTs, Roaring Run and its UNTs, Tom's Run and its UNTs, and unnamed tributaries of Bear Rock Run, UNTs to Blair Run, UNTs to Conemaugh River, UNTs to Hedges Lakes, UNTs to Howells Run, and UNTs to Weirds Run which are all listed as Cold Water Fished (CWF), as designated in Chapter 93 of Title 25 of the PA Code. The study area drains to Blacklick Creek and its UNTs and UNTs to Turtle Creek which are listed as Trout Stocking (TSF), as designated in Chapter 93 of Title 25 of the PA Code. The study area drains to UNTs to Lower Loyalhanna Creek, and Loyalhanna Creek and its UNTs which are listed as Warm Water Fished (WWF), as designated in Chapter 93 of Title 25 of the PA Code. Additionally, the study area drains to Serviceberry Run which is listed as a High Quality Warm Water Fishes (HQ-WWF), as designated in Chapter 93 of Title 25 of the PA Code.

The content of this report presents the methodology, results, and conclusions of wetland delineation and stream identification activities completed for the proposed Project.

2.0 METHODOLOGY

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

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

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

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

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

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

Facultative Upland (FACU) - usually occurs in non-wetlands; estimated probability 1%-33%

Upland (UPL) - essentially always found in non-wetlands; estimated probability >99%

The field investigations for the proposed pipeline Project were performed during numerous field visits from November 2013 through June 2015. The study area was preliminarily limited to a 200-foot wide corridor along a proposed center line. Once the proposed pipeline ROW, access roads, and workspaces were finalized any additional areas that extended beyond the preliminary study area were investigated for potential wetlands and streams. The final study area is illustrated on the project mapping. Preliminary site reconnaissance of the study area was conducted through a

review of available Geographic Information Systems (GIS) resources. Existing information reviewed included the following:

- USGS topographic mapping (Figures 1-WASH and 1-1 to 1-12)
- Natural Resources Conservation Service (NRCS) National Cooperative Soil Survey (Figures 2-WASH and 2-1 to 2-12)
- United States Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) Mapping (Figures 3-WASH and 3-1 to 3-12)

The delineation consisted of establishment of the wetland/upland margin with flagging hung at intervals that accurately depicted the outline of the boundary. The individual flags were then located using a Global Positioning System (GPS) receiver and later added to the project area mapping. Wetland flagging was limited to the bounds of the investigated study area and wetlands are shown as closed or partially closed systems on the detail map (4-WASH, 4-DEL, and Figure 4-1 to 4-111).

Data concerning soils, hydrology, and vegetation were collected and recorded on USACE Wetland Delineation Data Forms at wetlands and upland point locations associated with wetlands, which are provided in Appendix A. Photographs depicting wetland topography and vegetation are included in Appendix B. Stream data sheets detailing stream characteristics are provided in Appendix C. Appendix D contains photographs of streams located within the study area. Appendix E provides a list of hydric soils known to occur within the counties of the study area. Resumes of project personnel are included in Appendix F.

3.0 RESULTS

The field investigations identified 295 areas within the proposed Southwest Region of the Pennsylvania Pipeline Project study area that met the wetland criteria outlined in the 1987 Manual, as amended by the Corps Regional Supplement. Additionally, 360 streams were identified within the Project study area. A narrative summary of field data collected for these systems is presented in this section and a tabular summary is presented on Table 1. The detail maps provided as Figures 4-WASH, 4-DEL, and 4-1 to 4-111 illustrate the wetland and watercourse locations in relation to the study area.

3.1 WETLAND IDENTIFICATION AND DELINEATION

Hydric soils and soils with hydric components are often associated with wetlands. A review of the NRCS Soil Survey and hydric soil list (Appendix E) indicated that there are sixty-two soils mapped within the study area classified as hydric or containing hydric components. These soils can be found in Table 2, Mapped Hydric Soils in Study Area. The NRCS soil survey maps are included as Figures 2-WASH and 2-1 to 2-12. Confirmation of the soil mapping units was not performed during this site evaluation.

NWI mapped wetlands and corresponding field delineated wetlands for the Project are listed in Table 3.

Based on field evidence and best professional judgment, it was determined that 295 wetlands are present within the study area. The areas demonstrated the presence of all three wetland parameters required by the 1987 Manual and the Regional Supplement. The vegetative community was dominated by hydrophytic plant species or had a prevalence index ≤ 3, the soils exhibits hydric characteristics, and the areas contains wetland hydrology indicators.

USACE wetland determination data forms that detail the existing vegetation, soil characteristics, and hydrology were prepared for each wetland and its associated upland point (Appendix A).

<u>Houston Injection Site</u>

Wetland Q67

Wetland Q67 (W-Q67) is a 1,449-square foot (SF) palustrine emergent (PEM) wetland (Figure 4-WASH). Indicators of wetland hydrology include surface soil cracks, saturation visible on aerial imagery, and geomorphic position. Dominant vegetation consists of pinkweed (*Persicaria pensylvanica*) and spotted lady's-thumb (*Persicaria maculosa*). The soil between 0 and 3 inches

exhibits a low-chroma matrix (7.5YR 4/1) with a silt loam texture that contains redoximorphic features (10YR 5/6).

Wetland 136

Wetland 136 (W-136) is a 2,001-SF PEM wetland (Figure 4-65). Indicators of wetland hydrology include a high water table, saturation within the upper 12 inches of the soil profile, hydrogen sulfide odor, and shallow aquitard. Dominant vegetation consists of cottongrass bulrush (*Scirpus cyperinus*), dark-green bulrush (*Scirpus atrovirens*), and sensitive fern (*Onoclea sensibilis*). The soil between 0 and 2 inches exhibits a chroma matrix (7.5YR 2.5/1) with a silt loam texture. The soil between 2 and 6 inches exhibits a low-chroma matrix (7.5YR 4/1) with a sandy loam texture that contains redoximorphic features (10YR 5/6).

Cambria County

Wetland 137

Wetland 137 (W-137) is a 655-SF PEM wetland (Figure 4-65). Indicators of wetland hydrology include a high water table, saturation within the upper 12 inches of the soil profile, hydrogen sulfide odor, geomorphic position, and shallow aquitard. Dominant vegetation consists of cottongrass bulrush (*Scirpus cyperinus*), dark-green bulrush (*Scirpus atrovirens*), and Japanese stilt grass (*Microstegium vimineum*). The soil between 0 and 3 inches exhibits a chroma matrix (7.5YR 2.5/1) with a silt loam texture. The soil between 3 and 6 inches exhibits a low-chroma matrix (7.5YR 4/1) with a sandy loam texture that contains redoximorphic features (10YR 5/6).

Wetland 138

Wetland 138 (W-138) is a 1,096-SF PEM wetland (Figure 4-66). Indicators of wetland hydrology include a high water table, saturation within the upper 12 inches of the soil profile, hydrogen sulfide odor, and geomorphic position. Dominant vegetation consists of sensitive fern (*Onoclea sensibilis*). The soil between 0 and 3 inches exhibits a chroma matrix (10YR 3/1) with a silt loam texture. The soil between 3 and 6 inches exhibits a low-chroma matrix (10YR 3/2) with a sandy loam texture that contains redoximorphic features (10YR 5/8).

Wetland 139

Wetland 139 (W-139) is a 681-SF PEM wetland (Figure 4-66). Indicators of wetland hydrology include a high water table, saturation within the upper 12 inches of the soil profile, hydrogen sulfide odor, and shallow aquitard. Dominant vegetation consists of sensitive fern (*Onoclea sensibilis*) and Japanese stilt grass (*Microstegium vimineum*). The soil between 0 and 2 inches exhibits a chroma

Wetland N20 PEM

Wetland N20 PEM (W-N20 PEM) is a PEM wetland greater than 37,451-SF (Figure 4-74). Indicators of wetland hydrology include surface water, a high water table, saturation within the upper 12 inches of the soil profile, oxidized rhizospheres on living roots, and a positive FAC-neutral test. Dominant vegetation consists of black elder (*Sambucus nigra*), common spike-rush (*Eleocharis palustris*), dark-green bulrush (*Scirpus atrovirens*), lamp rush (*Juncus effusus*), broom-sedge (*Andropogon virginicus*), spotted touch-me-not (*Impatiens capensis*), New York ironweed (*Vernonia noveboracensis*), and arrow-leaf tearthumb (*Persicaria sagittata*). The soil between 0 and 2 inches exhibits a low-chroma matrix (10YR 3/1) with a mucky texture. The soil between 2 and 12 inches exhibits a low-chroma matrix (2.5Y 5/2) with a silty clay loam texture that contains redoximorphic features (7.5YR 5/8).

Wetland N19

Wetland N19 (W-N19) is a PSS wetland greater than 8,191-SF (Figure 4-74). Indicators of wetland hydrology include a high water table, saturation within the upper 12 inches of the soil profile, oxidized rhizospheres on living roots, geomorphic position, and a positive FAC-neutral test. Dominant vegetation consists of black willow (*Salix nigra*), sticky-willy (*Galium aparine*), and tall goldenrod (*Solidago altissima*). The soil between 0 and 4 inches exhibits a low-chroma matrix (10YR 4/2) with a silty loam texture. The soil between 4 and 12 inches exhibits a low-chroma matrix (10YR 4/2) with a sandy, silty loam texture that contains redoximorphic features (10YR 6/8).

Wetland O35

Wetland O35 (W-O35) is an 856-SF PSS wetland (Figure 4-74). Indicators of wetland hydrology include surface water, a high water table, saturation within the upper 12 inches of the soil profile, water-stained leaves, and a positive FAC-neutral test. Dominant vegetation consists of black willow (*Salix nigra*), broad-leaf cat-tail (*Typha latifolia*), an unidentified touch-me-not (*Impatiens* sp.), and wrinkle-leaf goldenrod (*Solidago rugosa*). The soil between 0 and 12 inches exhibits a low-chroma matrix (10YR 4/1) with a silt loam texture that contains redoximorphic features (7.5YR 4/6).

Wetland O34

Wetland O34 (W-O34) is a 3,197-SF PEM wetland (Figure 4-74). Indicators of wetland hydrology include surface water, a high water table, saturation within the upper 12 inches of the soil profile, water-stained leaves, and a positive FAC-neutral test. Dominant vegetation consists of broad-leaf cat-tail (*Typha latifolia*) and lamp rush (*Juncus effusus*). The soil between 0 and 8 inches exhibits a low-chroma matrix (10YR 4/2) with a gravelly clay loam texture that contains redoximorphic features (7.5YR 4/6).

neutral test. Dominant vegetation consists of fowl manna grass (*Glyceria striata*), an unidentified touch-me-not (*Impatiens* sp.), and fringed sedge (*Carex crinita*). The soil between 0 and 8 inches exhibits a low-chroma matrix (10YR 3/1) with a gravelly, silt loam texture that contains redoximorphic features (7.5YR 5/6).

Wetland BB111

Wetland BB111 (W-BB111) is a 1,537-SF PEM wetland (Figure 4-111). Indicators of wetland hydrology include a surface water, a high water table, saturation within the upper 12 inches of the soil profile, and oxidized rhizospheres on living roots. Dominant vegetation consists of an unidentified rush (*Scirpus* sp.), interrupted fern (*Osmunda claytonia*), and an unidentified blue grass (*Poa* sp.). The soil between 0 and 16 inches exhibits a low-chroma matrix (10YR 3/1) with a silty clay loam texture that contains redoximorphic features (10YR 4/6).

Wetland Q51

Wetland Q51 (W-Q51) is a 966-SF PEM wetland (Figure 4-111). Indicators of wetland hydrology include hydrogen sulfide odor, drainage patterns, geomorphic position, and a positive FAC-neutral test. Dominant vegetation consists of an unidentified goldenrod (*Solidago* sp.), sensitive fern (*Onoclea sensibilis*), and an unidentified touch-me-not (*Impatiens* sp.). The soil between 0 and 10 inches exhibits a low-chroma matrix (10YR 4/2, 2.5YR 5/6, and 2.5Y 2.5/1) with a gravelly, sandy clay loam texture that contains redoximorphic features (7.5YR 6/8).

Wetland Q65

Wetland Q65 (W-Q65) is a -SF PEM wetland (Figure 4-111). Indicators of wetland hydrology include surface water, a high water table, saturation within the upper 12 inches of the soil profile, water-stained leaves, a sparsely vegetated concave surface, dreainage patterns, a shallow aquitard, and a positive FAC-neutral test. Dominant vegetation consists of fringed sedge (*Carex crinita*) and rough-stalk blue grass (*Poa trivialis*). The soil between 0 and 4 inches exhibits a low-chroma matrix (10YR 3/1) with a clay loam texture that contains redoximorphic features (10YR 6/8). The soil between 4 and 16 inches exhibits a low-chroma matrix (10YR 5/1) with a clay loam texture that contains redoximorphic features (10YR 5/8).

3.2 STREAM IDENTIFICATION AND EVALUATION

Based on field evidence and best professional judgment, it was determined that 360 streams were identified within the evaluated study area. A data sheet that details the bank and channel characteristics, substrate composition, aquatic habitat, and hydrology was prepared for each of the streams (Appendix C).

cobble, gravel, sand, and organic substrate. At the time of the field investigation, the stream exhibited an average water depth of 3 inches.

Stream O72

Stream O72 (S-O72) is Findley Run, a perennial tributary to the Conemaugh River (Figure 4-64). The stream bank is approximately 22 feet in width. The bank height is 3 feet. The stream bed contains a boulder, cobble, gravel, sand, silt, and organic substrate. At the time of the field investigation, the stream exhibited an average water depth of 8 inches.

Stream O75

Stream O75 (S-O75) is an intermittent tributary to Findley Run (Figure 4-65). The stream bank is approximately 3 feet in width. The bank height is 6 inches. The stream bed contains a boulder, cobble, gravel, sand, and organic substrate. At the time of the field investigation, the stream exhibited an average water depth of 0.25 inches.

Stream O73

Stream O73 (S-O73) is an intermittent tributary to Findley Run (Figure 4-65). The stream bank is approximately 6 feet in width. The bank height is 6 inches. The stream bed contains a boulder, cobble, gravel, sand, and organic substrate. At the time of the field investigation, the stream exhibited an average water depth of 2 inches.

Stream O74

Stream O74 (S-O74) is an intermittent tributary to Findley Run (Figure 4-65). The stream bank is approximately 5 feet in width. The bank height is 1 foot. The stream bed contains a boulder, cobble, gravel, sand, and organic substrate. At the time of the field investigation, the stream exhibited an average water depth of 2 inches.

Cambria County

Stream N64

Stream N64 (S-N64) is a perennial tributary to Findley Run (Figure 4-66). The stream bank is approximately 5 feet in width. The bank height is 5 inches. The stream bed contains a boulder, cobble, gravel, sand, and silt substrate. At the time of the field investigation, the stream exhibited an average water depth of 3 inches.

Stream N63

Stream N63 (S-N63) is a perennial tributary to Findley Run (Figure 4-66). The stream bank is

The stream bank is approximately 17 feet in width. The bank height is 10 inches. The stream bed contains a boulder, cobble, gravel, and sand substrate. At the time of the field investigation the stream exhibited an average water depth of 10 inches..

Stream N37

Stream N37 (S-N37) is a perennial tributary to Hinckston Run (Figure 4-77). The stream bank is approximately 4 feet in width. The bank height is 5 inches. The stream bed contains a boulder, cobble, gravel, sand, silt, and clay substrate. At the time of the field investigation the stream exhibited an average water depth of 2 inches.

Stream N36

Stream N36 (S-N36) is a perennial tributary to Hinckston Run (Figure 4-74). The stream bank is approximately 3 feet in width. The bank height is 1 foot. The stream bed contains a cobble, gravel, silt, and clay substrate. At the time of the field investigation the stream exhibited an average water depth of 4 inches.

Stream N35

Stream N35 (S-N35) is an intermittent tributary to Hinckston Run (Figure 4-74). The stream bank is approximately 2 feet in width. The bank height is 2 feet. The stream bed contains a boulder, cobble, gravel, sand, silt, and clay substrate. At the time of the field investigation the stream exhibited an average water depth of 3 inches.

Stream O44

Stream O44 (S-O44) is a perennial tributary to Hinckston Run (Figure 4-74). The stream bank is approximately 5 feet in width. The bank height is 2 feet. The stream bed contains a boulder, cobble, gravel, sand, silt, and organic substrate. At the time of the field investigation, the stream exhibited an average water depth of 10 inches.

Stream O43

Stream O43 (S-O43) is an intermittent tributary to Hinckston Run (Figure 4-74). The stream bank is approximately 1 foot in width. The bank height is 5 inches. The stream bed contains a cobble, gravel, sand, silt, and organic substrate. At the time of the field investigation, the stream exhibited an average water depth of 1 inch.

Stream O42

Stream O42 (S-O42) is an ephemeral tributary to Hinckston Run (Figure 4-75). The stream bank is approximately 2 feet in width. The bank height is 2 inches. The stream bed contains a gravel,

Stream L93

Stream L93 (S-L93) is an ephemeral tributary to Blair Run (Figure 4-109). The stream bank is approximately 4 feet in width. The bank height is 4 inches. The stream bed contains a boulder, cobble, gravel, sand, and silt substrate. The stream exhibited no flow at the time of the field investigations.

Stream L94

Stream L94 (S-L94) is an intermittent tributary to Blair Run (Figure 4-111). The stream bank is approximately 8 feet in width. The bank height is 5 inches. The stream bed contains a boulder, cobble, gravel, sand, and silt substrate. At the time of the field investigation, the stream exhibited an average water depth of 3 inches.

Stream Q71

Stream Q71 (S-Q71) is an intermittent tributary to Blair Run (Figure 4-111). The stream bank is approximately 5 feet in width. The bank height is 1 foot. The stream bed contains a boulder, cobble, gravel, sand, silt, and clay substrate. At the time of the field investigation, the stream exhibited an average water depth of 1 inch.

4.0 CONCLUSIONS

During the field investigations of the Southwest Region of the proposed Pennsylvania Pipeline Project, Pennsylvania Section, 295 areas were identified within the evaluated study area which exhibited all three criteria necessary to be classified as a jurisdictional wetland in accordance with the 1987 Manual and the Regional Supplement:

- The area had a vegetative community that contained a predominance (greater than 50% aerial coverage) of hydrophytic plant species.
- Hydric soil conditions present were present at the locations.
- There were indicators of wetland hydrology at the locations

Additionally, 360 streams were identified within the evaluated study area.

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TABLES

Table 1
Wetland and Stream Summary
Pennsylvania Pipeline Project

Water Resource	Dominant Plant Community/Flow Regime	Bank Full Width (ft.)	Water Depth (in.)	Channel Depth (in.)	Wetland Size (Square Feet)	Wetland Size (Acres)	Associated Water Resource
Wetlands							
W-Q67	PEM	-	-	-	1,449	0.03	N/A
W-Q66	PEM	-	-	-	1,828	0.04	N/A
W-Q68	PEM	-	-	-	513	0.01	N/A
W-DS3	PEM	-	-	-	287	0.01	S-DS1
W-DS2	PEM	-	-	-	405	0.01	S-DS1
W-DS1	PEM	-	-	-	2,422	0.06	S-DS1
W-DS4	PEM	-	-	-	4,474	0.10	N/A
W-P25	PFO	-	-	-	19,425	0.45	S-P41, S-P42
W-P25	PEM	-	-	-	11,854	0.27	S-P41, S-P42
W-P28	PEM	-	-	-	33,335	0.77	S-P43, S-P44
W-P29	PEM	-	-	-	4,311	0.10	S-P45, S-P44
W-P30	PEM	-	-	-	1,249	0.03	N/A
W-P31	PEM	-	-	-	13,353	0.31	S-P48, S-P47
W-P32	PFO (1)	-	-	-	11,270	0.26	N/A
W-P32	PFO (2)	-	-	-	11,897	0.27	N/A
W-P33	PEM	-	-	-	19,369	0.44	S-P49, S-P50
W-P33	PFO	-	-	-	3,789	0.09	S-P49, S-P50
W-P35	PEM	-	-	-	359	0.01	S-P51, S-P50
W-P34	PEM	-	-	-	188	0.00	N/A
W-Q7	PEM	-	-	-	1,443	0.03	S-Q7, S-Q8, S-Q9
W-Q8	PSS	-	-	-	9,862	0.23	S-Q8, S-Q9
W-Q6	PEM	-	-	-	7,972	0.18	S-Q6, S-Q5
W-Q6	PFO (1)	-	-	-	2,940	0.07	S-Q6, S-Q5
W-Q6	PFO (2)	-	-	-	11,438	0.26	S-Q6, S-Q5
W-Q6	PFO (3)	-	-	-	1,211	0.03	S-Q6, S-Q5
W-Q5	PFO	-	-	-	1,040	0.02	S-Q6
W-Q4	PEM	-	-	-	4,034	0.09	S-Q4
W-M78	PEM	-	-	-	10,130	0.23	S-M106, S-M105
W-M77	PEM	-	-	-	847	0.02	N/A
W-BB80	PSS	-	-	-	7,071	0.16	S-BB60
W-BB80	PEM	-	-	-	2,650	0.06	S-BB60
W-M76	PEM	-	-	-	1,504	0.03	N/A
W-M75	PFO	-	-	-	7,451	0.17	S-M102
W-M75	PEM	-	-	-	29,072	0.67	S-M102
W-M74	PFO	-	-	-	24,075	0.55	S-P36
W-P26	PEM (1)	-	-	-	29,607	0.68	S-P36
W-P26	PEM (2)	-	-	-	29,607	0.68	S-P36
W-P27	PEM (1)	-	-	-	34,850	0.80	S-P36
W-P27	PEM (2)	-	-	-	34,850	0.80	S-P36
W-M73	PEM	-	-	-	6,943	0.16	N/A
W-M72	PEM	-	-	-	6,578	0.15	N/A

* = See Data Sheet for Channel Depth

Table 1
Wetland and Stream Summary
Pennsylvania Pipeline Project

Water Resource	Dominant Plant Community/Flow Regime	Bank Full Width (ft.)	Water Depth (in.)	Channel Depth (in.)	Wetland Size (Square Feet)	Wetland Size (Acres)	Associated Water Resource
W-O60	PEM	-	-	-	5,700	0.13	S-O87, S-O88
W-O61	PEM	-	-	-	317	0.01	S-O91
W-O62	PEM	-	-	-	456	0.01	S-O92
W-O63	PEM	-	-	-	1,103	0.03	S-O94
W-O64	PEM	-	-	-	779	0.02	S-O95
W-O66	PEM	-	-	-	2,952	0.07	S-O94, S-O96
W-O65	PEM	-	-	-	2,731	0.06	S-O94, S-O97
W-N43	PEM	-	-	-	1,223	0.03	S-N76
W-N42	PEM	-	-	-	1,382	0.03	S-N76
W-N40	PEM	-	-	-	4,108	0.09	S-N75
W-N41	PEM	-	-	-	1,632	0.04	S-N75
W-N39	PEM	-	-	-	1,226	0.03	S-N73
W-N38	PEM	-	-	-	1,921	0.04	S-N71
W-N38	PSS	-	-	-	1,260	0.03	S-N71
W-N37	PEM	-	-	-	2,076	0.05	S-N69
W-N36	PSS	-	-	-	4,416	0.10	N/A
W-N34	PFO (1)	-	-	-	19,816	0.45	S-N66
W-N34	PEM	-	-	-	2,895	0.07	S-N66
W-N34	PFO (2)	-	-	-	12,798	0.29	S-N66
W-N35	PSS	-	-	-	5,443	0.12	N/A
W-O55	PEM	-	-	-	23,761	0.55	S-O78
W-O51	PEM	-	-	-	3,162	0.07	S-O66
W-O50	PEM	-	-	-	722	0.02	S-O66, S-O68
W-O48	PEM (1)	-	-	-	23,046	0.53	S-O66
W-O48	PEM (2)	-	-	-	23,046	0.53	S-O66
W-O47	PEM	-	-	-	460	0.01	S-O64
W-O46	PFO	-	-	-	2,238	0.05	S-O64
W-O52	PEM	-	-	-	411	0.01	S-O70
W-134	PEM	-	-	-	1,731	0.04	S-O69
W-O53	PFO	-	-	-	2,869	0.07	S-O69
W-O54	PFO	-	-	-	961	0.02	S-O72
W-135	PEM	-	-	-	1,398	0.03	S-O72
W-136	PEM	-	-	-	2,001	0.05	S-O73, S-O75
Cambria County							
W-137	PEM	-	-	-	655	0.02	S-O74
W-138	PEM	-	-	-	1,096	0.03	S-N64
W-139	PEM	-	-	-	681	0.02	S-N63
W-140	PEM	-	-	-	2,111	0.05	S-N62
W-N33	PEM	-	-	-	24,674	0.57	S-N53, S-N54
W-N32	PEM	-	-	-	1,458	0.03	N/A
W-N31	PEM	-	-	-	2,330	0.05	S-N51, S-N52
W-N30	PEM	-	-	-	1,484	0.03	S-N51, S-N52

* = See Data Sheet for Channel Depth

Table 1
Wetland and Stream Summary
Pennsylvania Pipeline Project

Water Resource	Dominant Plant Community/Flow Regime	Bank Full Width (ft.)	Water Depth (in.)	Channel Depth (in.)	Wetland Size (Square Feet)	Wetland Size (Acres)	Associated Water Resource
W-N29	PFO	-	-	-	6,890	0.16	S-N45
W-Q44	PEM	-	-	-	211	0.00	S-N46, S-Q56
W-N27	PEM	-	-	-	33,511	0.77	N/A
W-N26	PSS	-	-	-	26,303	0.60	S-N42
W-N26	PEM	-	-	-	11,014	0.25	S-N42
W-N25	PSS	-	-	-	9,267	0.21	S-N41
W-N24	PEM	-	-	-	22,099	0.51	S-N39, S-N40
W-N24	PFO (1)	-	-	-	16,112	0.37	S-N39
W-N24	PFO (2)	-	-	-	18,262	0.42	S-N39
W-N22	PFO	-	-	-	7,543	0.17	S-N38
W-N21	PSS	-	-	-	2,540	0.06	N/A
W-N20	PFO (1)	-	-	-	48,638	1.12	S-N37, S-N36
W-N20	PFO (2)	-	-	-	46,515	1.07	S-N36
W-N20	PEM	-	-	-	37,451	0.86	S-N36
W-N19	PSS	-	-	-	8,191	0.19	S-O44
W-O35	PSS	-	-	-	856	0.02	S-O44
W-O34	PEM	-	-	-	3,197	0.07	N/A
W-O33	PSS	-	-	-	7,523	0.17	N/A
W-O32	PSS	-	-	-	2,094	0.05	N/A
W-O31	PEM	-	-	-	5,868	0.13	N/A
W-O30	PEM	-	-	-	477	0.01	N/A
W-O28	PEM	-	-	-	3,425	0.08	S-O42, S-O40
W-O29	PEM	-	-	-	390	0.01	N/A
W-O27	PEM	-	-	-	11,155	0.26	S-O40
W-O26	PEM	-	-	-	3,074	0.07	S-O40, S-O41
W-O25	PEM	-	-	-	21,261	0.49	S-O41
W-O24	PEM	-	-	-	2,154	0.05	N/A
W-O23	PEM	-	-	-	12,801	0.29	S-O38, S-O39
W-O22	PEM	-	-	-	506	0.01	N/A
W-O21	PEM	-	-	-	26,906	0.62	N/A
W-O20	PSS (1)	-	-	-	3,138	0.07	S-O37
W-O20	PEM	-	-	-	2,810	0.06	S-O37
W-O20	PSS (2)	-	-	-	1,051	0.02	S-O37
W-O44	PEM	-	-	-	1,791	0.04	N/A
W-O43	PEM	-	-	-	4,042	0.09	S-O60
W-O42	PEM	-	-	-	14,841	0.34	S-O56
W-O41	PEM	-	-	-	7,955	0.18	S-O55
W-O40	PEM	-	-	-	797	0.02	N/A
W-O39	PEM	-	-	-	2,214	0.05	S-O52, S-O50
W-O38	PEM	-	-	-	1,038	0.02	S-O49
W-O37	PEM	-	-	-	2,258	0.05	S-O45
W-O37	PFO	-	-	-	2,439	0.06	S-O45

* = See Data Sheet for Channel Depth

Table 1
Wetland and Stream Summary
Pennsylvania Pipeline Project

Water Resource	Dominant Plant Community/Flow Regime	Bank Full Width (ft.)	Water Depth (in.)	Channel Depth (in.)	Wetland Size (Square Feet)	Wetland Size (Acres)	Associated Water Resource
W-L63	PEM	-	-	-	19,504	0.45	S-M82, S-L91
W-L63	PFO				3,220	0.07	N/A
W-M59	PEM (1)	-	-	-	108,629	2.49	S-M81
W-M59	PFO (1)	-	-	-	19,686	0.45	S-M81
W-M59	PFO (2)	-	-	-	42,105	0.97	S-M81
W-M59	PFO (3)	-	-	-	5,858	0.13	S-M81
W-M59	PSS	-	-	-	35,962	0.83	S-M81
W-M59	PEM (2)	-	-	-	6,008	0.14	N/A
W-M59	PFO (4)	-	-	-	4,160	0.10	N/A
W-M59	PFO (5)	-	-	-	74,914	1.72	S-M81
W-M59	PFO (6)	-	-	-	1,037	0.02	S-M81
W-L62	PEM	-	-	-	4,159	0.10	N/A
W-L62	PFO	-	-	-	3,553	0.08	N/A
W-L67	PEM	-	-	-	1,491	0.03	N/A
W-L68	PFO (1)	-	-	-	76,576	1.76	S-L93
W-L68	PSS	-	-	-	900	0.02	S-L93
W-L68	PFO (2)	-	-	-	900	0.02	S-L93
W-L68	PEM	-	-	-	8,976	0.21	S-L93
W-L69	PEM	-	-	-	969	0.02	S-L94
W-Q50	PEM	-	-	-	446	0.01	N/A
W-Q49	PEM	-	-	-	1,760	0.04	N/A
W-Q48	PEM	-	-	-	266	0.01	N/A
W-BB111	PEM	-	-	-	1,537	0.04	S-L94
W-Q51	PEM	-	-	-	966	0.02	N/A
W-Q65	PEM	-	-	-	476	0.01	N/A
Streams							
S-DS1	Ephemeral	1.0	0.0"	*	-	-	W-DS1, W-DS2, W-DS3
S-DS2	Ephemeral	2.0	0.3"	0.5"	-	-	N/A
S-DS3	Ephemeral	2.0	0.3"	0.5"	-	-	N/A
S-DS4	Perennial	3.0	8.0"	2.0'	-	-	N/A
S-P41	Intermittent	3.0	2.0"	4.0"	-	-	W-P25, S-P42
S-P42	Intermittent	1.0	1.0"	4.0"	-	-	W-P25, S-P41
S-P43	Intermittent	2.0	2.00"	18.0"	-	-	W-P28, S-P44
S-P44	Perennial	6.0	5.0"	24.0"	-	-	W-P28,W-P29,S-P43
S-P45	Intermittent	3.0	3.0"	24.0"	-	-	W-P29, S-P44
S-P46	Ephemeral	2.0	0.0"	12.0"	-	-	N/A
S-P47	Intermittent	4.0	1.0"	12.0"	-	-	W-P31
S-P49	Intermittent	2.0	1.0"	3.0"	-	-	W-P33, S-P50
S-P50	Perennial	7.0	5.0"	12.0"	-	-	W-P33, S-P49
S-P51	Perennial	40.0	1.0'	2.0'	-	-	N/A
S-Q7	Perennial	20.0	8.0"	24.0"	-	-	W-Q7, S-Q8
S-Q9	Ephemeral	2.0	0.0"	4.0"	-	-	W-Q7, W-Q8

* = See Data Sheet for Channel Depth

Table 1
Wetland and Stream Summary
Pennsylvania Pipeline Project

Water Resource	Dominant Plant Community/Flow Regime	Bank Full Width (ft.)	Water Depth (in.)	Channel Depth (in.)	Wetland Size (Square Feet)	Wetland Size (Acres)	Associated Water Resource
S-O68	Intermittent	5.0	2.0"	1.0'	-	-	W-O50, S-O66
S-O67	Intermittent	5.0	2.0"	1.0'	-	-	W-O48, W-O50, S-O66
S-O64	Intermittent	8.0	2.0"	1.0'	-	-	W-O46, W-O47, S-O63
S-O65	Ephemeral	3.0	0.0"	1.0'	-	-	S-O64
S-O63	Ephemeral	2.0	0.0"	4.0"	-	-	S-O64
S-O70	Ephemeral	4.0	0.0"	1.0'	-	-	W-O52, S-O69
S-O69	Perennial	6.0	3.0"	1.0'	-	-	W-O53, W-134, S-O70
S-O72	Perennial	22.0	8.0"	3.0'	-	-	W-135
S-O75	Intermittent	3.0	0.25"	6.0"	-	-	W-136
S-O73	Intermittent	6.0	2.0"	6.0"	-	-	N/A
S-O74	Intermittent	5.0	2.0"	1.0'	-	-	W-137
Cambria County							
S-N64	Perennial	5.0	3.0"	5.0"	-	-	W-138
S-N63	Perennial	5.0	2.0"	4.0"	-	-	W-139
S-N62	Intermittent	3.0	1.0"	1.0"	-	-	W-140
S-BB61	Perennial	11.0	2.0"	4.5'	-	-	N/A
S-N61	Ephemeral	5.0	0.0"	1.5'	-	-	N/A
S-N60	Ephemeral	3.0	0.0"	10.0"	-	-	N/A
S-N59	Ephemeral	4.0	0.0"	1.0'	-	-	N/A
S-N58	Ephemeral	3.0	0.0"	10.0"	-	-	N/A
S-N57	Intermittent	6.0	1.0"	1.0"	-	-	N/A
S-N56	Ephemeral	3.0	0.0"	5.0"	-	-	N/A
S-N55	Perennial	8.0	3.0"	1.0'	-	-	N/A
S-N53	Perennial	6.0	10.0"	4.0"	-	-	W-N33
S-N54	Ephemeral	3.0	1.0"	3.0"	-	-	W-N33
S-N52	Perennial	12.0	5.0"	5.0"	-	-	W-N30, S-N51
S-N51	Perennial	15.0	10.0"	4.0"	-	-	W-N30, S-N52
S-N50	Ephemeral	5.0	0.0"	6.0"	-	-	S-N49
S-N49	Perennial	6.0	3.0"	6.0"	-	-	S-N50
S-N48	Perennial	10.0	2.0"	5.0'	-	-	N/A
S-N46	Perennial	18.0	6.0"	*	-	-	N/A
S-N47	Ephemeral	5.0	0.0"	1.0'	-	-	N/A
S-Q56	Perennial	5.0	1.5'	1.5'	-	-	N/A
S-N45	Perennial	6.0	6.0"	*	-	-	W-N29
S-N43	Ephemeral	3.0	0.0"	6.0"	-	-	N/A
S-N42	Intermittent	2.0	0.0"	3.0"	-	-	W-N26
S-N41	Intermittent	2.0	3.0"	7.0"	-	-	W-N25
S-N40	Ephemeral	4.0	0.0"	6.0"	-	-	W-N24
S-N39	Perennial	17.0	10.0"	10.0"	-	-	W-N24
S-N37	Perennial	4.0	2.0"	5.0"	-	-	W-N20
S-N36	Perennial	3.0	4.0"	1.0'	-	-	W-N20
S-N35	Intermittent	2.0	3.0"	2.0'	-	-	S-O44

* = See Data Sheet for Channel Depth

Table 1
Wetland and Stream Summary
Pennsylvania Pipeline Project

Water Resource	Dominant Plant Community/Flow Regime	Bank Full Width (ft.)	Water Depth (in.)	Channel Depth (in.)	Wetland Size (Square Feet)	Wetland Size (Acres)	Associated Water Resource
S-O44	Perennial	5.0	10.0"	2.0'	-	-	W-N19, W-O35, S-O43
S-O43	Intermittent	1.0	1.0"	5.0"	-	-	S-O44
S-O42	Ephemeral	2.0	1.0"	2.0"	-	-	W-O28
S-O40	Intermittent	2.0	1.0"	2.0"	-	-	W-O28, W-O27, W-O26
S-O41	Ephemeral	2.0	0.0"	6.0"	-	-	W-O26, W-O25, S-O40
S-O39	Intermittent	4.0	1.0"	1.0'	-	-	S-O38
S-O38	Intermittent	7.0	1.0"	1.0'	-	-	W-O23, S-O39
S-O37	Perennial	4.0	3.0"	1.0'	-	-	W-O20
S-O59	Perennial	30.0	1.0'	2.0'	-	-	N/A
S-O60	Ephemeral	4.0	0.0"	6.0"	-	-	W-O43
S-O58	Ephemeral	4.0	1.0"	6.0"	-	-	N/A
S-O57	Perennial	28.0	5.0"	2.0'	-	-	W-O42
S-O56	Intermittent	2.0	1.0"	6.0"	-	-	W-O42
S-O55	Intermittent	6.0	13.0"	1.0'	-	-	W-O41
S-O54	Intermittent	7.0	2.0"	6.0"	-	-	N/A
S-O52	Ephemeral	2.0	0.0"	6.0"	-	-	W-O39
S-O53	Ephemeral	2.0	0.0"	6.0"	-	-	W-O39, S-O30
S-O51	Ephemeral	4.0	0.0"	6.0"	-	-	W-O39, S-O30
S-O50	Intermittent	4.0	1.0"	6.0"	-	-	W-O39, S-O30
S-O30	Perennial	22.0	8.0"	2.0'	-	-	S-O50, S-O45, S-O48
S-O49	Intermittent	6.0	2.0"	1.0'	-	-	W-O38
S-O47	Ephemeral	4.0	0.0"	6.0"	-	-	S-O30
S-O45	Perennial	6.0	6.0"	2.0'	-	-	W-O37, S-O30
S-O48	Intermittent	2.0	0.0"	1.0'	-	-	W-O36, S-O30
S-O46	Intermittent	4.0	6.0"	2.0'	-	-	S-O30
S-O31	Ephemeral	2.0	1.0"	3.0"	-	-	W-O16, S-O30
S-O32	Intermittent	5.0	1.0"	1.0'	-	-	S-O30, S-O31
S-O33	Perennial	5.0	1.0"	4.0"	-	-	N/A
S-O35	Intermittent	3.0	1.0"	5.0"	-	-	W-O19, S-O34
S-O34	Intermittent	4.0	1.0"	1.5'	-	-	W-O19, S-O35
S-O36	Ephemeral	1.0	0.0"	6.0"	-	-	N/A
S-CC5	Perennial	4.0	4.0"	1.0'	-	-	W-CC6, W-CC7, S-CC4
S-CC4	Perennial	15.0	6.0"	3.0'	-	-	W-CC6, W-CC7, S-CC5
S-CC6	Intermittent	6.0	6.0"	1.0'	-	-	W-CC7, S-CC4
S-CC7	Perennial	20.0	3.0"	2.0'	-	-	W-CC8, W-CC9, W-CC21
S-CC8	Perennial	5.0	3.0"	1.0'	-	-	W-CC17
S-CC3	Intermittent	2.0	1.0"	1.5'	-	-	W-CC4
S-CC2	Ephemeral	2.0	1.0"	1.0'	-	-	N/A
S-CC1	Ephemeral	2.0	1.0"	1.0'	-	-	W-CC3
S-O29	Intermittent	4.0	3.0"	3.0'	-	-	W-O14
S-O28	Ephemeral	4.0	1.0"	7.0"	-	-	W-O13
S-O27	Intermittent	5.0	2.0"	10.0"	-	-	N/A

* = See Data Sheet for Channel Depth

Table 1
Wetland and Stream Summary
Pennsylvania Pipeline Project

Water Resource	Dominant Plant Community/Flow Regime	Bank Full Width (ft.)	Water Depth (in.)	Channel Depth (in.)	Wetland Size (Square Feet)	Wetland Size (Acres)	Associated Water Resource
S-BB54	Intermittent	4.0	6.5"	8.0"	-	-	W-L64
S-M84	Ephemeral	3.0	0.0"	6.0"	-	-	W-L64, S-BB56
S-BB56	Intermittent	3.0	1.5"	3.0"	-	-	W-L64, S-M84
S-M82	Ephemeral	3.0	1.0"	3.0"	-	-	W-L63, W-L64
S-L91	Ephemeral	3.0	0.0"	3.0"	-	-	W-L63, W-L64
S-L90	Ephemeral	3.0	0.0"	1.0"	-	-	N/A
S-M81	Intermittent	3.0	2.0"	4.0"	-	-	W-M59
S-L93	Ephemeral	4.0	0.0"	4.0"	-	-	W-L68
S-L94	Intermittent	8.0	3.0"	5.0"	-	-	W-L69
S-Q71	Intermittent	5.0	1.0"	1.0'	-	-	S-L94

* = See Data Sheet for Channel Depth

Table 2
Mapped Hydric Soils in Study Area
Pennsylvania Pipeline Project, Southwest Region

Map Unit Symbol	Map Unit Name	Component Name and Phase	Component Percent	Landforms
AbB	Albrights silt loam, 3 to 8 percent slopes	Brinkerton	5	hillslopes
AbC	Albrights silt loam, 8 to 15 percent slopes	Brinkerton	5	hillslopes
AmB	Armagh silt loam, 0 to 8 percent slopes	Armagh	85	depressions
AmB	Armagh silt loam, 0 to 8 percent slopes	Armagh, very stony	5	depressions
At	Atkins silt loam, 0 to 3 percent slopes, frequently flooded	Atkins	85	flood plains
AtA	Atkins-Philo complex, 0 to 2 percent slopes, frequently flooded	Atkins	40	flood plains
AtA	Atkins-Philo complex, 0 to 2 percent slopes, frequently flooded	Brinkerton	10	draws
BeB	Bethesda very channery silt loam, 0 to 8 percent slopes	Wet spots	1	depressions
BeD	Bethesda very channery silt loam, 8 to 25 percent slopes	Wet spots	1	depressions
BkB	Brinkerton silt loam, 3 to 8 percent slopes	Brinkerton	80	hills
BmB	Blairton silt loam, 3 to 8 percent slopes	Brinkerton	5	hills
BpC	Blairton-Berks channery silt loams, 8 to 15 percent slopes	Brinkerton	5	depressions
BtB	Brinkerton soils, 3 to 8 percent slopes	Brinkerton, wooded	66	hillslopes

Table 2
Mapped Hydric Soils in Study Area
Pennsylvania Pipeline Project, Southwest Region

BtB	Brinkerton soils, 3 to 8 percent slopes	Brinkerton, nonwooded	19	hillslopes
BuB	Buchanan loam, 3 to 8 percent slopes	Andover	5	mountain slopes
BuC	Buchanan loam, 8 to 15 percent slopes	Andover	5	mountain slopes
BvB	Brinkerton very stony silt loam, 0 to 8 percent slopes	Brinkerton	90	hills
BxB	Buchanan loam, 0 to 8 percent slopes, extremely stony	Andover	5	mountain slopes
CaA	Cavode silt loam, 0 to 3 percent slopes	Brinkerton	5	hills
CaB	Cavode silt loam, 3 to 8 percent slopes	Brinkerton	5	hills
CaC	Cavode silt loam, 8 to 15 percent slopes	Brinkerton	5	draws
CaC	Cavode silt loam, 8 to 15 percent slopes	Brinkerton	5	hills
CbB	Cavode very stony silt loam, 0 to 8 percent slopes	Brinkerton	5	draws
CeA	Cookport and Ernest soils, 0 to 3 percent slopes	Brinkerton	10	depressions
CeB	Cookport and Ernest soils, 3 to 8 percent slopes	Brinkerton	10	depressions
CeC	Cookport and Ernest soils, 8 to 15 percent slopes	Brinkerton	5	depressions
CeD	Cookport and Ernest soils, 15 to 25 percent slopes	Brinkerton	5	depressions

Table 2
Mapped Hydric Soils in Study Area
Pennsylvania Pipeline Project, Southwest Region

CoB	Cookport loam, 3 to 8 percent slopes	Nolo	5	mountains
CvB	Cookport and Ernest very stony soils, 0 to 8 percent slopes	Brinkerton	10	depressions
CvD	Cookport and Ernest very stony soils, 8 to 25 percent slopes	Brinkerton	5	depressions
ErB	Ernest silt loam, 3 to 8 percent slopes	Brinkerton	5	draws
ErB	Ernest silt loam, 3 to 8 percent slopes	Brinkerton	5	hills
ErC	Ernest silt loam, 8 to 15 percent slopes	Brinkerton	5	hills
ErC	Ernest silt loam, 8 to 15 percent slopes	Brinkerton	5	draws
EsD	Ernest silt loam, 8 to 25 percent slopes, very stony	Brinkerton	5	draws
FaB	Fairpoint very channery silt loam, 0 to 8 percent slopes	Wet spots	1	depressions
FaC	Fairpoint very channery silt loam, 8 to 15 percent slopes	Wet spots	1	depressions
FaD	Fairpoint very channery silt loam, 15 to 25 percent slopes	Wet spots	1	depressions
GxA	Ginat silt loam, 0 to 2 percent slopes	Ginat	70	terraces
Ho	Holly silt loam, 0 to 2 percent slopes	Holly	75	flood plains
Ln	Lindside silt loam, 0 to 2 percent slopes	Melvin	5	flood plains

Table 2
Mapped Hydric Soils in Study Area
Pennsylvania Pipeline Project, Southwest Region

Lo	Lobdell silt loam, 0 to 2 percent slopes	Holly	5	flood plains
LtB	Leetonia very stony loamy sand, 3 to 8 percent slopes	Nolo	2	depressions
Mn	Melvin and Newark silt loams, 0 to 2 percent slopes	Melvin	45	flood plains
MoA	Monongahela silt loam, 0 to 3 percent slopes	Purdy	5	terraces
MoB	Monongahela silt loam, 3 to 8 percent slopes	Purdy	5	terraces
MoC	Monongahela silt loam, 8 to 15 percent slopes	Purdy	5	terraces
Ph	Philo silt loam, 0 to 3 percent slopes, occasionally flooded	Atkins	10	flood plains
PhA	Philo silt loam, 0 to 2 percent slopes, occasionally flooded	Atkins	10	flood plains
PuA	Purdy silt loam, 0 to 2 percent slopes	Purdy	75	terraces
ThA	Thorndale silt loam, 0 to 3 percent slopes	Thorndale	90	depressions
TyB	Tyler silt loam, 2 to 6 percent slopes	Purdy	5	terraces
UDC	Udorthents, strip mine, sloping	Wet spots	1	depressions
URC	Urban land-Udorthents complex, sloping	Wet spots	1	depressions
WaB	Wharton silt loam, 3 to 8 percent slopes	Brinkerton	2	sloughs

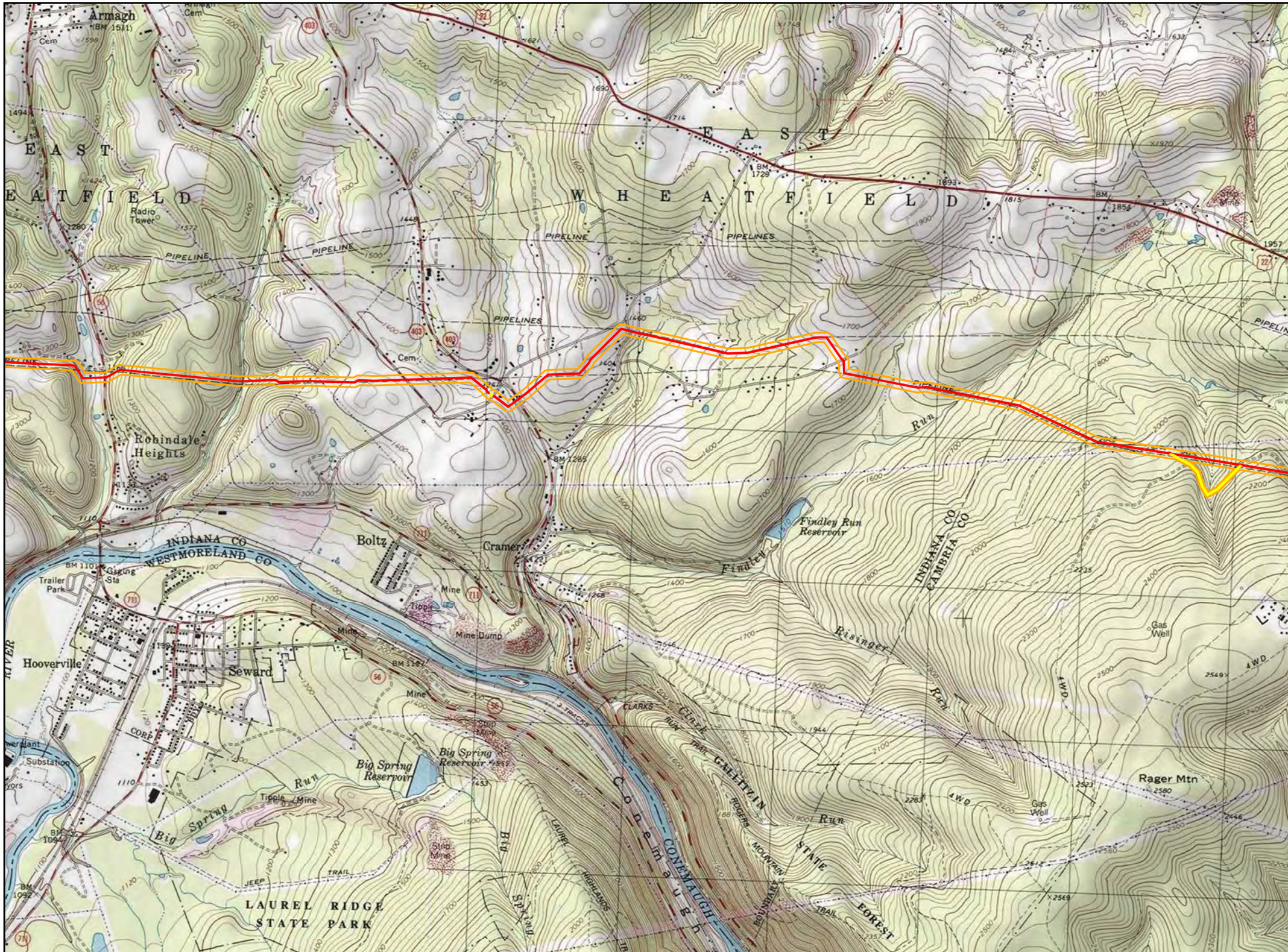
Table 2
Mapped Hydric Soils in Study Area
Pennsylvania Pipeline Project, Southwest Region

WeA	Weinbach silt loam, 0 to 2 percent slopes	Ginat	5	terraces
WhA	Wharton silt loam, 0 to 3 percent slopes	Cavode	5	hills
WhA	Wharton silt loam, 0 to 3 percent slopes	Brinkerton	5	depressions
WhB	Wharton silt loam, 3 to 8 percent slopes	Cavode	8	hills
WhB	Wharton silt loam, 3 to 8 percent slopes	Brinkerton	5	depressions
WrB	Wharton silt loam, 3 to 8 percent slopes	Cavode	8	hills
WrB	Wharton silt loam, 3 to 8 percent slopes	Brinkerton	5	depressions
Modified from Hydric Soils of the United States (NRCS 2014)				

Table 3
Mapped NWI and Corresponding Delineated Wetlands
Pennsylvania Pipeline Project

Figure Number	NWI Code	NWI Latitude	NWI Longitude	Corresponding Wetland ID
4-7	PUBH	40.430369°	-79.506690°	W-M73
4-22	PUBH	40.440833°	-79.361953°	W-P13
4-22	PUBH	40.440665°	-79.362209°	Pond-P3
4-27	PUBH	40.444020°	-79.308114°	Pond-P2
4-28	PFO1Ah	40.444850°	-79.301395°	W-N28
4-83	PUBH	40.435878°	-78.769718°	W-CC17
4-85	L1UBHh	40.436071°	-78.768671°	Pond-CC1
4-101	PSS1/EM1C	40.449179°	-78.605511°	W-K31
4-101	PFO1C	40.449635°	-78.605369°	W-K31

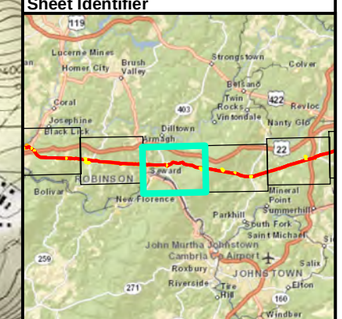
FIGURES



Legend

- Access Road
- Alignment Centerline
- Study Area

Sheet Identifier



N

0 1,000 2,000 Feet

0 300 600 Meters

USGS PROJECT LOCATION MAP
FIGURE 1-7
PENNSYLVANIA PIPELINE PROJECT
JUNE 19, ALIGNMENT
SUNOCO LOGISTICS, L.P.
INDIANA COUNTY, PA

TETRA TECH

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

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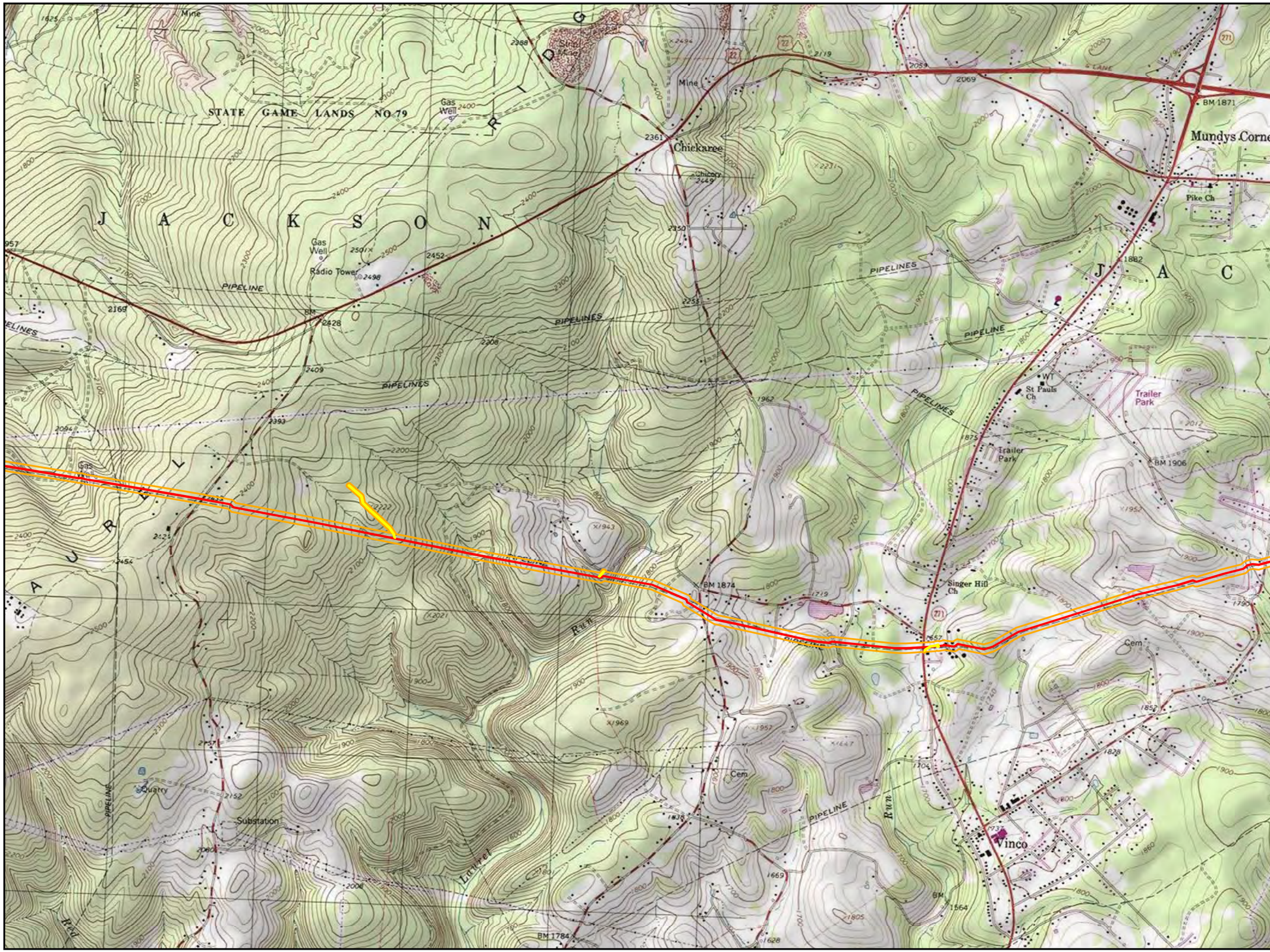
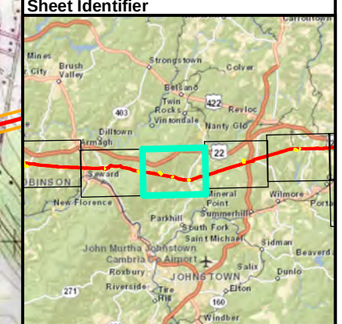


Legend

- Access Road
- Alignment Centerline
- Study Area

Sheet Identifier



Feet: 0 1,000 2,000

Meters: 0 300 600

USGS PROJECT LOCATION MAP
FIGURE 1-8
PENNSYLVANIA PIPELINE PROJECT
JUNE 19, ALIGNMENT
SUNOCO LOGISTICS, L.P.
CAMBRIA COUNTY, PA

TETRA TECH

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

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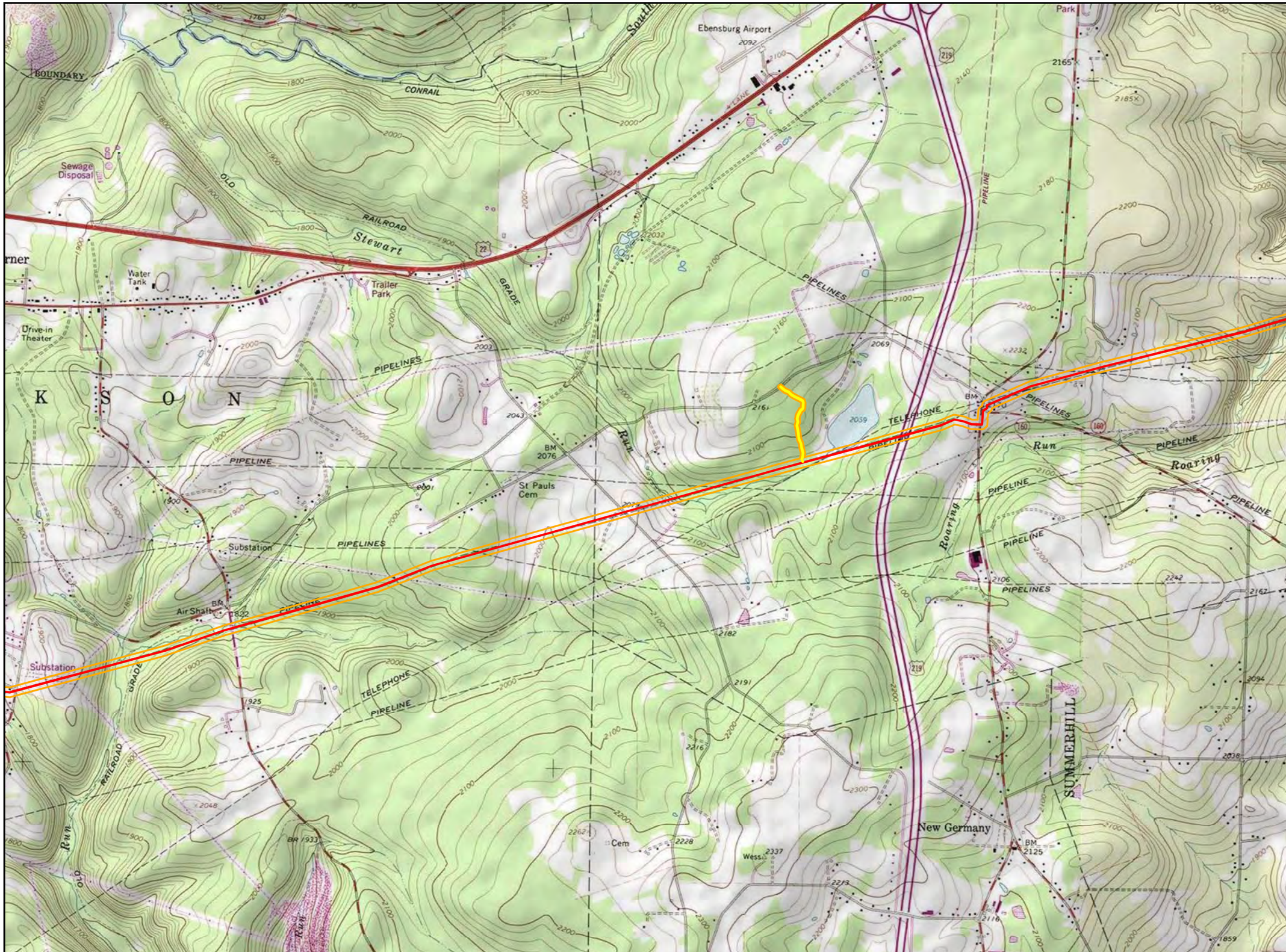
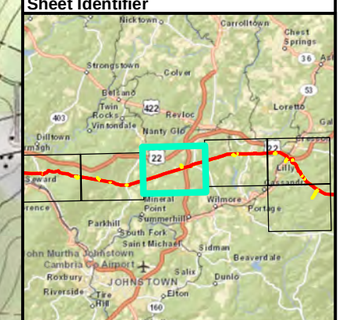


Legend

- Access Road
- Alignment Centerline
- Study Area

Sheet Identifier



Feet: 0 1,000 2,000

Meters: 0 300 600

USGS PROJECT LOCATION MAP
FIGURE 1-9
PENNSYLVANIA PIPELINE PROJECT
JUNE 19, ALIGNMENT
SUNOCO LOGISTICS, L.P.
CAMBRIA COUNTY, PA

TETRA TECH

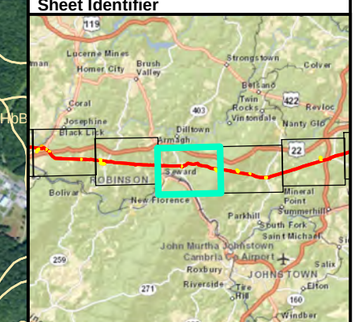
Notes:
1) Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).
2) Quadrangles being displayed are Ebensburg, Nanty Glo

PGH P:\GIS\SUNOCO\MARINER EAST 2\MXD\PPP WETLANDS SWIP\ENNPIPELINE_SOUTHWEST_USGS.MXD 06/30/15 JN

Legend

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

Sheet Identifier



N

0 1,000 2,000 Feet

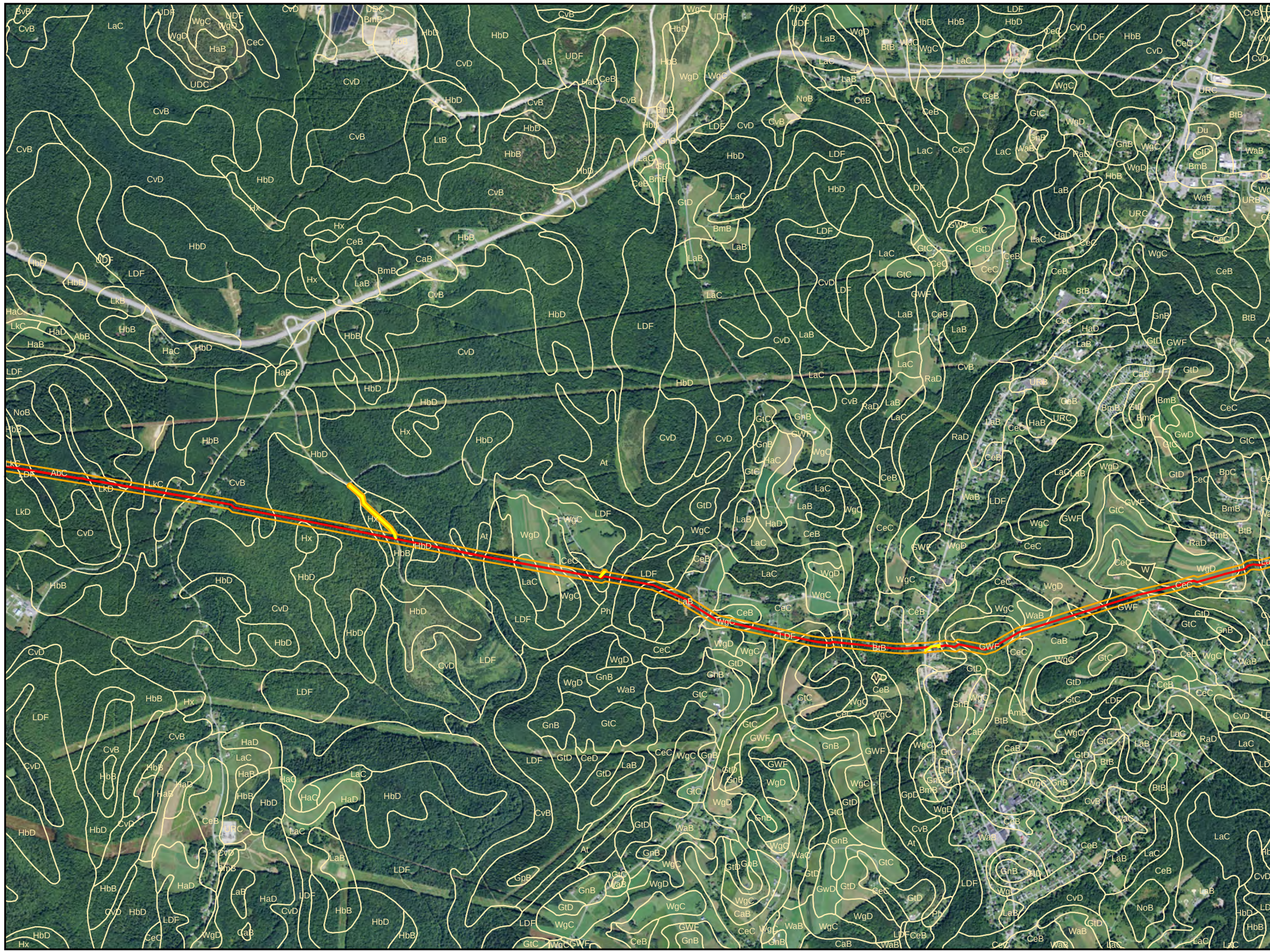
0 300 600 Meters

NRCS SOILS MAP
FIGURE 2-7
PENNSYLVANIA PIPELINE PROJECT
JUNE 19, ALIGNMENT
SUNOCO LOGISTICS, L.P.
INDIANA COUNTY, PA

TETRA TECH

Notes:
Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

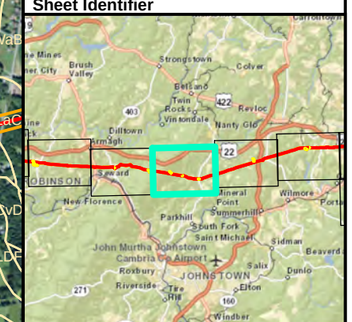
PGH P:\GIS\SUNOCO\MARINER EAST 2\MXD\PPP WETLANDS SWIPE\NIP\PIPELINE_SOUTHWEST_SOILS.MXD 06/30/15 JN



Legend

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

Sheet Identifier



N

0 1,000 2,000 Feet

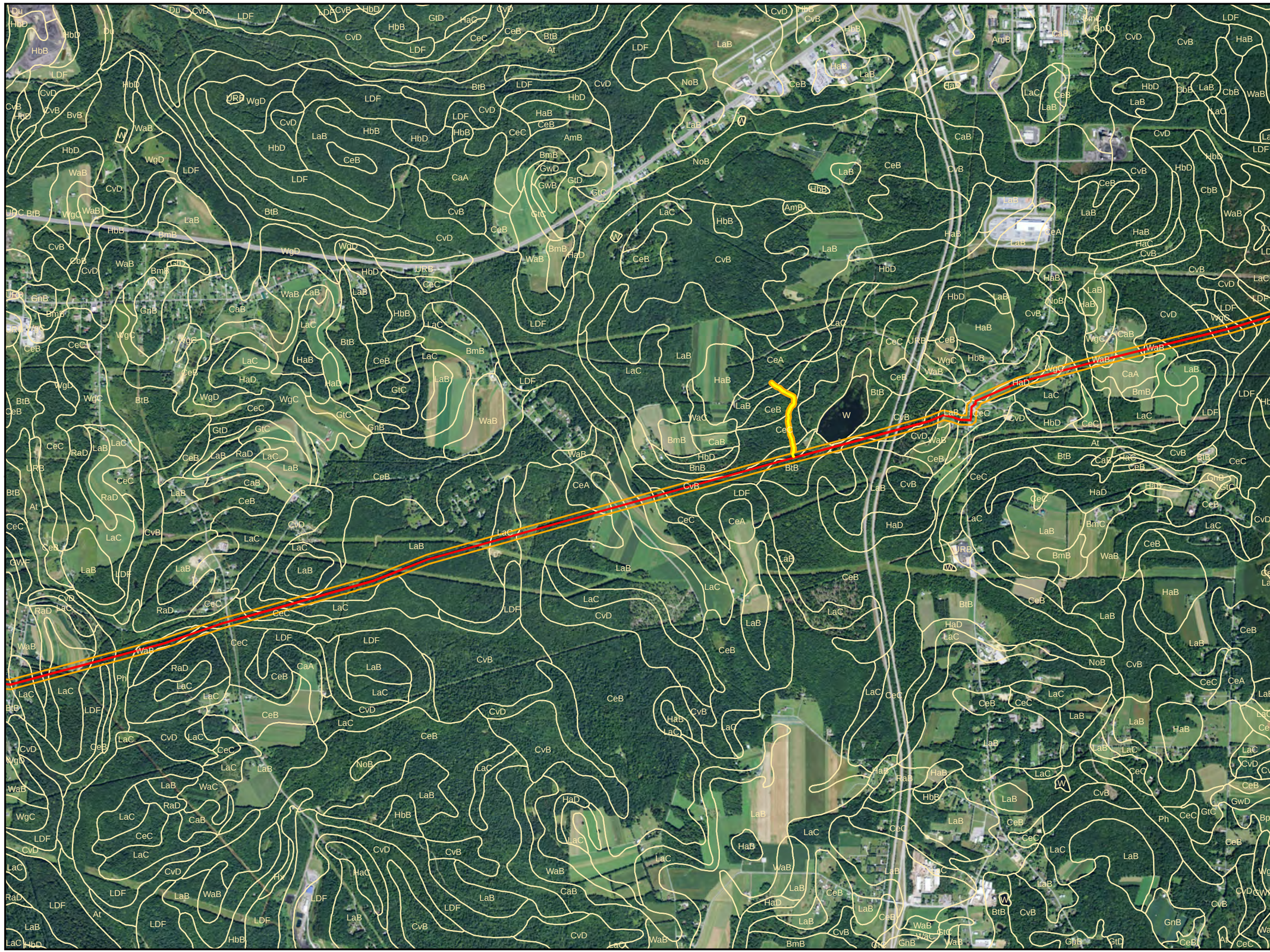
0 300 600 Meters

NRCS SOILS MAP
FIGURE 2-8
PENNSYLVANIA PIPELINE PROJECT
JUNE 19, ALIGNMENT
SUNOCO LOGISTICS, L.P.
CAMBRIA COUNTY, PA

TETRA TECH

Notes:
Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

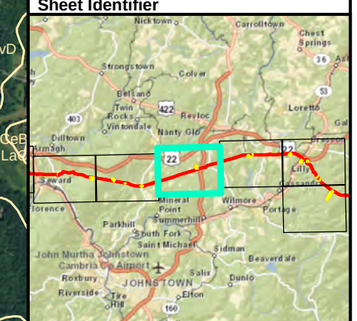
PGH P:\GIS\SUNOCO\MARINER EAST 2\MXD\PPP WETLANDS SW\PENNIPIPELINE_SOUTHWEST_SOILS.MXD 06/30/15 JN



Legend

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

Sheet Identifier



0 1,000 2,000 Feet

0 300 600 Meters

NRCS SOILS MAP
FIGURE 2-9
PENNSYLVANIA PIPELINE PROJECT
JUNE 19, ALIGNMENT
SUNOCO LOGISTICS, L.P.
CAMBRIA COUNTY, PA

TETRA TECH

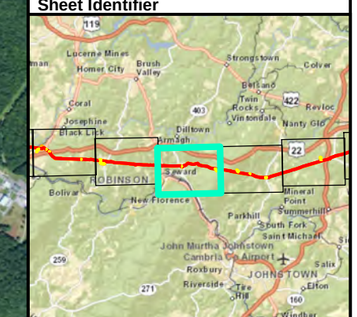
Notes:
Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

PGH P:\GIS\SUNOCO\MARINER EAST 2\MXD\PPP WETLANDS SWIP\ENNIPIPELINE_SOUTHWEST_SOILS.MXD 06/30/15 JN

Legend

- Access Road
- Alignment Centerline
- Study Area
- NWI Wetlands and Codes

Sheet Identifier



N

0 1,000 2,000 Feet

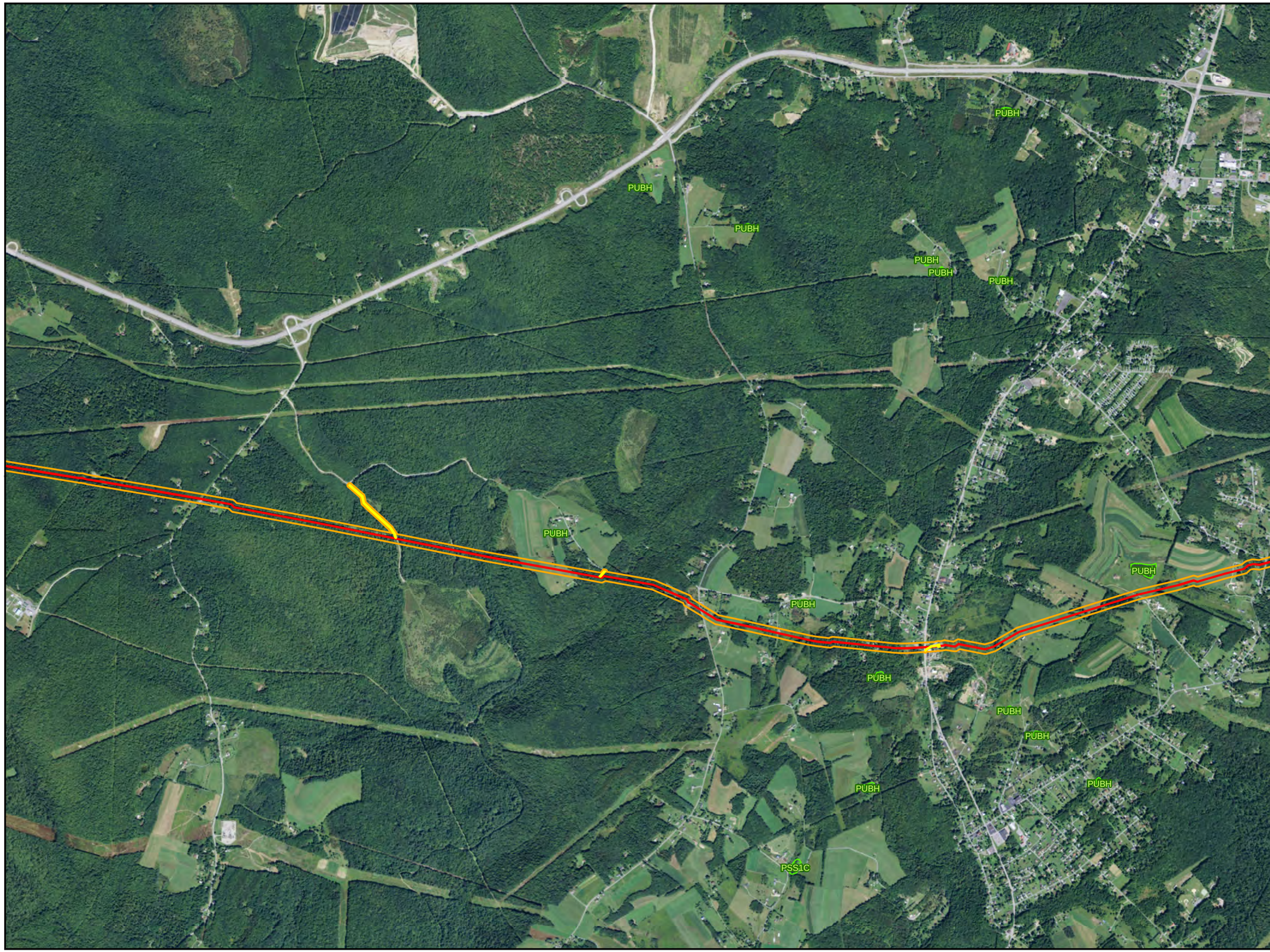
0 300 600 Meters

NWI WETLANDS MAP
FIGURE 3-7
PENNSYLVANIA PIPELINE PROJECT
JUNE 19, ALIGNMENT
SUNOCO LOGISTICS, L.P.
INDIANA COUNTY, PA

TETRA TECH

Notes:
Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

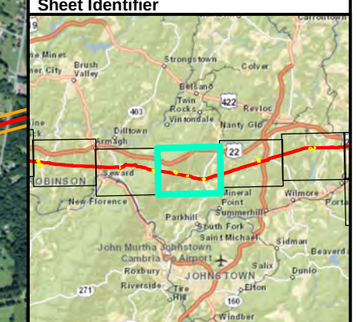
PGH P:\GIS\SUNOCO\MARINER EAST 2\MXD\PPP WETLANDS SW\PENNPIPELINE_SOUTHWEST_NWI.MXD 06/30/15 JN



Legend

- Access Road
- Alignment Centerline
- Study Area
- NWI Wetlands and Codes

Sheet Identifier



N

0 1,000 2,000 Feet

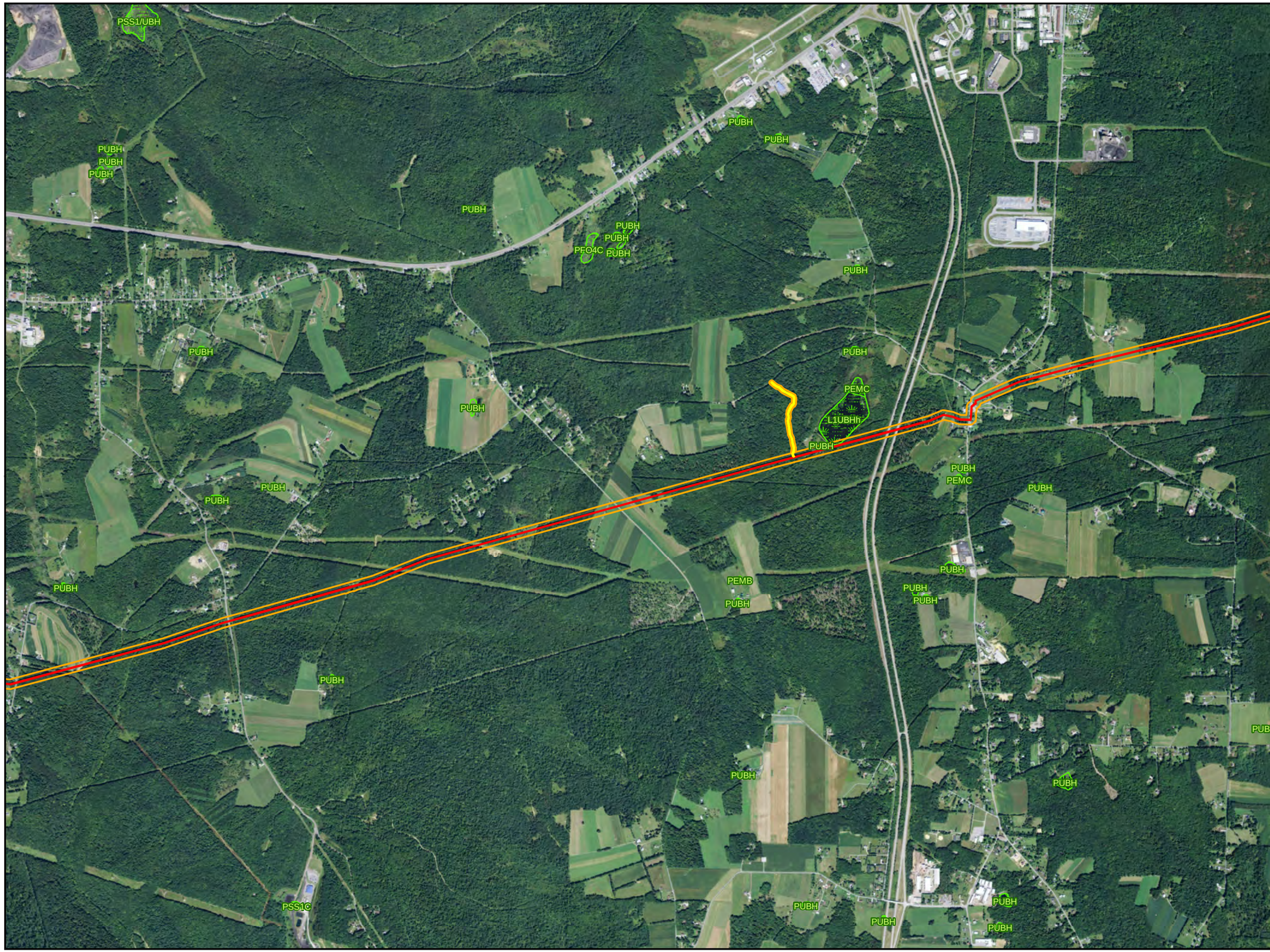
0 300 600 Meters

NWI WETLANDS MAP
FIGURE 3-8
PENNSYLVANIA PIPELINE PROJECT
JUNE 19, ALIGNMENT
SUNOCO LOGISTICS, L.P.
CAMBRIA COUNTY, PA

TETRA TECH

Notes:
Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

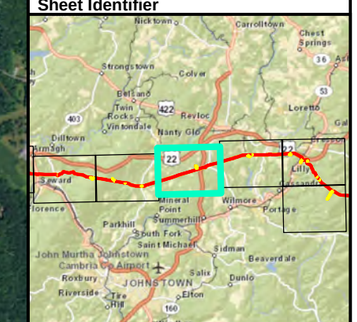
PGH P:\GIS\SUNOCO\MARINER EAST 2\MXD\PPP WETLANDS SWIPE\NWIPIPELINE_SOUTHWEST_NWI.MXD 06/30/15 JN



Legend

- Access Road
- Alignment Centerline
- Study Area
- NWI Wetlands and Codes

Sheet Identifier



N

0 1,000 2,000 Feet

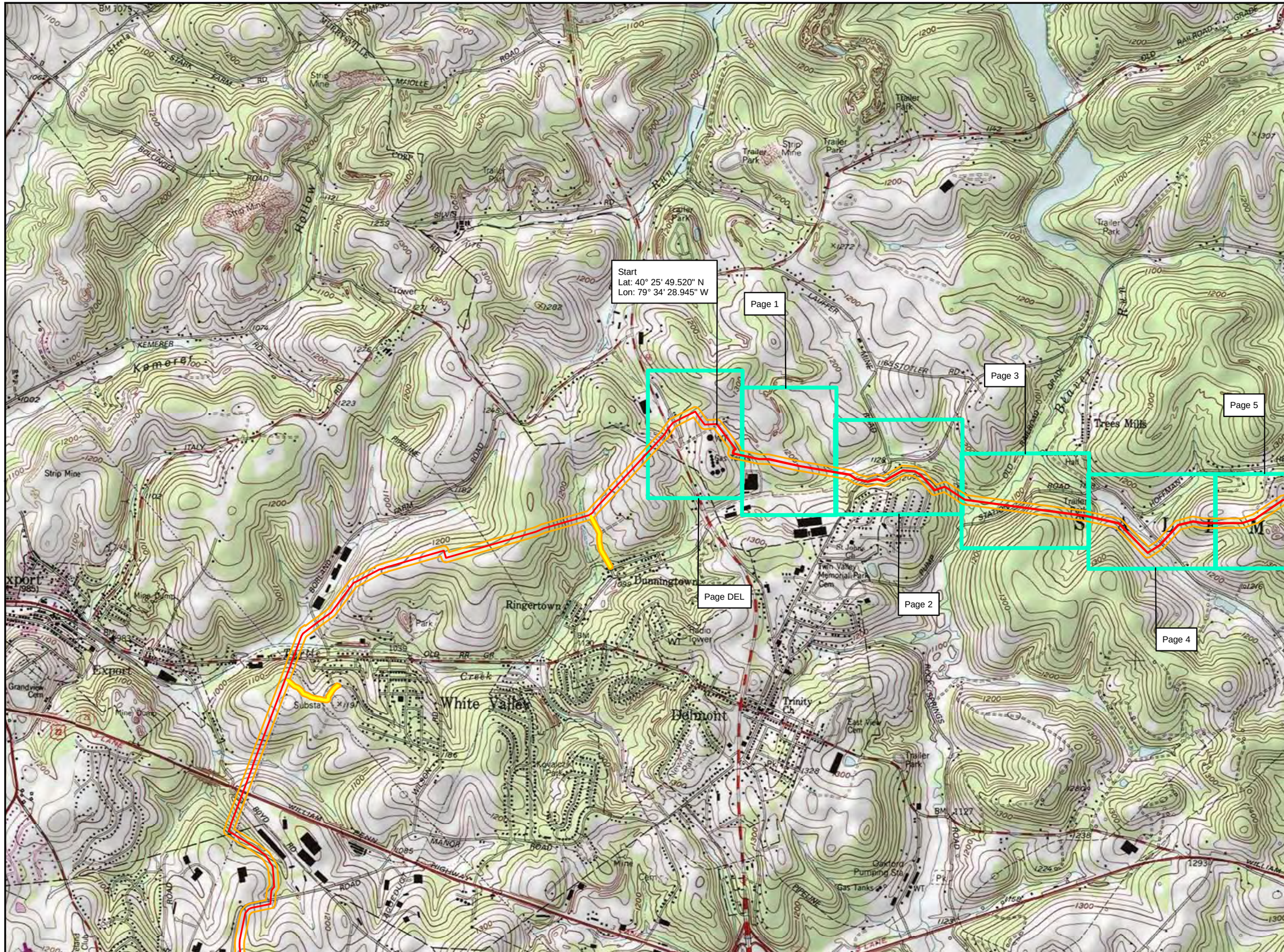
0 300 600 Meters

NWI WETLANDS MAP
FIGURE 3-9
PENNSYLVANIA PIPELINE PROJECT
JUNE 19, ALIGNMENT
SUNOCO LOGISTICS, L.P.
CAMBRIA COUNTY, PA

TETRA TECH

Notes:
Aerial photograph provided by ESRI's ArcGIS Online World Imagery map service (© 2011 ESRI and its data suppliers).

PGH P:\GIS\SUNOCO\MARINER EAST 2\MXD\PPP WETLANDS SW\PENNPIPELINE_SOUTHWEST_NWI.MXD 06/30/15 JN

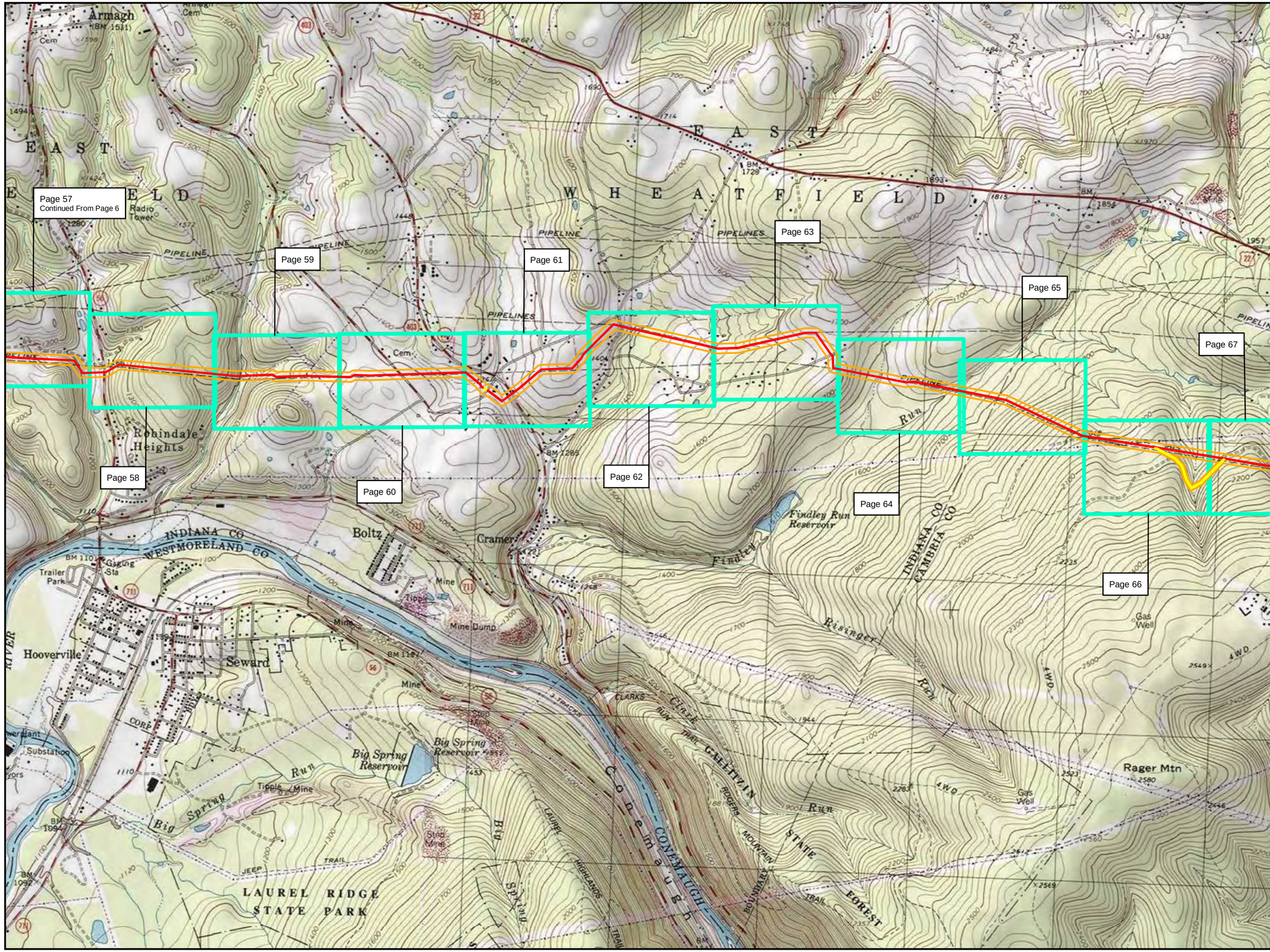


Legend

- Access Road
- Alignment Centerline
- Study Area
- Map Book Index

Sheet Identifier

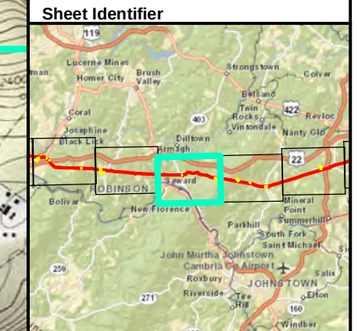
NEW KENSINGTON
LOWER BURRELL
PLUM
Slickville
Monroeville
Murrysville
Export
Delmont
JEANNETTE
Harrison City
Hannastown
Youngwood
Pleasant Unity
Whitney
Arona
Hostetter
Rgnl Airport
Arnold Palmer
Midway
Vandergrift
North Apollo
Apollo
Leechburg
Loyalhanna
Lawson
Sarver
Saltsburg
Clarksburg
Avonmore
Edmon
Salina
Slickville
Sagamore
Leechburg
Parnassus
Tarentum
Creighton
East Vandergrift
Harrison City
Forbes
Crabtree
Irwin
Wyndmoor
Trafford
Pitcairn
Turtle Creek
Wilmerding
Duquesne
Versailles
Glassport
Elrama
Coulter
Finleyville
Bethel Park
Upper St Clair
Mt Lebanon
Dormont
Pittsburgh
Ohio River
Allegheny River
Monongahela River
Allegheny Co
Beaver Co
Westmoreland Co
Butler Co
Allegheny Co
Washington Co
Allegheny Co
Beaver Co
Allegheny Co
Allegheny Co
Allegheny



Legend

- Access Road
- Alignment Centerline
- Study Area
- Map Book Index

Sheet Identifier



N

0 1,000 2,000 Feet

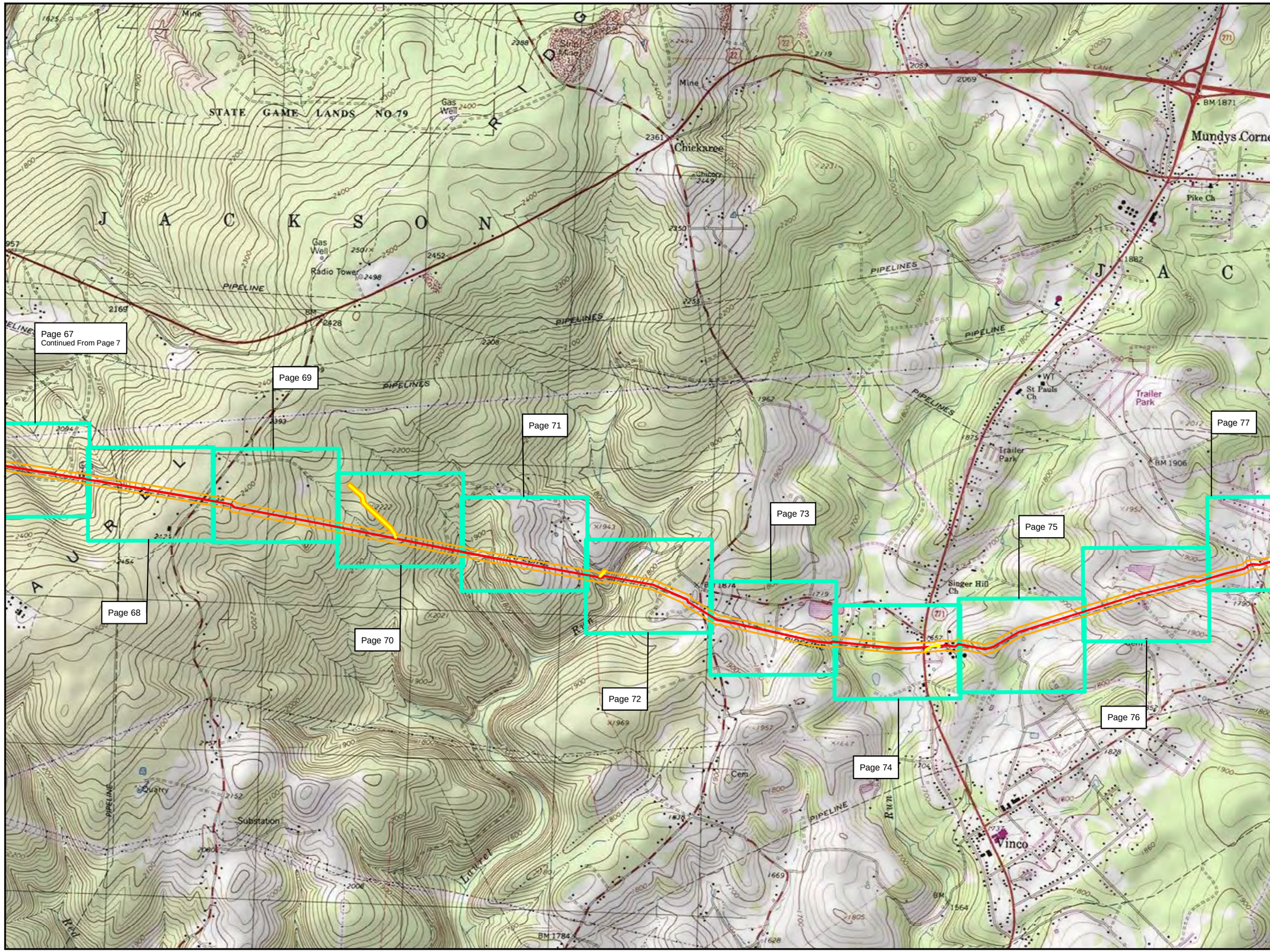
0 300 600 Meters

USGS PROJECT LOCATION MAP
FIGURE 4-INDEX-7
PENNSYLVANIA PIPELINE PROJECT
JUNE 19, ALIGNMENT
SUNOCO LOGISTICS, L.P.
INDIANA COUNTY, PA

TETRA TECH

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

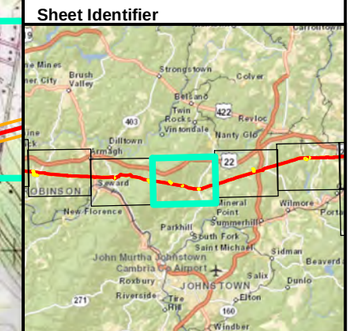
PGH P:\GIS\SUNOCO\MARINER EAST 2\MXD\PIPP WETLANDS SW\PENNPIPELINE_SOUTHWEST_INDEX.MXD 06/30/15 JN



Legend

- Access Road
- Alignment Centerline
- Study Area
- Map Book Index

Sheet Identifier



N

Feet: 0 1,000 2,000

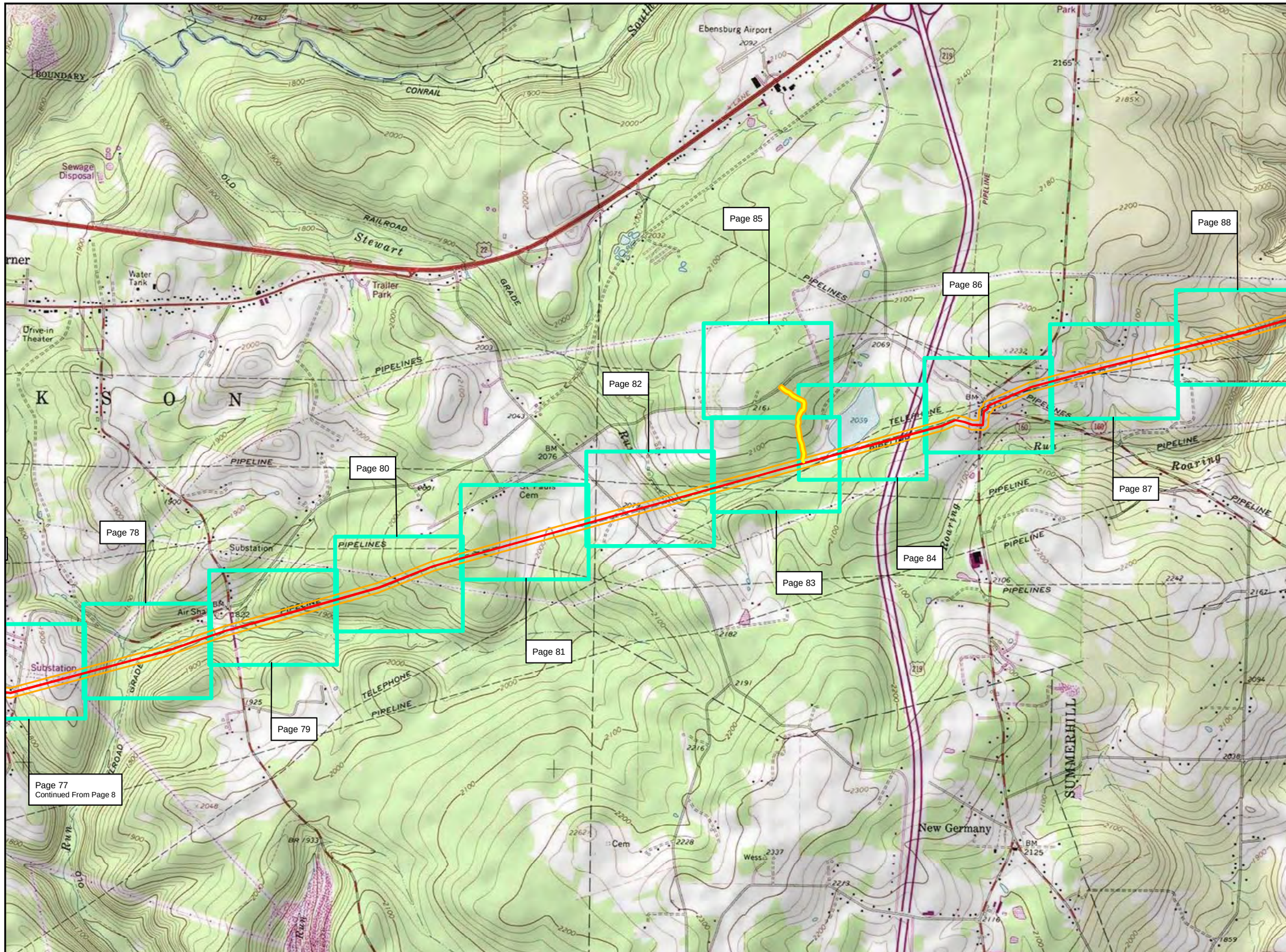
Meters: 0 300 600

USGS PROJECT LOCATION MAP
FIGURE 4-INDEX-8
PENNSYLVANIA PIPELINE PROJECT
JUNE 19, ALIGNMENT
SUNOCO LOGISTICS, L.P.
CAMBRIA COUNTY, PA

TETRA TECH

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

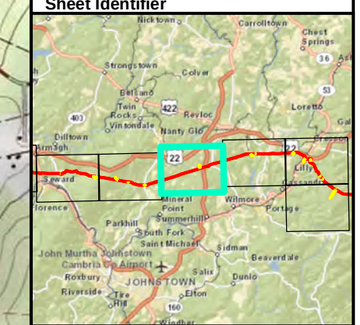
PGH P:\GIS\SUNOCO\MARINER EAST 2\MXD\PPP WETLANDS SW\PENNPIPELINE_SOUTHWEST_INDEX.MXD 06/30/15 JN



Legend

- Access Road
- Alignment Centerline
- Study Area
- Map Book Index

Sheet Identifier



N

0 1,000 2,000 Feet

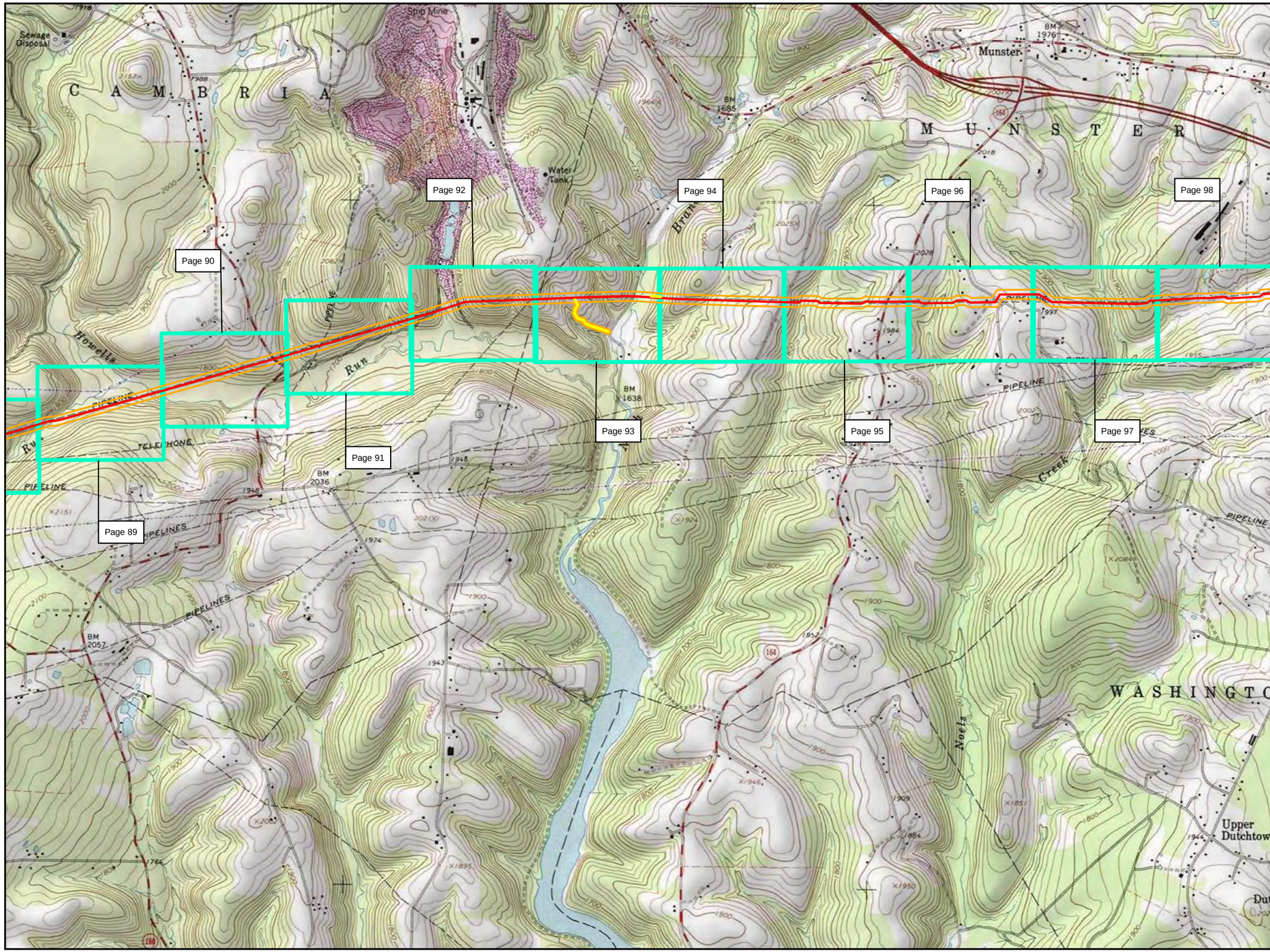
0 300 600 Meters

USGS PROJECT LOCATION MAP
FIGURE 4-INDEX-9
PENNSYLVANIA PIPELINE PROJECT
JUNE 19, ALIGNMENT
SUNOCO LOGISTICS, L.P.
CAMBRIA COUNTY, PA

TETRA TECH

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

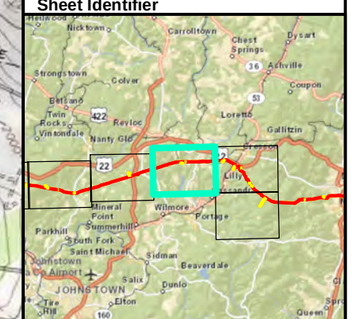
PGH P:\GIS\SUNOCO\MARINER EAST 2\MXD\PPP WETLANDS SW\PENNPIPELINE_SOUTHWEST_INDEX.MXD 06/30/15 JN



Legend

- Access Road
- Alignment Centerline
- Study Area
- Map Book Index

Sheet Identifier



Feet: 0 1,000 2,000

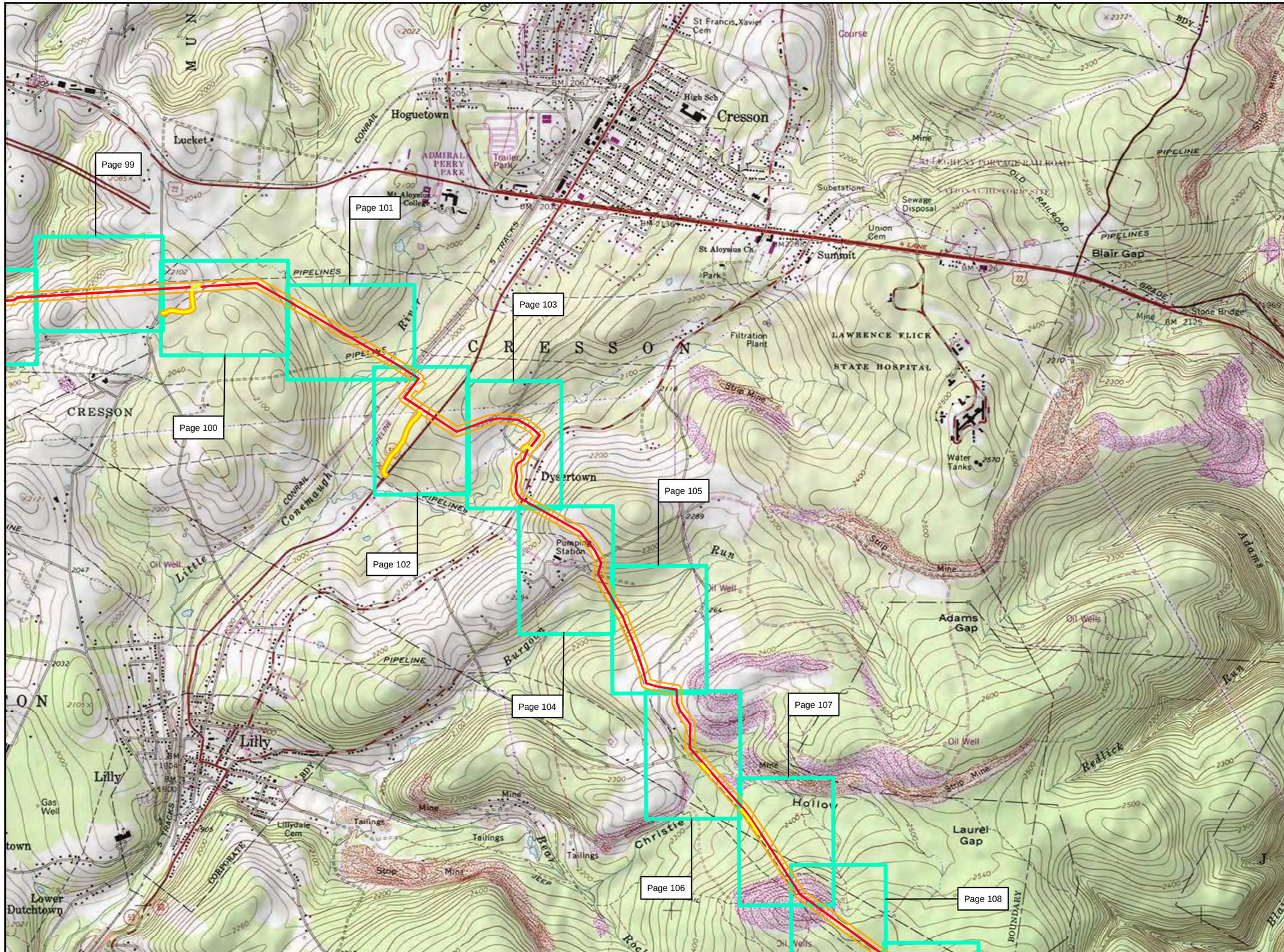
Meters: 0 300 600

USGS PROJECT LOCATION MAP
FIGURE 4-INDEX-10
PENNSYLVANIA PIPELINE PROJECT
JUNE 19, ALIGNMENT
SUNOCO LOGISTICS, L.P.
CAMBRIA COUNTY, PA

TETRA TECH

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

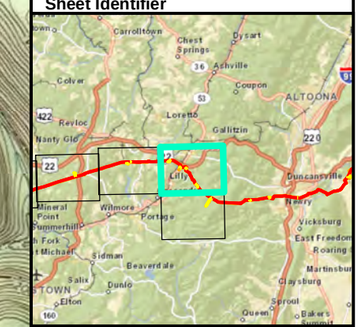
PGH P:\GIS\SUNOCO\MARINER EAST 2\MXD\PPP WETLANDS SW\PENNPIPELINE_SOUTHWEST_INDEX MXD 06/30/15 JN



Legend

- Access Road
- Alignment Centerline
- Study Area
- Map Book Index

Sheet Identifier



0 1,000 2,000 Feet

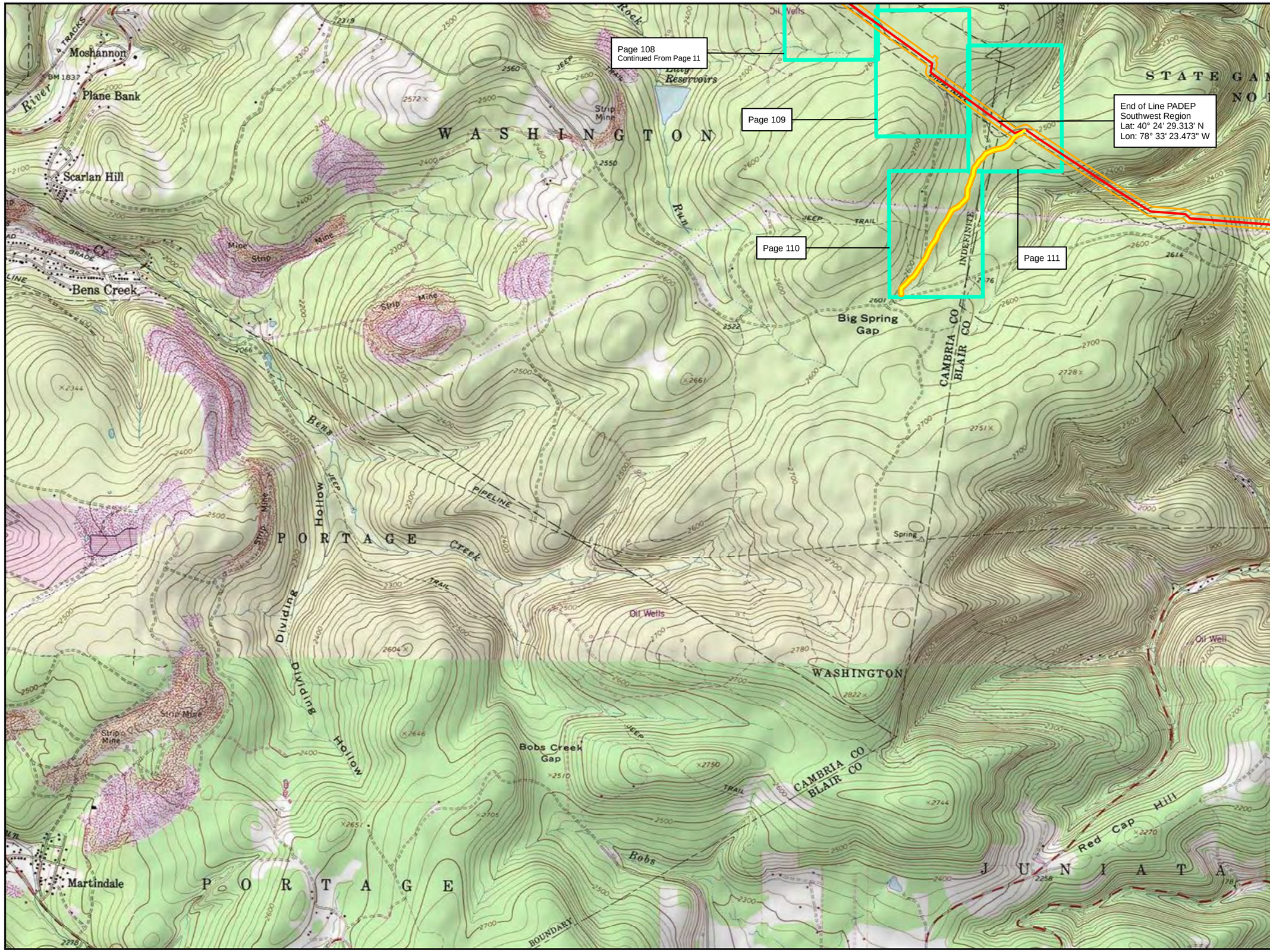
0 300 600 Meters

USGS PROJECT LOCATION MAP
FIGURE 4-INDEX-11
PENNSYLVANIA PIPELINE PROJECT
JUNE 19, ALIGNMENT
SUNOCO LOGISTICS, L.P.
CAMBRIA COUNTY, PA

TETRA TECH

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

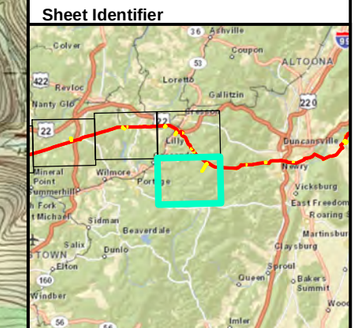
PGH P:\GIS\UNOCO\MARINER EAST 2\MXD\PPP WETLANDS SWP\ENN\PIPELINE_SOUTHWEST_INDEX.MXD 06/30/15 JN



Legend

- Access Road
- Alignment Centerline
- Study Area
- Map Book Index

Sheet Identifier



N

Feet: 0 1,000 2,000

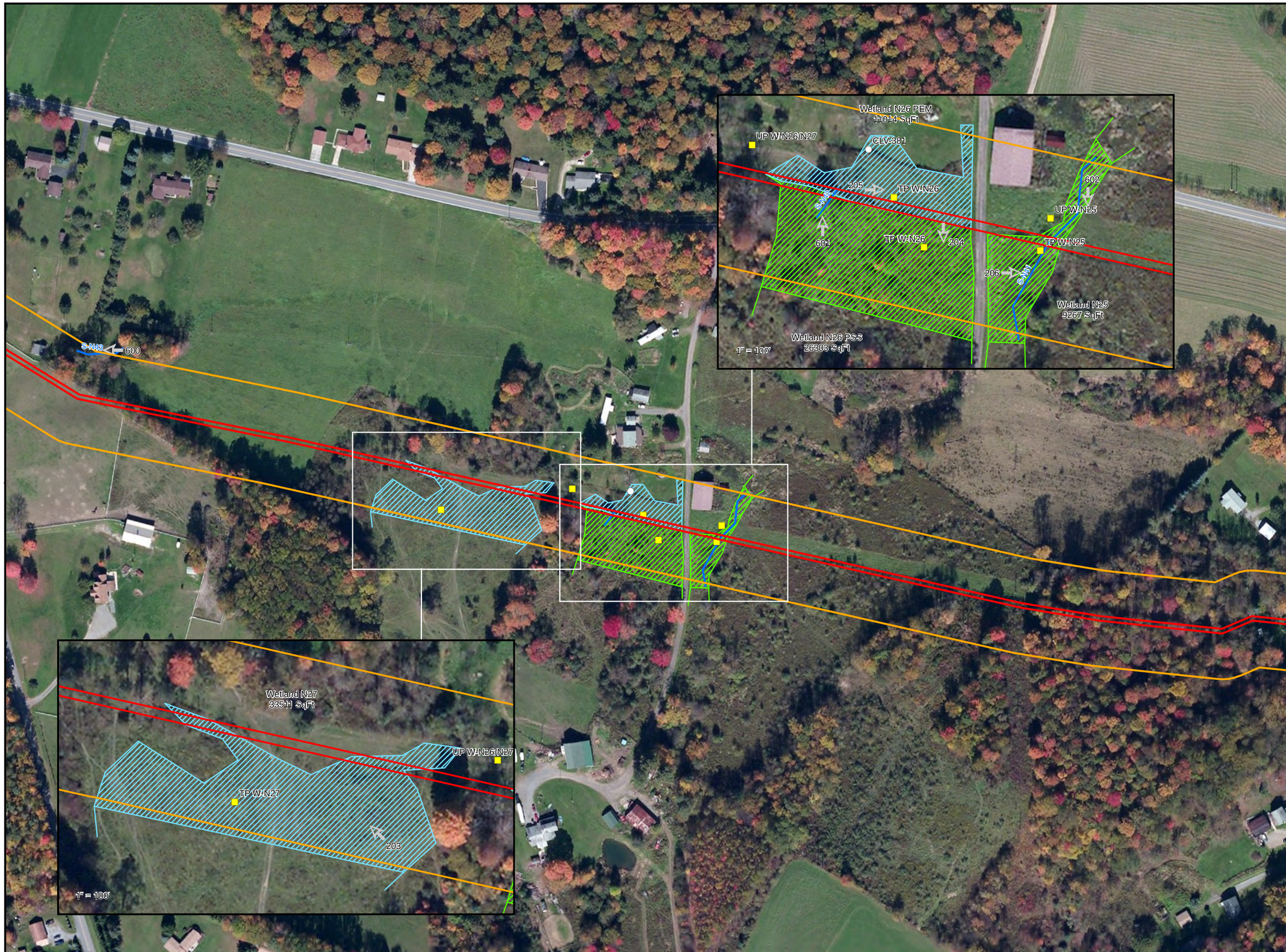
Meters: 0 300 600

USGS PROJECT LOCATION MAP
FIGURE 4-INDEX-12
PENNSYLVANIA PIPELINE PROJECT
JUNE 19, ALIGNMENT
SUNOCO LOGISTICS, L.P.
CAMBRIA COUNTY, PA

TETRA TECH

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

PGH P:\GIS\SUNOCO\MARINER EAST 2\MXD\PPP WETLANDS SW\PENNPIPELINE_SOUTHWEST_INDEX.MXD 06/30/15 JN



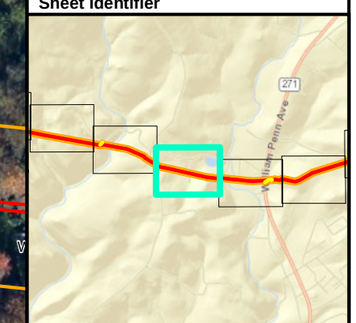
Legend

- Access Road
- Alignment Centerline
- Study Area
- Culvert
- Sample Location
- Photo Location
- Drainage Feature
- Stream

Wetland

- PEM
- PFO
- PSS
- PuB

Sheet Identifier



N

Feet: 0 100 200

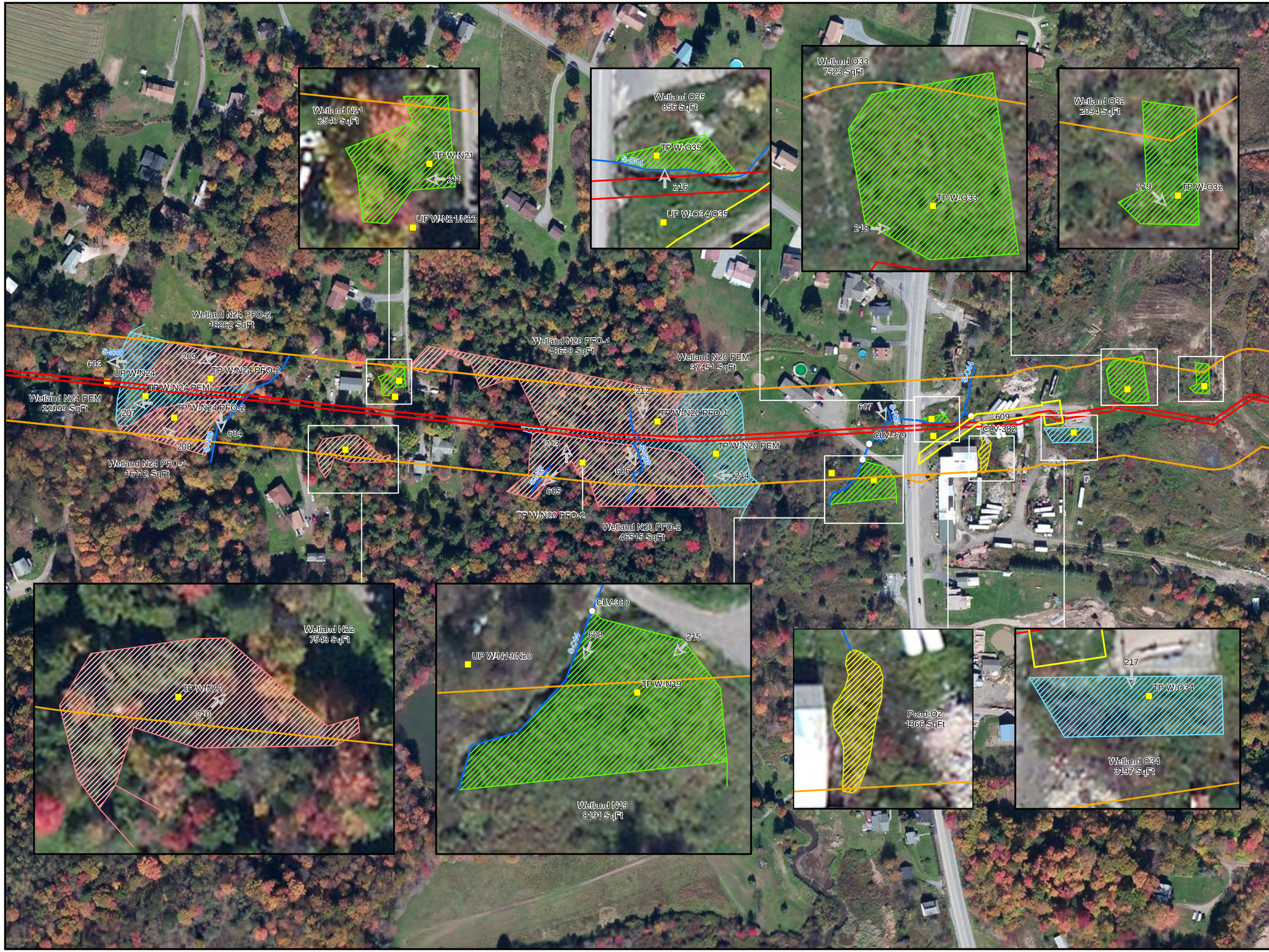
Meters: 0 30.45 60.9

WETLANDS DETAIL MAP
FIGURE 4-73
PENNSYLVANIA PIPELINE PROJECT
JUNE 19, 2015 ALIGNMENT
SUNOCO LOGISTICS, L.P.
CAMBRIA COUNTY, PA

TETRA TECH

Notes:
1) Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).
2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.

PGH P:\GIS\SUNOCO\MARINER EAST 2\MXD\PPP-WETLANDS SW\PENNP\PELINE_CAMBRIA\CO_DETAIL1.MXD 07/01/15 JN



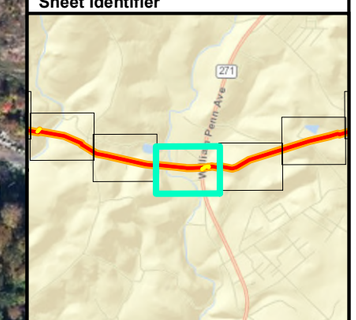
Legend

- Access Road
- Alignment Centerline
- Study Area
- Culvert
- Sample Location
- Photo Location
- Drainage Feature
- Stream

Wetland

- PEM
- PFO
- PSS
- PuB

Sheet Identifier



N

Feet: 0 100 200

Meters: 0 30.45 60.9

WETLANDS DETAIL MAP
FIGURE 4-74
PENNSYLVANIA PIPELINE PROJECT
JUNE 19, 2015 ALIGNMENT
SUNOCO LOGISTICS, L.P.
CAMBRIA COUNTY, PA

TETRA TECH

Notes:
1) Topographic map provided by ESRI's ArcGIS Online USA Topo Maps map service (© 2013 National Geographic Society, i-cubed).
2) Map insets are at a scale of 1 inch = 50 feet unless otherwise noted.

PGH P:\GIS\SUNOCO\MARINER EAST 2\MXD\PPP WETLANDS\SWIPENNPIPELINE_CAMBRIACO_DETAIL1.MXD 07/01/15 JN

APPENDIX A
USACE DATA SHEETS

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PPP City/County: Cambria Sampling Date: 07/21/2014

Applicant/Owner: Sunoco State: PA Sampling Point: W-N20 PEM

Investigator(s): A. Grech, A. Stott Section, Township, Range: Jackson

Landform (hillslope, terrace, etc.): valley bottom Local relief (concave, convex, none): concave Slope (%): 0-4%

Subregion (LRR or MLRA): LRRN Lat: 40.415386° Long: -78.862351° Datum: NAD 83

Soil Map Unit Name: Brinkerton soils, 3 to 8 percent slopes (BtB) NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes 3 No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes 3 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 3	No _____	**Is the Sampled Area within a Wetland?** **Yes** 3 **No** _____
Hydric Soil Present?	Yes 3	No _____	
Wetland Hydrology Present?	Yes 3	No _____	

Remarks:
Cowardin Code:PEM
HGM:Depression
WT:RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

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

- 3 Surface Water (A1)
- 3 High Water Table (A2)
- 3 Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- 3 Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ 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)
- 3 FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes 3	No _____	Depth (inches): 2"
Water Table Present?	Yes 3	No _____	Depth (inches): 0"
Saturation Present? (includes capillary fringe)	Yes 3	No _____	Depth (inches): 0"

Wetland Hydrology Present? **Yes** 3 **No** _____

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-N20 PEM

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Sapling/Shrub Stratum (Plot size: 15')			
1. Sambucus nigra	20	3	FAC
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		

Herb Stratum (Plot size: 5')			
1. Eleocharis palustris	50	3	OBL
2. Scirpus atrovirens	10	3	OBL
3. Juncus effusus	10	3	FACW
4. Andropogon virginicus	10	3	FACU
5. Impatiens capensis	10	3	FACW
6. Vernonia noveboracensis	10	3	FACW
7. Persicaria sagittata	10	3	OBL
8. Persicaria pensylvanica	5		FACW
9. Typha angustifolia	5		OBL
10. Galium asprellum	5		OBL
11.			
	125 = Total Cover		
50% of total cover: 62.5	20% of total cover: 25		

Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 7 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 88% (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
- 3 2 - Dominance Test is >50%
- ___ 3 - Prevalence Index is ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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 3 No ___

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

SOIL

Sampling Point: W-N20 PEM

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2"	10YR 3/1						Mk	
2-12"	2.5Y 5/2	75	7.5YR 5/8	25	C	PL/M	SiCL	Prominent redox concentrations

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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)
- 3 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[3]:

- ___ 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)

[3]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** 3 **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PPP City/County: Cambria Sampling Date: 07/19/2014

Applicant/Owner: Sunoco State: PA Sampling Point: W-O35

Investigator(s): Jason McGuirk, Deanna Quinn, Rebecca Kipp Section, Township, Range: Vinco

Landform (hillslope, terrace, etc.): side slope Local relief (concave, convex, none): concave Slope (%): 0-3%

Subregion (LRR or MLRA): LRRN Lat: 40.415613° Long: -78.860633° Datum: NAD 83

Soil Map Unit Name: Brinkerton soils, 3 to 8 percent slopes (BtB) 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 _____	**Is the Sampled Area within a Wetland?** **Yes ✔ No _____**
Hydric Soil Present?	Yes ✔	No _____	
Wetland Hydrology Present?	Yes ✔	No _____	

Remarks:
Cowardin Code:PSS
HGM: Riverine
WT: RPWWD

HYDROLOGY

Wetland Hydrology Indicators:

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

- ✔ Surface Water (A1)
- ✔ High Water Table (A2)
- ✔ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ✔ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ 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)

Field Observations:

Surface Water Present?	Yes ✔	No _____	Depth (inches): 4"
Water Table Present?	Yes ✔	No _____	Depth (inches): 0"
Saturation Present? (includes capillary fringe)	Yes ✔	No _____	Depth (inches): 0"

Wetland Hydrology Present? **Yes ✔ No _____**

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-O35

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Sapling/Shrub Stratum (Plot size: 15')			
1. Salix nigra	35		OBL
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	35 = Total Cover		
50% of total cover: 17.5	20% of total cover: 7		

Herb Stratum (Plot size: 5')			
1. Typha latifolia	25	✔	OBL
2. Impatiens sp.	20	✔	FACW
3. Solidago rugosa	20	✔	FAC
4. Galium aparine	15		FACU
5. Eutrochium maculatum	10		FACW
6. Carex lurida	10		OBL
7. Leersia oryzoides	7		OBL
8. Eupatorium perfoliatum	5		FACW
9.			
10.			
11.			
	112 = Total Cover		
50% of total cover: 56	20% of total cover: 22.4		

Woody Vine Stratum (Plot size: 15')			
1.			
2.			
3.			
4.			
5.			
	0 = Total Cover		
50% of total cover: 0	20% of total cover: 0		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (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 ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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.)

SOIL Sampling Point: W-O35

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-12"	10YR 4/1	85	7.5YR 4/6	15	C	M	SiL	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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[3]:

- ___ 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)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Course Fragments

Depth (inches): 8"

Hydric Soil Present? **Yes** ✔ **No** ___

Remarks:

APPENDIX B
WETLAND PHOTOGRAPHS

Photograph Number:	214	**Feature Name:**	W-N20	**Date:**	07/21/2014
Direction:	W	**Plant Community:**	PEM	**Remarks:**	N/A

Photograph Number:	215	**Feature Name:**	W-N19	**Date:**	07/21/2014
Direction:	SW	**Plant Community:**	PSS	**Remarks:**	N/A

Photograph Number:	216	**Feature Name:**	W-O35	**Date:**	07/19/2014
Direction:	N	**Plant Community:**	PSS	**Remarks:**	N/A

Photograph Number:	217	**Feature Name:**	W-O34	**Date:**	07/19/2014
Direction:	S	**Plant Community:**	PEM	**Remarks:**	N/A

APPENDIX C
STREAM DATA SHEETS

Tetra Tech Stream Data Sheet

Surveyors: A. Grech, A. Stott Date: 07/21/2014 Resource ID Number: S-N35
Project: PPP State: PA County: Cambria
Photo Number (s): _____ Canopy Cover: 20 % Location: 40.415643°,-78.860973°

Flow Direction: S **Bank Width:** 2 Feet **Water Width:** 1.5 Feet
High Water Depth: 6 Inches **Water Depth:** 3.00 Inches **Turbidity:** low
Flow Stage: moderate
Flow Regime: [ ] Perennial [✔] Intermittent [ ] Ephemeral [ ] Flowing Ditch [ ] Dry/Stagnant Ditch

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

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

Substrate:
[ ] Bedrock ___%
[✔] Boulder 10 %
[✔] Cobble/Gravel 30 %
[✔] Sand 30 %
[✔] Silt/Clay 30 %
[ ] Organic ___%

Bank Substrate:
Height: Left 2' Right 2'

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

Floodplain Width:

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

Dominant Vegetation:
[ ] Forested
Species: Pinus sylvestris
[ ] Shrub
Species: _____
[✔] Herbaceous
Species: Impatiens capensis , Eleocharis palustris , Pastinaca sativa

Wildlife Observed/Notes:
Stream confluences with S-O44

Sketch:
See Attached Figure.

Tetra Tech Stream Data Sheet

Surveyors: J. McGuirk, D. Quinn Date: 07/19/2014 Resource ID Number: S-O44
Project: PPP State: PA County: Cambria
Photo Number (s): _____ Canopy Cover: 20 % Location: 40.41561, -78.860903

Flow Direction: W **Bank Width:** 5 Feet **Water Width:** 4 Feet
High Water Depth: 2 Feet **Water Depth:** 10.00 Inches **Turbidity:** Low
Flow Stage: Moderate
Flow Regime: [✔] Perennial [ ] Intermittent [ ] Ephemeral [ ] Flowing Ditch [ ] Dry/Stagnant Ditch

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

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

Substrate:
[ ] Bedrock ___%
[✔] Boulder 5 %
[✔] Cobble/Gravel 50 %
[✔] Sand 35 %
[✔] Silt/Clay 5 %
[✔] Organic 5 %

Bank Substrate:
Height: Left 2' Right 2'

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

Floodplain Width:

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

Dominant Vegetation:
[ ] Forested
Species: _____
[ ] Shrub
Species: _____
[✔] Herbaceous
Species: Securigera varia, Dipsacus fullonum

Wildlife Observed/Notes:

Sketch:
See Attached Figure.

Tetra Tech Stream Data Sheet

Surveyors: J. McGuirk, D. Quinn Date: 07/19/2014 Resource ID Number: S-O43
Project: PPP State: PA County: Cambria
Photo Number (s): _____ Canopy Cover: 10 % Location: 40.415598, -78.860283

Flow Direction: N **Bank Width:** 1 Feet **Water Width:** 6 Inches
High Water Depth: 5 Inches **Water Depth:** 1.00 Inches **Turbidity:** Low
Flow Stage: Low
Flow Regime: [ ] Perennial [✔] Intermittent [ ] Ephemeral [ ] Flowing Ditch [ ] Dry/Stagnant Ditch

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

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

Substrate:
[ ] Bedrock ___%
[ ] Boulder ___%
[✔] Cobble/Gravel 35 %
[✔] Sand 10 %
[✔] Silt/Clay 30 %
[✔] Organic 25 %

Bank Substrate:
Height: Left 5" Right 5"

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

Floodplain Width:

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

Dominant Vegetation:
[ ] Forested
Species: _____
[ ] Shrub
Species: _____
[✔] Herbaceous
Species: Phalaris arundinacea, Eupatorium perfoliatum, Solidago sp.

Wildlife Observed/Notes:

Sketch:
See Attached Figure.

APPENDIX D
STREAM PHOTOGRAPHS

Photograph Number:	606	**Feature Name:**	S-N36	**Date:**	07/19/2014
Direction:	S, Downstream	**Flow Regime:**	Perennial	**Remarks:**	N/A

Photograph Number:	607	**Feature Name:**	S-N35	**Date:**	07/21/2014
Direction:	S, Downstream	**Flow Regime:**	Intermittent	**Remarks:**	N/A

Photograph Number:	608	**Feature Name:**	S-O44	**Date:**	07/21/2014
Direction:	SW, Downstream	**Flow Regime:**	Perennial	**Remarks:**	N/A

Photograph Number:	609	**Feature Name:**	S-O43	**Date:**	07/19/2014
Direction:	NW, Downstream	**Flow Regime:**	Intermittent	**Remarks:**	N/A

APPENDIX E

HYDRIC SOILS LIST

Hydric Soils List
Westmoreland County, Pennsylvania

Map Unit Symbol	Map Unit Name	Component Name and Phase	Component Percent	Landforms
AlB	Albrights silt loam, 0 to 8 percent slopes, very stony	Brinkerton	5	draws
AlD	Albrights silt loam, 8 to 25 percent slopes, very stony	Brinkerton	5	hills
At	Atkins silt loam, 0 to 3 percent slopes, frequently flooded	Atkins	85	flood plains
BeB	Bethesda very channery silt loam, 0 to 8 percent slopes	Wet spots	1	depressions
BeD	Bethesda very channery silt loam, 8 to 25 percent slopes	Wet spots	1	depressions
BkA	Brinkerton silt loam, 0 to 3 percent slopes	Brinkerton	85	draws
BkB	Brinkerton silt loam, 3 to 8 percent slopes	Brinkerton	80	hills
BuB	Buchanan loam, 0 to 8 percent slopes, extremely stony	Andover	5	mountain slopes
CaB	Cavode silt loam, 3 to 8 percent slopes	Brinkerton	5	hills
CaC	Cavode silt loam, 8 to 15 percent slopes	Brinkerton	5	hills
CeB	Cavode silt loam, 0 to 8 percent slopes, very stony	Brinkerton	5	draws
CeD	Cavode silt loam, 8 to 25 percent slopes, very stony	Brinkerton	5	draws

CoB	Cookport loam, 0 to 8 percent slopes, very stony	Nolo	5	depressions
CrB	Craigsville-Buchanan complex, 0 to 8 percent slopes, extremely stony	Andover	2	mountain slopes
ErB	Ernest silt loam, 3 to 8 percent slopes	Brinkerton	5	hills
ErC	Ernest silt loam, 8 to 15 percent slopes	Brinkerton	5	draws
FaB	Fairpoint very channery silt loam, 0 to 8 percent slopes	Wet spots	1	depressions
FaC	Fairpoint very channery silt loam, 8 to 15 percent slopes	Wet spots	1	depressions
FaD	Fairpoint very channery silt loam, 15 to 25 percent slopes	Wet spots	1	depressions
GxA	Ginat silt loam, 0 to 2 percent slopes	Ginat	70	terraces
Ho	Holly silt loam, 0 to 2 percent slopes	Holly	75	flood plains
Ln	Lindside silt loam, 0 to 2 percent slopes	Melvin	5	flood plains
Lo	Lobdell silt loam, 0 to 2 percent slopes	Holly	5	flood plains
Mn	Melvin and Newark silt loams, 0 to 2 percent slopes	Melvin	45	flood plains
MoA	Monongahela silt loam, 0 to 3 percent slopes	Purdy	5	terraces
MoB	Monongahela silt loam, 3 to 8 percent slopes	Purdy	5	terraces
MoC	Monongahela silt loam, 8 to 15 percent slopes	Purdy	5	terraces
NoB	Nolo loam, 0 to 8 percent slopes, very stony	Nolo	80	depressions
Pa	Palms muck, 0 to 3 percent slopes	Palms	90	depressions

Hydric Soil List – Westmoreland County, Pennsylvania

Pa	Palms muck, 0 to 3 percent slopes	Nolo	5	depressions
Ph	Philo loam, 0 to 2 percent slopes	Atkins	5	flood plains
Pu	Purdy silt loam, 0 to 2 percent slopes	Purdy	75	terraces
ThA	Thorndale silt loam, 0 to 3 percent slopes	Thorndale	90	depressions
ThB	Thorndale silt loam, 3 to 8 percent slopes	Thorndale	90	drainageways
TyA	Tyler silt loam, 0 to 2 percent slopes	Purdy	5	terraces
WeA	Weinbach silt loam, 0 to 2 percent slopes	Ginat	5	terraces
WrB	Wharton silt loam, 3 to 8 percent slopes	Cavode	8	hills
WrB	Wharton silt loam, 3 to 8 percent slopes	Brinkerton	5	depressions
WsB	Wharton silt loam, 0 to 8 percent slopes, very stony	Brinkerton	5	draws
WsD	Wharton silt loam, 8 to 25 percent slopes, very stony	Brinkerton	5	draws
Modified from Hydric Soils of the United States (NRCS 2014)				

Hydric Soils List
Indiana County, Pennsylvania

Map Unit Symbol	Map Unit Name	Component Name and Phase	Component Percent	Landforms
ArA	Armagh silt loam, 0 to 3 percent slopes	Armagh	90	hills
ArB	Armagh silt loam, 3 to 8 percent slopes	Armagh	90	hillslopes
AtA	Atkins-Philo complex, 0 to 2 percent slopes, frequently flooded	Atkins	40	flood plains
AtA	Atkins-Philo complex, 0 to 2 percent slopes, frequently flooded	Brinkerton	10	draws
BeB	Bethesda very channery silt loam, 0 to 8 percent slopes	Wet spots	1	depressions
BeD	Bethesda very channery silt loam, 8 to 25 percent slopes	Wet spots	1	depressions
BhB	Bethesda very channery silt loam, 0 to 8 percent slopes, very stony	Wet spots	1	depressions
BkA	Brinkerton silt loam, 0 to 3 percent slopes	Brinkerton	85	hills
BkB	Brinkerton silt loam, 3 to 8 percent slopes	Brinkerton	80	hills
BsB	Brinkerton silt loam, 0 to 8 percent slopes, very stony	Brinkerton	90	draws
BuB	Buchanan loam, 3 to 8 percent slopes	Andover	5	mountain slopes
BuC	Buchanan loam, 8 to 15 percent slopes	Andover	5	mountain slopes

BuD	Buchanan loam, 15 to 25 percent slopes	Andover	5	mountain slopes
BxB	Buchanan loam, 0 to 8 percent slopes, extremely stony	Andover	5	mountain slopes
CaA	Cavode silt loam, 0 to 3 percent slopes	Brinkerton	5	draws
CaB	Cavode silt loam, 3 to 8 percent slopes	Brinkerton	5	hills
CaC	Cavode silt loam, 8 to 15 percent slopes	Brinkerton	5	draws
CdB	Cavode silt loam, 0 to 8 percent slopes, very stony	Brinkerton	5	draws
CdD	Cavode silt loam, 8 to 25 percent slopes, very stony	Brinkerton	5	draws
CoA	Cookport loam, 0 to 3 percent slopes	Nolo	5	mountains
CoB	Cookport loam, 3 to 8 percent slopes	Nolo	5	mountains
CoC	Cookport loam, 8 to 15 percent slopes	Nolo	5	mountains
CpB	Cookport loam, 0 to 8 percent slopes, very stony	Nolo	5	depressions
ErA	Ernest silt loam, 0 to 3 percent slopes	Brinkerton	10	hills
ErB	Ernest silt loam, 3 to 8 percent slopes	Brinkerton	5	draws
ErC	Ernest silt loam, 8 to 15 percent slopes	Brinkerton	5	hills
EsB	Ernest silt loam, 0 to 8 percent slopes, very stony	Brinkerton	5	draws
EsD	Ernest silt loam, 8 to 25 percent slopes, very stony	Brinkerton	5	draws
FaB	Fairpoint very channery silt loam, 0 to 8 percent slopes	Wet spots	1	depressions

HoA	Holly silt loam, 0 to 2 percent slopes, frequently flooded	Holly	75	flood plains
LoA	Lobdell silt loam, 0 to 2 percent slopes, occasionally flooded	Holly	5	flood plains
NoA	Nolo silt loam, 0 to 3 percent slopes	Nolo	85	depressions
NoB	Nolo silt loam, 3 to 8 percent slopes	Nolo	90	mountains
PhA	Philo silt loam, 0 to 2 percent slopes, occasionally flooded	Atkins	10	flood plains
PoA	Pope silt loam, 0 to 2 percent slopes, occasionally flooded	Atkins	10	flood plains
PuA	Purdy silt loam, 0 to 2 percent slopes	Purdy	75	terraces
TyA	Tyler silt loam, 0 to 2 percent slopes	Purdy	5	terraces
TyB	Tyler silt loam, 2 to 6 percent slopes	Purdy	5	terraces
WhA	Wharton silt loam, 0 to 3 percent slopes	Cavode	5	hills
WhA	Wharton silt loam, 0 to 3 percent slopes	Brinkerton	5	depressions
WhB	Wharton silt loam, 3 to 8 percent slopes	Cavode	8	hills
WhB	Wharton silt loam, 3 to 8 percent slopes	Brinkerton	5	depressions
Modified from Hydric Soils of the United States (NRCS 2014)				

Hydric Soils List
Cambria County, Pennsylvania

Map Unit Symbol	Map Unit Name	Component Name and Phase	Component Percent	Landforms
AbB	Albrights silt loam, 3 to 8 percent slopes	Brinkerton	5	hillslopes
AbC	Albrights silt loam, 8 to 15 percent slopes	Brinkerton	5	hillslopes
AmB	Armagh silt loam, 0 to 8 percent slopes	Armagh	85	depressions
AmB	Armagh silt loam, 0 to 8 percent slopes	Armagh, very stony	5	depressions
At	Atkins silt loam, 0 to 3 percent slopes, frequently flooded	Atkins	85	flood plains
BmB	Blairton silt loam, 3 to 8 percent slopes	Brinkerton	5	hills
BmC	Blairton silt loam, 8 to 15 percent slopes	Brinkerton	5	hills
BnB	Blairton very stony silt loam, 3 to 8 percent slopes	Brinkerton	85	depressions
BpC	Blairton-Berks channery silt loams, 8 to 15 percent slopes	Brinkerton	5	depressions
BtB	Brinkerton soils, 3 to 8 percent slopes	Brinkerton, wooded	66	hillslopes
BtB	Brinkerton soils, 3 to 8 percent slopes	Brinkerton, nonwooded	19	hillslopes
BvB	Brinkerton very stony silt loam, 0 to 8 percent slopes	Brinkerton	90	hills

CaA	Cavode silt loam, 0 to 3 percent slopes	Brinkerton	5	hills
CaB	Cavode silt loam, 3 to 8 percent slopes	Brinkerton	5	hills
CaC	Cavode silt loam, 8 to 15 percent slopes	Brinkerton	5	draws
CbB	Cavode very stony silt loam, 0 to 8 percent slopes	Brinkerton	5	draws
CeA	Cookport and Ernest soils, 0 to 3 percent slopes	Brinkerton	10	depressions
CeB	Cookport and Ernest soils, 3 to 8 percent slopes	Brinkerton	10	depressions
CeC	Cookport and Ernest soils, 8 to 15 percent slopes	Brinkerton	5	depressions
CeD	Cookport and Ernest soils, 15 to 25 percent slopes	Brinkerton	5	depressions
CvB	Cookport and Ernest very stony soils, 0 to 8 percent slopes	Brinkerton	10	depressions
CvD	Cookport and Ernest very stony soils, 8 to 25 percent slopes	Brinkerton	5	depressions
Dp	Dumps, industrial wastes	Wet spots	1	depressions
Du	Dumps, mine	Wet spots	1	depressions
LtB	Leetonia very stony loamy sand, 3 to 8 percent slopes	Nolo	2	depressions
NoB	Nolo very stony sandy loam, 0 to 8 percent slopes	Nolo	90	depressions
Ph	Philo silt loam, 0 to 3 percent slopes, occasionally flooded	Atkins	10	flood plains
Po	Pope silt loam	Atkins	6	flood plains
UDC	Udorthents, strip mine, sloping	Wet spots	1	depressions

URB	Urban land-Udorthents complex, gently sloping	Wet spots	1	depressions
URC	Urban land-Udorthents complex, sloping	Wet spots	1	depressions
WaB	Wharton silt loam, 3 to 8 percent slopes	Brinkerton	2	sloughs
WaC	Wharton silt loam, 8 to 15 percent slopes	Brinkerton	2	hills
Modified from Hydric Soils of the United States (NRCS 2014)				

Aquatic Resources Report
Goldfinch Lane Reroute
Cambria County, PA

January 2019

Prepared for:

Sunoco Pipeline, L.P.
535 Fritztown Road
Sinking Spring, PA 19608

Prepared by:

Tetra Tech, Inc.
301 Ellicott Street
Buffalo, NY 14203
(716) 849-9419
Fax (716) 849-9420

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ATTACHMENTS

Attachment A – Figures
Attachment B – Wetland Photographic Log
Attachment C – Waterbody Photographic Log
Attachment D – Wetland Data Forms
Attachment E – Stream Data Forms

Aquatic Resources Report
Goldfinch Lane Reroute
Cambria County, Pennsylvania

1.0 Introduction

Tetra Tech, Inc. (Tetra Tech) was contracted by Sunoco Pipeline L.P. (SPLP) to perform a wetland assessment of an approximately 24.1-acre area that crosses Goldfinch Lane between Benshoff Hill Road (SR 3039) and William Penn Avenue (Route 271), in Jackson Township, Pennsylvania.

The purpose of this investigation was to determine the presence and extent of resources within the survey area that meet the criteria for federal wetlands designation according to the United States Army Corps of Engineers (USACE) guidelines, and are potentially jurisdictional and regulated under Section 404 of the Clean Water Act (CWA). Background review information such as U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) mapped soils and presence of U.S. Fish and Wildlife Service National Wetlands Inventory (USFWS NWI) features are summarized within Survey Methods below.

The following report summarizes the characteristics of delineated resources and report attachments include: Attachment A – Figures, Attachment B – Wetland Photographic Log, Attachment C – Waterbody Photographic Log, Attachment D – Wetland Data Forms, and Attachment E – Stream Data Forms.

2.0 Survey Methods

2.1 Background Research

Prior to conducting fieldwork, Tetra Tech reviewed existing information for the survey area, including:

- United States Geological Survey (USGS) 7.5-minute series topographic quadrangle maps for the survey areas (Vintondale and Nanty Glo, PA 2016).
- Soil survey maps, descriptions, and lists, to determine presence and extent of hydric and upland soils (USDA NRCS 1965), Web Soil Survey database for: Cambria County, PA.
- NWI geospatial data available from the USFWS for the survey area (USFWS, Wetlands Mapper, data downloaded December 2018); and,
- Aerial photographs to identify drainage and other hydrologic features (Environmental Sciences Research Institute, Inc. [ESRI] online mapping services, available at: services.arcgisonline.com/arcgis/service).

2.2 On-Site Delineation

Following the review of background information, two wetland scientists performed a field survey on December 5, 2018. The survey consisted of walk-through inspection of the survey area to identify topographic, drainage, and vegetation features that would indicate the potential for a wetland determination. Potential wetlands were further evaluated by collecting soil, vegetation, and hydrology data at upland and wetland sample locations at suspected wetland boundaries. Sample plot data were recorded on Eastern Mountains and Piedmont Region Wetland Determination Data Forms provided within the regional supplement.

The survey area was evaluated for the presence and extent of wetlands using the routine, Level-2 determination method described in the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and *Regional Supplement to the Corps of Engineers Wetland Delineation Manual:*

Eastern Mountains and Piedmont Region (Version 2.0) (USACE 2012). Wetlands identified and delineated were subsequently classified in accordance with the Classification of Wetlands and Deepwater Habitats of the United States (Cowardin *et al*. 1979). Classifications were restricted to palustrine emergent (PEM), palustrine scrub-shrub (PSS), and palustrine forested (PFO). Wetland boundaries were also flagged and marked in the field and each wetland area was photographed.

Each wetland and waterbody was further evaluated to characterize the hydrological connection to adjacent upland, wetland, and waterbody regions occurring in proximity to the survey area investigated. Specific methods for characterizing and evaluating the soils, vegetation, and hydrologic indicators are described below.

Vegetation: Dominant plant species in each major vegetation stratum (tree, sapling/shrub, herbaceous, and woody vine) were identified within 30-foot radius sample plots. The wetland indicator status of each species was assigned according to the *Eastern Mountains and Piedmont Regional Wetland Plant List* (Lichvar *et al.* 2016). Hydrophytic vegetation was determined to be present where more than 50 percent of the dominant species from all vegetation strata were classified as facultative (FAC), facultative wetland (FACW), or obligate wetland species (OBL). Other tests used to evaluate the dominance of hydrophytic species included the Dominance Test and the Prevalence Index (USACE 2012).

Soils: A soil auger was used at each sample plot to extract a core sample to a depth where either hydric indicators were observed, approximately 20 inches, or until rocky substrate resulted in auger refusal. The soils were characterized by determining the color and texture of each soil horizon. Soil matrix and mottle colors were identified using Munsell Soil Color Charts (Munsell Color 2012). Soils were considered hydric if they exhibited one (1) or more of the following indicators, including, but not limited to: histosols, histic epipedons, black histic, hydrogen sulfide, stratified layers, 2 cm muck, depletion below dark surface, thick dark surface, sandy mucky mineral, sandy gleyed matrix, sandy redox, stripped matrix, dark surface, polyvalue below surface, thin dark surface, loamy gleyed matrix, depleted matrix, redox dark surface, depleted dark surface, redox depressions, iron-manganese masses, umbric surface, Piedmont floodplain soils, and red parent material. These indicators support a hydric soil determination, although secondary or additional indicators may also be present.

Hydrology: Each sample plot was examined for evidence of wetland hydrology. Indicators of wetland hydrology include: surface water, high water table, saturations, water marks, sediment deposits, drift deposits, algal mat or crust, iron deposits, visible inundation on aerials, water stained leaves, aquatic fauna, true aquatic plants, hydrogen sulfide odor, oxidized rhizospheres on living roots, presence of reduced iron, recent iron reduction in tilled soils, or a thin muck surface. Presence of standing water or depth to soil saturation was recorded at each sampling location.

2.3 Waterbody Identification

Prior to field surveys, known waterbodies in the survey area were identified on USGS topographic quadrangle maps. During the field investigation, a qualified biologist examined the entire field survey area for mapped and unmapped waterbodies. Waterbodies identified included perennial, intermittent, and ephemeral streams and ponds. Data recorded included stream name, associated wetlands, flow regime (perennial, intermittent, or ephemeral), direction of flow, water width, bank-to-bank width, bank height and slope, water depth, bottom and bank substrates, observed water quality, channel meander, and adjacent vegetation type. In addition, indicators of aquatic habitat, wildlife use, and soil erosion potential were recorded.

2.4 GPS Mapping

Wetland and waterbody boundaries/alignments were flagged at regular intervals to accurately represent the boundary between the aquatic resource and the adjacent upland. Flag points were then land surveyed using a Trimble, Inc. (Sunnyvale, California) Geo XH Global Positioning System (GPS). Each point used an identification code and was numbered consecutively to facilitate the desktop mapping process. Flag points were differentially corrected in accordance with Trimble, Inc. sub-meter accuracy standards. All data was recorded in the WGS 84 coordinate zone and then projected into NAD 83 State Plane Pennsylvania South using ArcGIS 10.2.

Attribute data for all flag points was recorded, including the following information:

- Unique number or name;
- NAD 1983 coordinates;
- Date;
- Time;
- Number of positions recorded;
- Max value position dilution of precision (PDOP); and,
- Horizontal accuracy (in meters)

GPS data were differentially corrected using Pathfinder Office 5.60 software (Trimble Inc., Sunnyvale, California) and commercial base station control points. Corrected flag points were then imported into ArcView 10.2 (ESRI; Redlands, CA) Geographic Information System (GIS) mapping software where points were connected in consecutive order and according to surveyor notes. Wetland boundaries were left “open” when the wetland extended beyond the survey boundaries and were “closed” when contained entirely within the survey boundaries. Stream alignments were connected in a similar manner and designated as “line” data. A geo-referenced wetland delineation boundary suitable for overlay onto themed base layers was created using ArcView 10.2 GIS software. The same GIS software was also used as an analytical tool, providing acreages of the delineated wetlands and coordinate location of the centroids of the polygons.

3.0 Survey Results

3.1 Background Data Review

General Area Description
Land use within the survey boundary is rural and consists of sparsely-concentrated residential homes, mowed fields, and woodlots, with several small paved roads and gravel driveways. Land use in the general vicinity of the survey area is the same, but also includes some cropland areas. Attachment A, Figure 1 provides an aerial basemap of the survey area.

Soils
A review of published and publicly available soils data for the survey area indicates that thirteen (13) soils series are mapped within the survey boundary (Attachment A, Figure 1). Mapped soil series are summarized in Table 1 below.

Table 1. Mapped Soil Types on Goldfinch Lane Reroute, Cambria County, Pennsylvania

Soil Symbol	Soil Name and Brief Description[1]	Hydric Soil Classification
BtB	Brinkerton soils, 3 to 8 percent slopes	Hydric
CeB	Cookport and Ernest soils, 3 to 8 percent slopes	Partial
CeC	Cookport and Ernest soils, 8 to 15 percent slopes	Partial
GnB	Gilpin silt loam, 3 to 8 percent slopes	Not hydric
GpD	Gilpin channery silt loam, 8 to 25 percent slopes, extremely stony	Not hydric
GtC	Gilpin-Rayne silt loams, 8 to 15 percent slopes	Not hydric
GtD	Gilpin-Rayne silt loams, 15 to 25 percent slopes	Not hydric
GWF	Gilpin-Weikert channery silt loams, 27 to 70 percent slopes	Not hydric
HaD	Hazleton channery loam, 15 to 25 percent slopes	Not hydric
LaB	Laidig loam, 3 to 8 percent slopes	Not hydric
LDF	Laidig soils, 25 to 70 percent slopes	Not hydric
WgC	Wharton-Gilpin complex, 8 to 15 percent slopes	Not hydric
WgD	Wharton-Gilpin complex, 15 to 25 percent slopes	Not hydric

[1]USDA, NRCS, Soil Series Descriptions for Cambria County, PA, 2018.

Mapped Wetlands

Four (4) USFWS mapped NWI features were identified in the survey area, including two (2) ponds and two (2) streams; no wetlands were identified. The first pond is a 0.45-acre freshwater pond located immediately south of Benshoff Hill Road and east of Goldfinch Lane. The second pond is a 0.57-acre freshwater pond located approximately 700 ft. south from the end of Creekside Drive, in the eastern portion of the survey area. Both ponds are classified as PUBH (palustrine, unconsolidated bottom, permanently flooded). The first stream is Hinckston Run (R5UBH), which crosses the eastern portion of the survey area. The second stream (R4SBC) is an unnamed tributary to Hinckston Run, which joins it from the northeast in the eastern portion of the survey area.

Mapped Waterbodies

The USGS 7.5-minute series topographic quadrangle map (Nanty Glo, PA, 1984) depict the second pond, as well as Hinckston Run and its unnamed tributary identified in NWI mapping; no other features were identified.

3.2 Delineated Aquatic Resources

Nine (9) wetlands and seven (7) streams were identified during the field survey. Wetlands W1r, W2r, W3r, and W4r were identified as palustrine emergent (PEM); Wetlands W5r, W6r, W7r, W8r, and W9r were identified as palustrine scrub-shrub (PSS). These newly delineated features are summarized below in Table 2. Photologs of each of these wetlands are provided in Attachment B, and data forms for each of these wetlands are provided in Attachment D.

Table 2. Wetlands Identified During Field Survey at Goldfinch Lane Reroute Site

Wetland ID	Cover Class[1]	Hydrology Indicator[2]	Hydric Vegetation Indicator[2, 3]	Hydric Soils Indicator[2]	Figure 2 Sheet	Photo Numbers	Description
W1r	PEM	A2, A3, C1	DT	A4, F3	1	1, 2	Large emergent wetland west of Goldfinch Lane
W2r	PEM	A2, A3, C1	DT	F3	2	3, 4	Emergent wetland east of Goldfinch Ln., associated with Stream S1r.

Wetland ID	Cover Class[1]	Hydrology Indicator[2]	Hydric Vegetation Indicator[2, 3]	Hydric Soils Indicator[2]	Figure 2 Sheet	Photo Numbers	Description
W3r	PEM	A2, A3, B10, D2	DT	F3	4	5, 6	Small depression wetland at the edge of a residential property
W4r	PEM	A2, A3, B10, D2	DT	F3	4	7, 8	Small linear emergent wetland adjacent to wetland W3r, likely associated with drainage of pond beyond the survey area to north
W5r	PSS	A2, A3, C1, C4	DT	F3	4	9, 10	Scrub-shrub wetland next between a residential property and contiguous emergent wetland to north
W6r	PSS	A2, A3, C1, D4	DT	A4, F3	4	11, 12	Scrub-shrub wetland in the eastern portion of the survey area between the confluence of streams S3r and S4r
W7r	PSS	A3, B1, B10, C1, D2	DT	F3	4	13, 14	Scrub-shrub wetland in the eastern portion of the survey area between streams S4r, S5r, and S6r
W8r	PSS	A2, A3, B10, D4	DT	F3	4	15, 16	Scrub-shrub wetland north of stream S6r and extending toward William Penn Ave. to the east
W9r	PSS	A3, B10, D2, D4	DT	F3	5	17, 18	Large scrub-shrub wetland associated with stream S7r, near the eastern portion of the survey area at Route 271

[1]Field classification based on Cowardin et al. 1979.
[2]Indicator codes from Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (V 2.0).
[3]RT = Rapid Test, DT = Dominance Test, PI = Prevalence Index.

Of the seven (7) streams identified, three (streams S1r, S4r, and S7r) were identified as perennial, and four streams (streams S2r, S3r, S5r, S6r) were identified as intermittent; no ephemeral streams were identified. A brief summary of the streams identified is provided in Table 3 below, photos of each stream are provided in Attachment C, and stream data forms are provided in Attachment D.

Table 3. Waterbodies Identified During Field Survey at Goldfinch Lane Reroute Site

Stream ID	Flow regime	Water Depth (in.)	Bankfull Width (ft.)	Figure 2 Sheet	Photo Numbers	Description
S1r	Perennial	3	3	2	1, 2	Perennial stream that originates south of the survey area and continues off-site to the north
S2r	Intermittent	1	1	3	3, 4	Small intermittent stream that originates within the survey area and flows northeast
S3r	Intermittent	2	10	4	5, 6	Intermittent stream that originates in the continuation of wetland W5r (outside of survey area) and flows northeast to its confluence with stream S4r
S4r	Perennial	24	30	4	7, 8	East-flowing perennial stream that drains the area north of the survey area
S5r	Intermittent	1	2	4	9, 10	Small intermittent drainage of wetland W7r that has its confluence with stream S4r just south of the survey area
S6r	Intermittent	1	10	4	11, 12	Intermittent stream that originates in wetland W8r and flows west past wetland W7r, to its confluence with stream S4r
S7r	Perennial	6	10	5	13, 14	South-flowing perennial stream that drains wetland W9r and continues out of the survey area to the west

*Note that widths and depths are averages based on the assessed limits of the features

4.0 Summary

Tetra Tech completed an aquatic resource survey on an approximately 24.1-acre area near Goldfinch Ln., between Benshoff Hill Road (SR 3039) and William Penn Avenue (Route 271), in Jackson Township, Cambria County, Pennsylvania. Tetra Tech identified nine (9) wetlands and seven (7) streams that meet USACE criteria for aquatic resources. Attachment A provides figures regarding the site location and geometry and alignments of the delineated features. Attachments B and C provide photologs for each of the new resources delineated within the survey area, and Attachments D and E provide data forms for each of the features.

5.0 References

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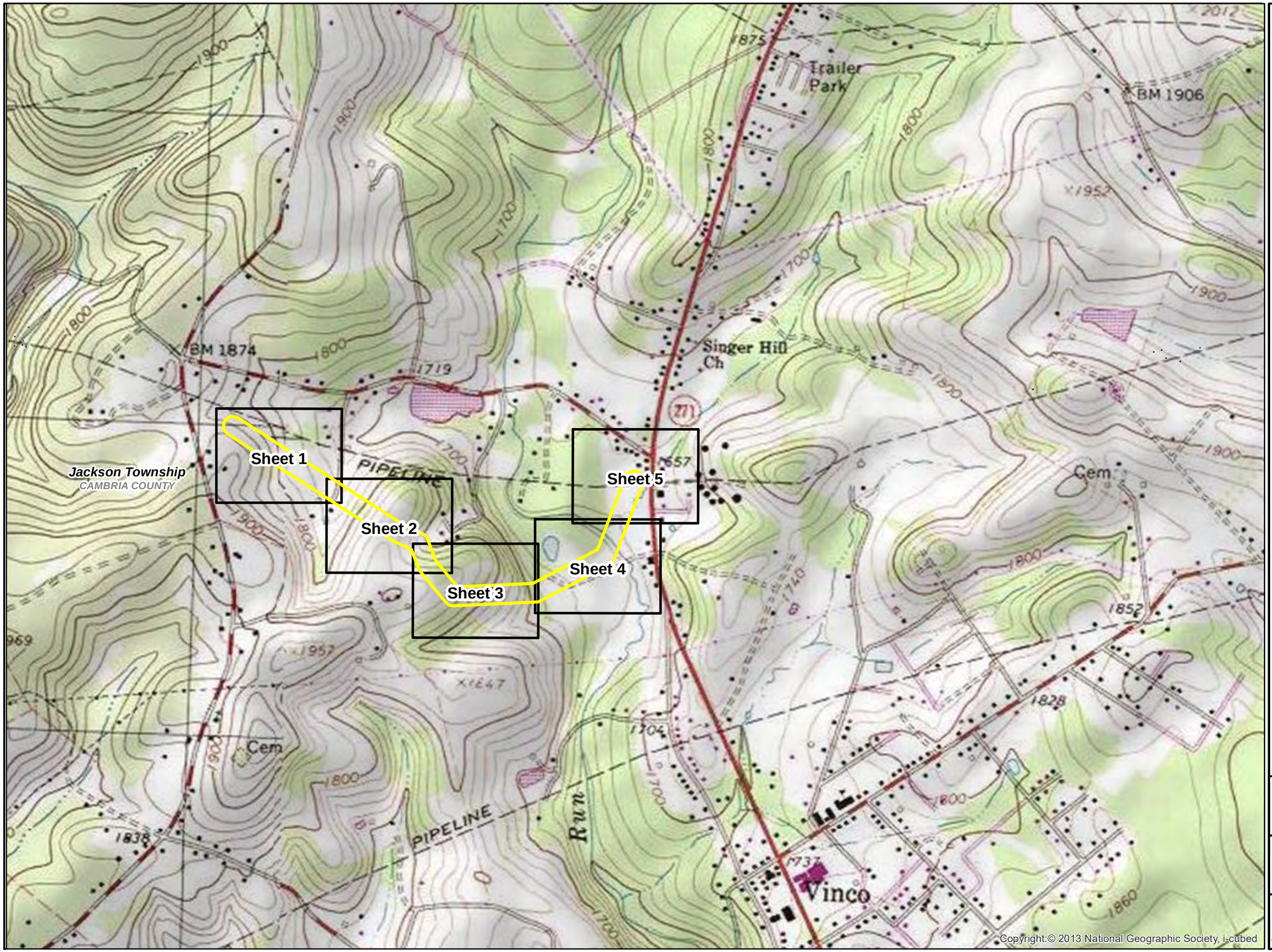
ATTACHMENT A

FIGURES

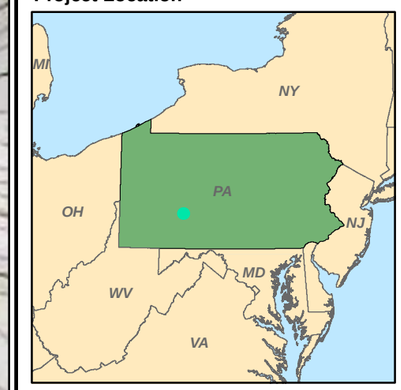


Legend

200-feet Survey Corridor

SheetBoundary

Project Location



N

0 500 1,000 2,000

1 inch = 1,000 feet

Figure 1. NWI Features and Soils on the Sunoco Pennsylvania Pipeline Project, Cambria County, PA. Sheet Key

Prepared By:	Date:
TETRA TECH	01/2019

Base Map; ESRI US topo maps

Coordinate System: NAD 83 Stateplane, PA South, Feet

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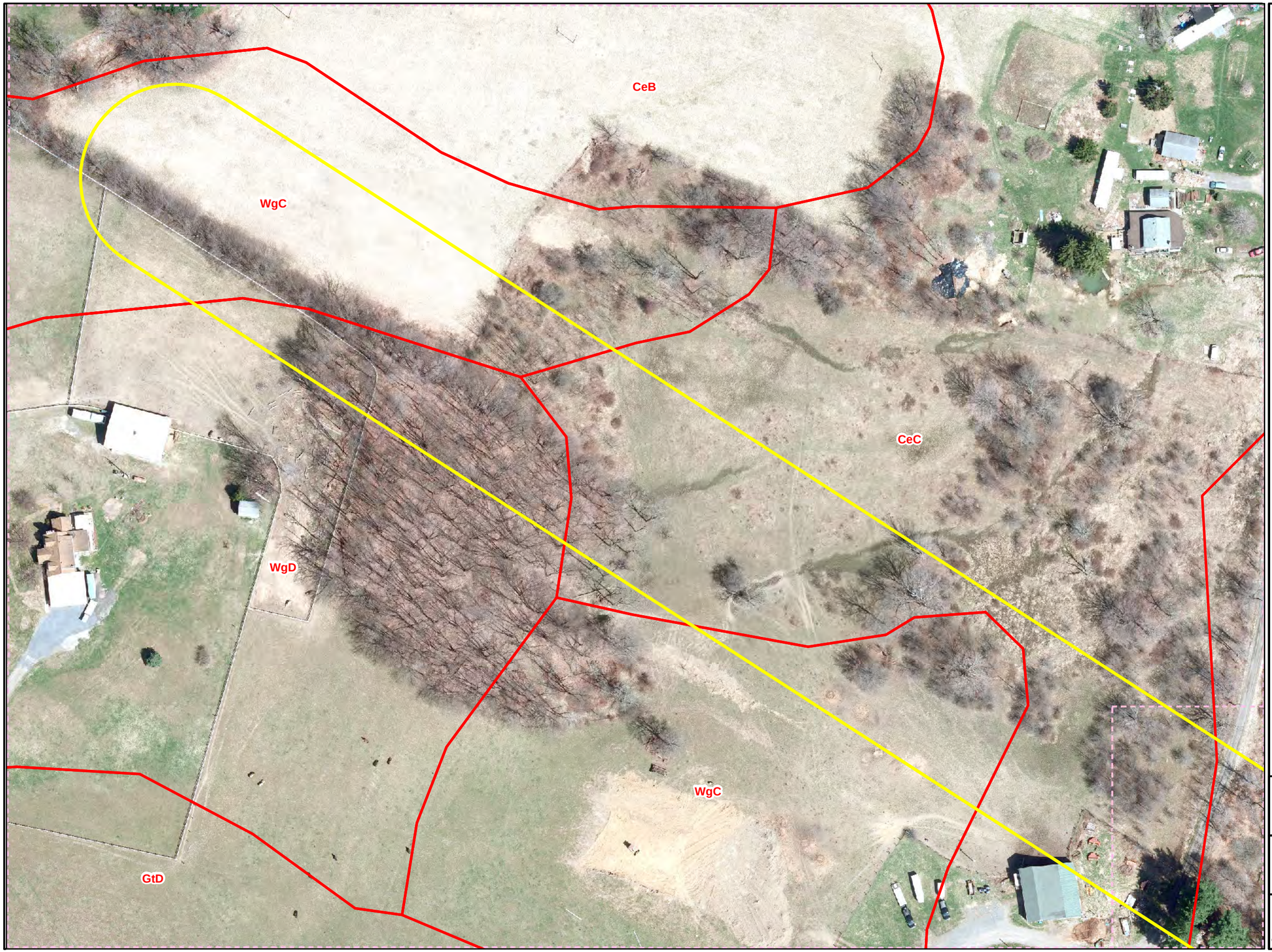
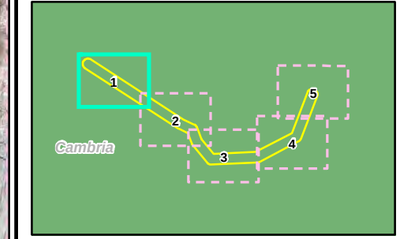


Legend

- 200-feet Survey Corridor
- NWI Wetlands
- Soils
- SheetBoundary
- NHD

Sheet Identifier



N

0 25 50 100 150 200

1 inch = 100 feet

Figure 1. NWI Features and Soils on the Sunoco Pennsylvania Pipeline Project, Cambria County, PA. Sheet 1 of 5

Prepared By:	Date:
TETRA TECH	01/2019

Base Map; SPLP 2014-2016, Roads from NRCS Geo-spatial Data Giveaway, Soils USDA 09/18/2018 Cambria County, NWI Wetlands USFWS 09/19/2016

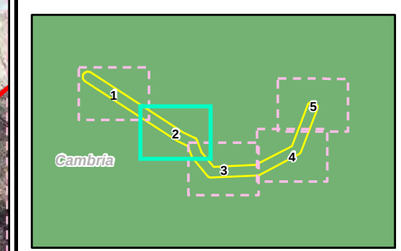
Coordinate System: NAD 83 Stateplane, PA South, Feet

P:\GIS\projects\112C06958-PPP\MXD\Permits\Permit\Mods\GoldfinchWDR\Figure1.mxd JL

Legend

- 200-feet Survey Corridor
- NWI Wetlands
- Soils
- SheetBoundary
- NHD

Sheet Identifier



N

0 25 50 100 150 200

1 inch = 100 feet

Figure 1. NWI Features and Soils on the Sunoco Pennsylvania Pipeline Project, Cambria County, PA.
Sheet 2 of 5

Prepared By:	Date:
TETRA TECH	01/2019

Base Map; SPLP 2014-2016, Roads from NRCS Geo-spatial Data Giveaway, Soils USDA 09/18/2018
Cambria County, NWI Wetlands USFWS 09/19/2016

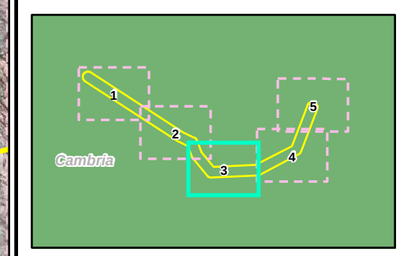
Coordinate System: NAD 83 Stateplane, PA South, Feet

P:\GIS\projects\112\C05958-PPP\MXD\Permits\PermitMods\GoldfinchWD\RFigure1.mxd JL

Legend

- 200-feet Survey Corridor
- NWI Wetlands
- Soils
- SheetBoundary
- NHD

Sheet Identifier



N

0 25 50 100 150 200

1 inch = 100 feet

Figure 1. NWI Features and Soils on the Sunoco Pennsylvania Pipeline Project, Cambria County, PA. Sheet 3 of 5

Prepared By:	Date:
TETRA TECH	01/2019

Base Map; SPLP 2014-2016, Roads from NRCS Geo-spatial Data Giveaway, Soils USDA 09/18/2018
Cambria County, NWI Wetlands USFWS 09/19/2016

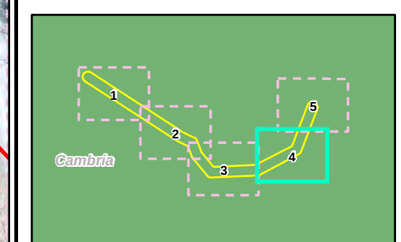
Coordinate System: NAD 83 Stateplane, PA South, Feet

P:\GIS\projects\112\C05958-PPP\MXD\Permits\Permit\Mods\GoldfinchWD\RFigure1.mxd JL

Legend

- 200-feet Survey Corridor
- NWI Wetlands
- Soils
- SheetBoundary
- NHD

Sheet Identifier



N

0 25 50 100 150 200

1 inch = 100 feet

Figure 1. NWI Features and Soils on the Sunoco Pennsylvania Pipeline Project, Cambria County, PA. Sheet 4 of 5

Prepared By:	Date:
TETRA TECH	01/2019

Base Map; SPLP 2014-2016, Roads from NRCS Geo-spatial Data Giveaway, Soils USDA 09/18/2018 Cambria County, NWI Wetlands USFWS 09/19/2016

Coordinate System: NAD 83 Stateplane, PA South, Feet

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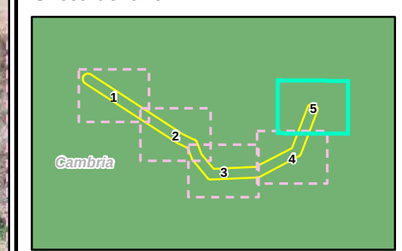
Legend

- 200-feet Survey Corridor
- NWI Wetlands
- Soils
- SheetBoundary
- NHD

Sheet Identifier



N

0 25 50 100 150 200

1 inch = 100 feet

Figure 1. NWI Features and Soils on the Sunoco Pennsylvania Pipeline Project, Cambria County, PA. Sheet 5 of 5

Prepared By:	Date:
TETRA TECH	01/2019

Base Map; SPLP 2014-2016, Roads from NRCS Geo-spatial Data Giveaway, Soils USDA 09/18/2018
Cambria County, NWI Wetlands USFWS 09/19/2016

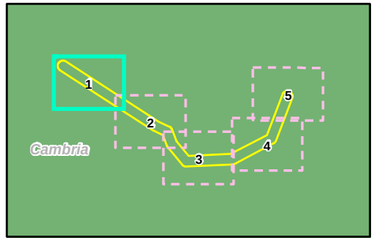
Coordinate System: NAD 83 Stateplane, PA South, Feet

P:\GIS\projects\112\C05858-PPP\MXD\Permits\PermitMods\GoldfinchWD\RFigure1.mxd JL

Legend

- 200-feet Survey Corridor
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- PEM Wetland
- PFO Wetland
- PSS Wetland
- SheetBoundary

Sheet Identifier



N

0 25 50 100 150 200

1 inch = 100 feet

Figure 2. Delineated Aquatic Resources on the Sunoco Pennsylvania Pipeline Project, Cambria County, PA. Sheet 1 of 5

Prepared By:	Date:
TETRA TECH	01/2019

Base Map; SPLP 2014-2016, Roads from NRCS Geo-spatial Data Giveaway.
Aquatic Resources, Tetra Tech, 2018-2019.

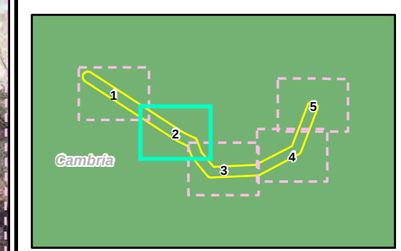
Coordinate System: NAD 83 Stateplane, PA South, Feet

P:\GIS\projects\112C06958-PPP\MXD\Permits\Permit\Mods\GoldfinchWDR\Figure2.mxd JL

Legend

- 200-feet Survey Corridor
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- PEM Wetland
- PFO Wetland
- PSS Wetland
- SheetBoundary

Sheet Identifier



N

0 25 50 100 150 200

1 inch = 100 feet

Figure 2. Delineated Aquatic Resources on the Sunoco Pennsylvania Pipeline Project, Cambria County, PA. Sheet 2 of 5

Prepared By: TETRA TECH

Date: 01/2019

Base Map; SPLP 2014-2016, Roads from NRCS Geo-spatial Data Giveaway.
Aquatic Resources, Tetra Tech, 2018-2019.

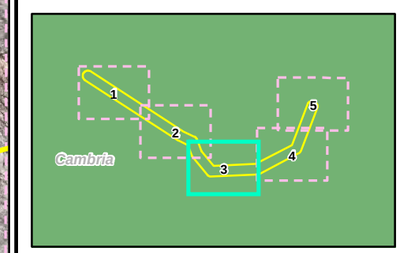
Coordinate System: NAD 83 Stateplane, PA South, Feet

P:\GIS\projects\112\C05958-PPP\MXD\Permits\Permit\Mods\GoldfinchWD\RFigure2.mxd JL

Legend

- 200-feet Survey Corridor
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- PEM Wetland
- PFO Wetland
- PSS Wetland
- SheetBoundary

Sheet Identifier



N

0 25 50 100 150 200

1 inch = 100 feet

Figure 2. Delineated Aquatic Resources on the Sunoco Pennsylvania Pipeline Project, Cambria County, PA. Sheet 3 of 5

Prepared By:	Date:
TETRA TECH	01/2019

Base Map; SPLP 2014-2016, Roads from NRCS Geo-spatial Data Giveaway.
Aquatic Resources, Tetra Tech, 2018-2019.

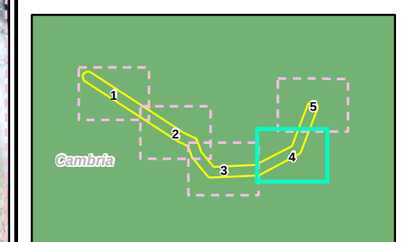
Coordinate System: NAD 83 Stateplane, PA South, Feet

P:\GIS\projects\112\C05958-PPP\MXD\Permits\Permit\Mods\GoldfinchWDR\Figure2.mxd JL

Legend

- 200-feet Survey Corridor
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- PEM Wetland
- PFO Wetland
- PSS Wetland
- SheetBoundary

Sheet Identifier



N

0 25 50 100 150 200

1 inch = 100 feet

Figure 2. Delineated Aquatic Resources on the Sunoco Pennsylvania Pipeline Project, Cambria County, PA. Sheet 4 of 5

Prepared By:	Date:
TETRA TECH	01/2019

Base Map; SPLP 2014-2016, Roads from NRCS Geo-spatial Data Giveaway.
Aquatic Resources, Tetra Tech, 2018-2019.

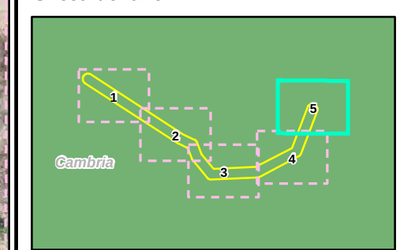
Coordinate System: NAD 83 Stateplane, PA South, Feet

P:\GIS\projects\112\005958-PPP\MXD\Permits\Permit\Mods\Goldfinch\WDR\Figure2.mxd JL

Legend

- 200-feet Survey Corridor
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- PEM Wetland
- PFO Wetland
- PSS Wetland
- SheetBoundary

Sheet Identifier



N

0 25 50 100 150 200

1 inch = 100 feet

Figure 2. Delineated Aquatic Resources on the Sunoco Pennsylvania Pipeline Project, Cambria County, PA. Sheet 5 of 5

Prepared By:	Date:
TETRA TECH	01/2019

Base Map; SPLP 2014-2016, Roads from NRCS Geo-spatial Data Giveaway.
Aquatic Resources, Tetra Tech, 2018-2019.

Coordinate System: NAD 83 Stateplane, PA South, Feet

P:\GIS\projects\112C05958-PPP\MXD\Permits\PermitMods\GoldfinchWDR\Figure2.mxd JL

ATTACHMENT B

WETLAND PHOTOGRAPHIC LOG

WETLAND PHOTOGRAPHIC LOG

Company: Sunoco Pipeline, L.P.

Project: Pennsylvania Pipeline Project (PPP) – Goldfinch Lane Re-route

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 1

Direction: N

Comments: Wetland W1r (PEM) – Wetland sampling point

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 2

Direction: S

Comments: Wetland W1r – Upland sampling point

WETLAND PHOTOGRAPHIC LOG

Company: Sunoco Pipeline, L.P.

Project: Pennsylvania Pipeline Project (PPP) – Goldfinch Lane Re-route

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 3

Direction: S

Comments: Wetland W2r (PEM) – Wetland sampling point

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 4

Direction: NE

Comments: Wetland W2r – Upland sample point

WETLAND PHOTOGRAPHIC LOG

Company: Sunoco Pipeline, L.P.

Project: Pennsylvania Pipeline Project (PPP) – Goldfinch Lane Re-route

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 5

Direction: NE

Comments: Wetland W3r (PEM) – Wetland sampling point

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 6

Direction: NW

Comments: Wetland W3r – Upland sampling point

WETLAND PHOTOGRAPHIC LOG

Company: Sunoco Pipeline, L.P.

Project: Pennsylvania Pipeline Project (PPP) – Goldfinch Lane Re-route

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 7

Direction: SW

Comments: Wetland W4r (PEM) – Wetland sampling point

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 8

Direction: SE

Comments: Wetland W4r – Upland sample point

WETLAND PHOTOGRAPHIC LOG

Company: Sunoco Pipeline, L.P.

Project: Pennsylvania Pipeline Project (PPP) – Goldfinch Lane Re-route

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 9

Direction: N

Comments: Wetland W5r (PSS) – Wetland sampling point

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 10

Direction: SW

Comments: Wetland W5r – Upland sampling point

WETLAND PHOTOGRAPHIC LOG

Company: Sunoco Pipeline, L.P.

Project: Pennsylvania Pipeline Project (PPP) – Goldfinch Lane Re-route

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 11

Direction: SW

Comments: Wetland W6r (PSS) – Wetland sampling point

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 12

Direction: NW

Comments: Wetland W6r – Upland sample point

WETLAND PHOTOGRAPHIC LOG

Company: Sunoco Pipeline, L.P.

Project: Pennsylvania Pipeline Project (PPP) – Goldfinch Lane Re-route

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 13

Direction: NE

Comments: Wetland W7r (PSS) – Wetland sampling point

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 14

Direction: NW

Comments: Wetland W7r – Upland sampling point

WETLAND PHOTOGRAPHIC LOG

Company: Sunoco Pipeline, L.P.

Project: Pennsylvania Pipeline Project (PPP) – Goldfinch Lane Re-route

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 15

Direction: S

Comments: Wetland W8r (PSS) – Wetland sampling point

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 16

Direction: N

Comments: Wetland W8r – Upland sample point

WETLAND PHOTOGRAPHIC LOG

Company: Sunoco Pipeline, L.P.

Project: Pennsylvania Pipeline Project (PPP) – Goldfinch Lane Re-route

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 17

Direction: S

Comments: Wetland W9r (PSS) – Wetland sampling point

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 18

Direction: NW

Comments: Wetland W9r – Upland sampling point

ATTACHMENT C

WATERBODY PHOTOGRAPHIC LOG

WATERBODY PHOTOGRAPHIC LOG

Company: Sunoco Pipeline, L.P.

Project: Pennsylvania Pipeline Project (PPP) – Goldfinch Lane Re-route

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 1

Direction: S

Comments: Stream S1r – Upstream

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 2

Direction: N

Comments: Stream S1r – Downstream

WATERBODY PHOTOGRAPHIC LOG

Company: Sunoco Pipeline, L.P.

Project: Pennsylvania Pipeline Project (PPP) – Goldfinch Lane Re-route

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 3

Direction: S

Comments: Stream S2r – Upstream

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 4

Direction: N

Comments: Stream S2r – Downstream

WATERBODY PHOTOGRAPHIC LOG

Company: Sunoco Pipeline, L.P.

Project: Pennsylvania Pipeline Project (PPP) – Goldfinch Lane Re-route

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 5

Direction: SW

Comments: Stream S3r – Upstream

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 6

Direction: NE

Comments: Stream S3r – Downstream

WATERBODY PHOTOGRAPHIC LOG

Company: Sunoco Pipeline, L.P.

Project: Pennsylvania Pipeline Project (PPP) – Goldfinch Lane Re-route

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 7

Direction: W

Comments: Stream S4r – Upstream

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 8

Direction: E

Comments: Stream S4r – Downstream

WATERBODY PHOTOGRAPHIC LOG

Company: Sunoco Pipeline, L.P.

Project: Pennsylvania Pipeline Project (PPP) – Goldfinch Lane Re-route

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 9

Direction: NE

Comments: Stream S5r – Upstream

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 10

Direction: SW

Comments: Stream S5r – Downstream

WATERBODY PHOTOGRAPHIC LOG

Company: Sunoco Pipeline, L.P.

Project: Pennsylvania Pipeline Project (PPP) – Goldfinch Lane Re-route

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 11

Direction: E

Comments: Stream S6r – Upstream

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 12

Direction: W

Comments: Stream S6r – Downstream

WATERBODY PHOTOGRAPHIC LOG

Company: Sunoco Pipeline, L.P.

Project: Pennsylvania Pipeline Project (PPP) – Goldfinch Lane Re-route

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 13

Direction: N

Comments: Stream S7r – Upstream

Photographer: T. Carver

Date: 12/5/2018

Photo No.: 14

Direction: S

Comments: Stream S7r – Downstream

ATTACHMENT D

WETLAND DATA FORMS

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PPP City/County: Cambria Co Sampling Date: 12/5/18

Applicant/Owner: SPLP State: PA Sampling Point: W1R - WET 1

Investigator(s): Eckenrahl / Carver Section, Township, Range: Jackson Twp

Landform (hillslope, terrace, etc.): hillslope Local relief (concave, convex, none): None Slope (%): 5

Subregion (LRR or MLRA): LRR N, MLRA 127 Lat: 40° 24' 56.84" N Long: 78° 52' 28.04 W Datum: _____

Soil Map Unit Name: CeC - Cookport + Ernest, 3-8% slopes NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No _____	**Is the Sampled Area within a Wetland?** **Yes X** **No _____**
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ 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)
- X Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes X	No _____	Depth (inches): 7
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 0

Wetland Hydrology Present? **Yes X** **No _____**

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

Remarks:

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

Sampling Point: WIR-wet 1

Tree Stratum (Plot size: _____)

	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			

_____ = Total Cover

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: _____)

1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			

_____ = Total Cover

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 9)

1.	Phalaris arundinacea	80	X	FACW
2.	Solidago gigantea	10		FACW
3.				
4.				
5.				
6.				
7.				
8.				
9.				
10.				
11.				

90 = Total Cover

50% of total cover: 45 20% of total cover: 18

Woody Vine Stratum (Plot size: _____)

1.			
2.			
3.			
4.			
5.			

_____ = Total Cover

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (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 ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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 X No _____

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

SOIL

Sampling Point: WR-WET 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/1	100					SILT LOAM	
3-14	10YR 4/2	80	7.5YR 5/8	20	RM	M	SILT LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X 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)
- X 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[3]:

- ___ 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)

[3]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** X **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PPP City/County: Cambria Co Sampling Date: 12/5/18

Applicant/Owner: SPLP State: PA Sampling Point: WIR-up 1

Investigator(s): Eckwahl / Craver Section, Township, Range: Jackson Twp

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): — Slope (%): 10

Subregion (LRR or MLRA): LRR N MLRA 127 Lat: 40°24'56.02" N Long: 78°52'27.50" W Datum: _____

Soil Map Unit Name: WgC - Wharton-Gilpin complex, 8-15% slopes NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ 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)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WIR-up 1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juglans nigra	40	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		

Sapling/Shrub Stratum (Plot size: 15)			
1. Rubus allegheniensis	20	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	20 = Total Cover		
50% of total cover: 10	20% of total cover: 4		

Herb Stratum (Plot size: 9')			
1. Phleum pratense	70	X	FACU
2. Solidago canadensis	25	X	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	95 = Total Cover		
50% of total cover: 47½	20% of total cover: 19		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: (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 ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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 X

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

SOIL

Sampling Point: WIR-wp1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/3	100					SILT LOAM	
4-14	10YR 4/4	100					SILT LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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[3]:

- ___ 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)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PPP Reroute City/County: Cambria Sampling Date: 12/5/18

Applicant/Owner: SPLP State: PA Sampling Point: W2R-Wet1

Investigator(s): Eckwahl / Carver Section, Township, Range: Jackson Twp

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): None Slope (%): 5

Subregion (LRR or MLRA): LRR N, MLRA 127 Lat: 40°24'53.80" N Long: 78°52'21.03" W Datum: _____

Soil Map Unit Name: GWF - Gilpin-Weikert channery silt loams NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No _____	**Is the Sampled Area within a Wetland?** Yes X No _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

Adjacent to S1R

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ 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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): _____
Water Table Present?	Yes X	No ___	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? Yes X No _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W2R-WET 1

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Herb Stratum (Plot size: 9)			
1. Phalaris arundinacea	30	x	FACW
2. Glyceria melicaria	20	x	OBL
3. Juncus effusus	20	x	OBL
4. Carex sp.	10		
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (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 ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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** X **No** _____

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

SOIL

Sampling Point: W2R-WET 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/3						SILT LOAM	
3-12	10YR 4/2	80	7.5YR 5/8	20	RM	M	SILT LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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)
- X 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[3]:

- ___ 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)

[3]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** X **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PPP Reroute City/County: Cambria Sampling Date: 12/5/18

Applicant/Owner: SPLP State: PA Sampling Point: W2R-up1

Investigator(s): Eckwahl / Carver Section, Township, Range: Jackson Twp

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): — Slope (%): 5

Subregion (LRR or MLRA): LRR N, MLRA 127 Lat: 40°24'53.02" Long: 78°52'22.00" Datum: _____

Soil Map Unit Name: LDF - Laidig soils NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ 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)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W2R-up 1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Fagus grandifolia	60	X	FACU
2. Prunus serotina	20	X	FACU
3.			
4.			
5.			
6.			
7.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		

Sapling/Shrub Stratum (Plot size: 15)			
1. Fagus grandifolia	30	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	30 = Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (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 ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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 X

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

SOIL

Sampling Point: W2R-up1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	100					SILT LOAM	
4-12	10YR 4/4	100					SILT LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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[3]:

- ___ 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)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PPP reroute City/County: Cambria Sampling Date: 12/5/18

Applicant/Owner: SPLP State: PA Sampling Point: W3R-wet 1

Investigator(s): ECKWAHL / CARVER Section, Township, Range: Jackson Twp

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): Concave Slope (%): 4

Subregion (LRR or MLRA): LRRN MLRA 127 Lat: 40°24'44.50" N Long: 78°51'54.06" Datum: ____

Soil Map Unit Name: CeC - Cookport and Ernest soils NWI classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____
Hydric Soil Present?	Yes X	No ____
Wetland Hydrology Present?	Yes X	No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X 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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W3R-WET 1

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Herb Stratum (Plot size: 9)			
1. Osmundastrum cinnamoneum	30	X	FACW
2. Juncus effusus	20	X	FACW
3. Geum lacinatum	10		FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (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 ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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 X No _____

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

SOIL

Sampling Point: W3R-WET /

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					SILT LOAM	
4-12	10YR 4/2	80	7.5YR 5/8	20	RM	M	SILT LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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)
- X 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[3]:

- ___ 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)

[3]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 X No ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PPP Reroute City/County: Cambria Sampling Date: 12/5/18

Applicant/Owner: SPLP State: PA Sampling Point: W3R-UP1

Investigator(s): ECKWAHL / CARVER Section, Township, Range: Jackson Twp

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): — Slope (%): 5

Subregion (LRR or MLRA): LRRN, MLRA 127 Lat: 40°24'44.20" N Long: 78°51'53.85" W Datum: ____

Soil Map Unit Name: CeC-Cookport and Ernest soils NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ 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)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W3R-up1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus serotina	40	X	FACU
2. Acer saccharum	40	X	FACU
3.			
4.			
5.			
6.			
7.			
	80 = Total Cover		
50% of total cover: 40	20% of total cover: 16		

Sapling/Shrub Stratum (Plot size: 15)			
1. Crataegus sp.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size:)			
1. P			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: — (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 ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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 X

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

SOIL

Sampling Point: W3R-up 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/4	100					SILT LOAM	
4-14	10YR 5/6	100					SILT LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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[3]:

- ___ 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)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PPP Reroute City/County: Cambria Sampling Date: 12/5/18

Applicant/Owner: SPLP State: PA Sampling Point: W4R-wet 1

Investigator(s): Eckwahl / Carver Section, Township, Range: Jackson Twp

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

Subregion (LRR or MLRA): LRR N, MLRA 127 Lat: 40°24'45.13" N Long: 78°51'54.23" W Datum: _____

Soil Map Unit Name: CeC - Cookport and Ernest soils NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X 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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): _____
Water Table Present?	Yes X	No ___	Depth (inches): 2
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W4R-WET 1

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Sapling/Shrub Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Herb Stratum (Plot size: 9)			
1. Glyceria melicaria	25	X	OBL
2. Osmundastrum cinnamomeum	10	X	FACW
3. Geum laciniatum	10	X	FACW
4. Carex sp.	10		
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
50% of total cover: 22½	20% of total cover: 9		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (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 ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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 X No _____

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

SOIL

Sampling Point: W4R-wet 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/2	100					SiL LOAM	
4-12	10YR 4/2	90	7.5YR 5/8	10	RM	M	SiL LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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)
- X 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[3]:

- ___ 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)

[3]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 X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PPP Reroute City/County: Cambria Sampling Date: 12/5/18

Applicant/Owner: SPLP State: PA Sampling Point: W4R-up1

Investigator(s): Eckwall / CARVER Section, Township, Range: Jackson Twp

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): — Slope (%): 5

Subregion (LRR or MLRA): LRR N, MLRA 127 Lat: 40°24'45.19" N Long: 78°51'53.64" W Datum: _____

Soil Map Unit Name: CeC - Cookport and Ernest soils NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ 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)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W4R-up1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acer saccarhum	25	X	FACU
2. Prunus serotina	25	X	FACU
3.			
4.			
5.			
6.			
7.			
	50 = Total Cover		
50% of total cover: 25	20% of total cover: 0		

Sapling/Shrub Stratum (Plot size: 15)			
1. Prunus serotina	20	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: / (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 ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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 X

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

SOIL

Sampling Point: W4R-up1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 4/4	100						
4-12	10YR 5/6	100						

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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[3]:

- ___ 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)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PPP Reroute City/County: Cambria Co Sampling Date: 12/5/18

Applicant/Owner: SPLP State: PA Sampling Point: NSR - WET 1

Investigator(s): ECKWAHI/CARVER Section, Township, Range: Jackson Twp

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

Subregion (LRR or MLRA): LRRN MLRA 127 Lat: 40°24'47.01" N Long: 78°51'49.08" W Datum: ____

Soil Map Unit Name: CeB - Cookport and Ernest soils NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ 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)
- X Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes X No ____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W5R-WET 1

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Sapling/Shrub Stratum (Plot size: 15)	Absolute % Cover	Dominant Species?	Indicator Status
1. Cornus amomum	40	X	FACW
2. Crataegus sp			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		

Herb Stratum (Plot size: 9)	Absolute % Cover	Dominant Species?	Indicator Status
1. Onoclea sensibilis	40	X	FACW
2. Persicaria sagittata	20	X	OBL
3. Juncus effusus	20	X	OBL
4. Glyceria melicaria	10		OBL
5. Carex sp	5		
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (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 ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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 X No _____

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

SOIL

Sampling Point: WSR-WET-1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/1	100					SILT LOAM	
3-14	10YR 5/2	90	10YR 5/6	10	RM	M	SILT LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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)
- X 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[3]:

- ___ 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)

[3]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 X No ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PPP reroute City/County: Cambria Co Sampling Date: 12/5/18

Applicant/Owner: SPLP State: PA Sampling Point: WSR-wp1

Investigator(s): Eckwahl / Carver Section, Township, Range: Jackson Twp

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

Subregion (LRR or MLRA): LRRN, MLRA 127 Lat: 40°24'46.25" N Long: 78°51'48.49" W Datum: _____

Soil Map Unit Name: CeB - Cookport and Ernest soils NWI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ 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)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WSR- up /

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Tsuga canadensis	70	x	FACU
2. Prunus serotina	10	x	FACU
3. Acer saccharum	10	x	FACU
4.			
5.			
6.			
7.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		

Sapling/Shrub Stratum (Plot size: 15)			
1. Prunus serotina	20	x	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: / (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 ≤3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- ___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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 X

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

SOIL

Sampling Point: WSA-up 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 3/1	100					SILT LOAM	
4-14	10YR 4/4	100					SILT LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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[3]:

- ___ 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)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PPP Reroute City/County: Cambria Co Sampling Date: 12/5/18

Applicant/Owner: SPLP State: PA Sampling Point: WLOR-WET1

Investigator(s): ECKWAHL / CARVER Section, Township, Range: Jackson Twp

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

Subregion (LRR or MLRA): LRR N, MLRA 127 Lat: 40°24'48.53" N Long: 78°51'44.91" W Datum: ____

Soil Map Unit Name: BtB- Brinkerton soils NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ 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)
- X Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes X No ____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W6R-WET1

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Sapling/Shrub Stratum (Plot size: 15)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix discolor	25	X	FACW
2. Cornus amomum	15		FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		
50% of total cover: 20	20% of total cover: 8		

Herb Stratum (Plot size: 9)	Absolute % Cover	Dominant Species?	Indicator Status
1. Onoclea sensibilis	30	X	FACW
2. Phalaris arundinacea	30	X	FACW
3. Juncus effusus	20	X	OBL
4. Persicaria sagittata	10		OBL
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	90 = Total Cover		
50% of total cover: 45	20% of total cover: 18		

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: ~~3~~ 4 (A)

Total Number of Dominant Species Across All Strata: ~~3~~ 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (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 ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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.)

SOIL

Sampling Point: WER-WET 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	100					SILT LOAM	
4-12	10YR 5/2	80	7.5YR 5/8	20	RM	M	SILT LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- X 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)
- X 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[3]:

- ___ 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)

[3]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** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PPP Reroute City/County: Cambria Co Sampling Date: 12/5/18

Applicant/Owner: SPLP State: PA Sampling Point: Wlk-up1

Investigator(s): Eckwahl / Carver Section, Township, Range: Jackson Twp

Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): — Slope (%): _____

Subregion (LRR or MLRA): LRR N MLRA 127 Lat: 40°24'48.09" N Long: 78°51'45.35" Datum: _____

Soil Map Unit Name: BtB - Brinkerton soils NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** **Yes** _____ **No** X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ 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)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? **Yes** _____ **No** X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W6R-up1

Tree Stratum (Plot size: 30')	Absolute % Cover	Dominant Species?	Indicator Status
1. Tsuga canadensis	80	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	10 = Total Cover		
50% of total cover: 40	20% of total cover: 16		

Sapling/Shrub Stratum (Plot size: 15')			
1. Tsuga canadensis	10	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	10 = Total Cover		
50% of total cover: 5	20% of total cover: 2		

Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: / (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 ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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 X

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

SOIL

Sampling Point: WER-UP 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	7.5YR 3/1	100					SILT LOAM	
4-14	10YR 4/4	100					SILT LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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[3]:

- ___ 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)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PPP Reroute City/County: Cambria Sampling Date: 12/5/18

Applicant/Owner: SPLP State: PA Sampling Point: WTR-WET 1

Investigator(s): Eckwahl / Carver Section, Township, Range: Jackson Twp

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

Subregion (LRR or MLRA): LRR N MLRA 127 Lat: 40°24'49.98" N Long: 78°51'43.69" Datum: _____

Soil Map Unit Name: BtB - Brinkerton soils NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes X	No _____	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- X Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- X Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X 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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes X	No _____	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No _____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** _____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W7R - Wet 1

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	_____ = Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 15)			
1. Cornus amomum	40	X	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		

50% of total cover: 20 20% of total cover: 8

Herb Stratum (Plot size: 9)			
1. Osmundastrum cinnamomeum	40	X	FACW
2. Juncus effusus	30	X	OBL
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	70 = Total Cover		

50% of total cover: 35 20% of total cover: 14

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (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 ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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** X **No** _____

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

SOIL

Sampling Point: W7R-WET1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 3/1	100					SILT LOAM	
3-14	10YR 5/2	85	7.5YR 5/8	15	RM	M	SILT LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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)
- X 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[3]:

- ___ 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)

[3]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** X **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PPP Reroute City/County: Cambria Co Sampling Date: 12/5/18

Applicant/Owner: SPLP State: PA Sampling Point: W7R-up1

Investigator(s): ECKWAAL / CARVER Section, Township, Range: Jackson Twp

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

Subregion (LRR or MLRA): LRR N, MLRA 127 Lat: 40°24'49.73" N Long: 78°51'44.07" W Datum: ____

Soil Map Unit Name: BtB - Bonkerton soils NWI classification: ____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ 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)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? Yes ____ No X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: WTR – up 1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus serotina	40	X	FACU
2. Acer saccarhum	20	X	FACU
3. Acer rubrum	10		FAC
4.			
5.			
6.			
7.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		

Sapling/Shrub Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Herb Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Woody Vine Stratum (Plot size:)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: / (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 ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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 X

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

SOIL

Sampling Point: W7R-up 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR 3/3	100					SILT LOAM	
6-14	10YR 5/6	100					SILT LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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[3]:

- ___ 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)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PPP Reroute City/County: Cambria Sampling Date: ____

Applicant/Owner: SPLP State: PA Sampling Point: WBR-WET 1

Investigator(s): Eckwall / CARVER Section, Township, Range: Jackson Twp

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

Subregion (LRR or MLRA): LRR N, MLRA 127 Lat: 40° 24' 50.64" N Long: 78° 51' 43.07" W Datum: ____

Soil Map Unit Name: BtB - Brinkerton soils NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____
Hydric Soil Present?	Yes X	No ____
Wetland Hydrology Present?	Yes X	No ____

Is the Sampled Area within a Wetland? **Yes** X **No** ____

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X Drainage Patterns (B10)
- ___ Moss Trim Lines (B16)
- ___ Dry-Season Water Table (C2)
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes X	No ____	Depth (inches): 3
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? **Yes** X **No** ____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W8R-WET1

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Sapling/Shrub Stratum (Plot size: 15)	Absolute % Cover	Dominant Species?	Indicator Status
1. Cornus amomum	40	X	FACW
2. Salix discolor	30	X	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		

Herb Stratum (Plot size: 9)	Absolute % Cover	Dominant Species?	Indicator Status
1. Juncus effusus	25	X	OBL
2. Onoclea sensibilis	20	X	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	45 = Total Cover		
50% of total cover: 23	20% of total cover: 9		

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (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 ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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 X No _____

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

SOIL

Sampling Point: WBR-WET1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/1	100					SiCL LOAM	
4-14	10YR 4/2	85	10YR 5/6	15	RM	M	SiCL LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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)
- X 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[3]:

- ___ 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)

[3]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** X **No** ___

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PPP Reroute City/County: Cambria Sampling Date: 12/5/18

Applicant/Owner: SPLP State: PA Sampling Point: WBR-up1

Investigator(s): Eckwahl / Carver Section, Township, Range: Jackson Twp

Landform (hillslope, terrace, etc.): ____ Local relief (concave, convex, none): ____ Slope (%): —

Subregion (LRR or MLRA): LRR N, MLRA 127 Lat: 40°24'50.68" N Long: 78°51'43.66" W Datum: ____

Soil Map Unit Name: BtB - Brinkerton soils NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** **Yes** ____ **No** X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ 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)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

Wetland Hydrology Present? **Yes** ____ **No** X

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W8R-up 1

Tree Stratum (Plot size: 30)	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus serotina	40	X	FACU
2. Acer saccharum	20	X	FACU
3.			
4.			
5.			
6.			
7.			
	60 = Total Cover		
50% of total cover: 30	20% of total cover: 12		

Sapling/Shrub Stratum (Plot size: 15)			
1. Crataegus sp.	30		
2. Prunus serotina	10	x	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	40 = Total Cover		
50% of total cover: 10	20% of total cover: 4		

Herb Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Woody Vine Stratum (Plot size: _____)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		
50% of total cover:	20% of total cover:		

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: / (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 ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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 X

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

SOIL

Sampling Point: W8R-UP 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR 2/2	100					SILT LOAM	
3-14	10YR 4/4	100					SILT LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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[3]:

- ___ 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)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PPP Reroute City/County: Cambria Sampling Date: 12/5/18

Applicant/Owner: SPLP State: PA Sampling Point: WAR-WET 1

Investigator(s): Eckwahl / CARVER Section, Township, Range: Jackson Twp

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

Subregion (LRR or MLRA): LRR N MLRA 127 Lat: 40°24'52.52"N Long: 78°51'42.67"W Datum:

Soil Map Unit Name: BtB- Brinkerton soils NWI classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- X 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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes X	No ____	Depth (inches): 0

Wetland Hydrology Present? Yes X No ____

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: W9R-WET /

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Sapling/Shrub Stratum (Plot size: 15)	Absolute % Cover	Dominant Species?	Indicator Status
1. Salix discolor	40	X	FACW
2. Alnus incana	30	X	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	70 = Total Cover		
50% of total cover: 35	20% of total cover: 14		

Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Onoclea sensibilis	30	X	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	30 = Total Cover		
50% of total cover: 15	20% of total cover: 6		

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
	_____ = Total Cover		
50% of total cover: _____	20% of total cover: _____		

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (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 ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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 X No _____

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

SOIL

Sampling Point: W9R-WET 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 2/2	100					SILT LOAM	
4-14	10YR 5/2	90	7.5YR 5/8	10	RM	M	SILT LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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)
- X 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[3]:

- ___ 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)

[3]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** X **No** ____

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: PPP Reroute City/County: Cambria Sampling Date: 12/5/18

Applicant/Owner: SPLP State: PA Sampling Point: WPR-Up 1

Investigator(s): ECKWAHL / CARVER Section, Township, Range: Jackson Twp

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

Subregion (LRR or MLRA): LRRN, MLRA 127 Lat: 40°24'53.06" N Long: 78°51'43.46" W Datum: _____

Soil Map Unit Name: BtB - Brinkerton Soils NWI classification: —

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes _____	No X	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

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

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Aquatic Fauna (B13)
- ___ True Aquatic Plants (B14)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Oxidized Rhizospheres on Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Recent Iron Reduction in Tilled Soils (C6)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ 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)

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes _____	No X	Depth (inches): _____
Saturation Present? (includes capillary fringe)	Yes _____	No X	Depth (inches): _____

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

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

Sampling Point: W9R-up 1

Tree Stratum (Plot size: 30)

	Absolute % Cover	Dominant Species?	Indicator Status
1. Prunus serotina	40	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
	40 = Total Cover		

50% of total cover: 20 20% of total cover: 8

Sapling/Shrub Stratum (Plot size: 15)

1. Castanea sp.	20		
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Herb Stratum (Plot size: 9)

1. Solidago canadensis	20	X	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
	20 = Total Cover		

50% of total cover: 10 20% of total cover: 4

Woody Vine Stratum (Plot size: _____)

1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: _____ (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (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 ≤3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

___ Problematic Hydrophytic Vegetation[1] (Explain)

[1]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.)

SOIL

Sampling Point: WAR-UP 1

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

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR 3/3	100					SILT LOAM	
4-14	10YR 4/6	100					SILT LOAM	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]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[3]:

- ___ 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)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

ATTACHMENT E

STREAM DATA FORMS

Tetra Tech Stream Data Sheet

Surveyors: Eckwahl / Berend Date: 12/5/18 Resource ID Number: S1R
Project: PPP Reroute State: PA County: Cambria Co
Photo Number (s): _____ Canopy Cover: 60 %

Flow Direction: N **Bank Width:** 3 feet **Water Width:** 3 feet
High Water Depth: 3 feet **Water Depth:** 3" ~~feet~~ **Turbidity:** Clear

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

Sinuosity:
[ ] Low
[X] Medium
[ ] High

Features:
[X] Riffles [ ] Sand/Mud Bar [X] Run/Glide
[X] Pools [ ] Gravel Bar [ ] Braided
[ ] Rapids [ ] Aquatic Vegetation [ ] Other _____

Substrate:
[ ] Bedrock ___%
[ ] Boulder ___%
[X] Cobble/Gravel 40 %
[X] Sand 40 %
[X] Silt/Clay 20 %
[ ] Organic ___%

Bank Substrate:
Height: Left 3 Right 3

[ ]	Bedrock	[ ]
[ ]	Boulder	[ ]
[X]	Gravel	[X]
[ ]	Sand	[ ]
[X]	Silt/Clay	[X]
[ ]	Organic	[ ]

Floodplain Width:

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

Dominant Vegetation:
[ ] Forested
Species: Firecherry,
[ ] Shrub
Species: Salix discolor, Crataegus sp., All. Blackberry
[ ] Herbaceous
Species: _____

Wildlife Observed/Notes:

Sketch:

Tetra Tech Stream Data Sheet

Surveyors: Eckwahl / Berend Date: 12/5/18 Resource ID Number: S2R
Project: PPR Reroute State: PA County: Cambria
Photo Number (s): _____ Canopy Cover: 70 %

Flow Direction: N **Bank Width:** 1 feet **Water Width:** 1 feet
High Water Depth: 1 feet **Water Depth:** 1" ~~feet~~ **Turbidity:** Clear

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

Sinuosity:
[X] Low
[ ] Medium
[ ] High

Features:
[X] Riffles
[X] Pools
[ ] Rapids
[ ] Sand/Mud Bar
[ ] Gravel Bar
[ ] Aquatic Vegetation
[X] Run/Glide
[ ] Braided
[ ] Other _____

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

Bank Substrate:
Height: Left 6" Right 6"

[ ]	Bedrock	[ ]
[ ]	Boulder	[ ]
[ ]	Gravel	[ ]
[ ]	Sand	[ ]
[ ]	Silt/Clay	[ ]
[ ]	Organic	[ ]

Floodplain Width:

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

Dominant Vegetation:
[ ] Forested
Species: Sugar maple, Blk Cherry, Carya coraliformis,
[ ] Shrub
Species: Japanese barberry
[ ] Herbaceous
Species: _____

Wildlife Observed/Notes:

Sketch:

Tetra Tech Stream Data Sheet

Surveyors: Eckwahl / Carver Date: 12/5/18 Resource ID Number: S3R
Project: PPP Reroute State: PA County: Cambria
Photo Number (s): _____ Canopy Cover: 80 %

Flow Direction: NE **Bank Width:** 2 feet **Water Width:** 2" feet
High Water Depth: 2 feet **Water Depth:** 2" ~~feet~~ **Turbidity:** Clear

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

Sinuosity:
[ ] Low
[X] Medium
[ ] High

Features:
[X] Riffles [ ] Sand/Mud Bar [X] Run/Glide
[X] Pools [ ] Gravel Bar [ ] Braided
[ ] Rapids [ ] Aquatic Vegetation [ ] Other _____

Substrate:
[ ] Bedrock ___%
[ ] Boulder ___%
[ ] Cobble/Gravel ___%
[X] Sand 50 %
[X] Silt/Clay 50 %
[ ] Organic ___%

Bank Substrate:
Height: Left 4 Right 4

[ ]	Bedrock	[ ]
[ ]	Boulder	[ ]
[ ]	Gravel	[ ]
[ ]	Sand	[ ]
[X]	Silt/Clay	[X]
[ ]	Organic	[ ]

Floodplain Width:

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

Dominant Vegetation:
[ ] Forested
Species: Hemlock
[ ] Shrub
Species: _____
[ ] Herbaceous
Species: _____

Wildlife Observed/Notes:

Sketch:

Tetra Tech Stream Data Sheet

Surveyors: Eckwahl / CARVER Date: 12/5/18 Resource ID Number: S4R
Project: PPP Reroute State: PA County: Cambria
Photo Number (s): _____ Canopy Cover: 50 %

Flow Direction: E **Bank Width:** 30 feet **Water Width:** 30 feet
High Water Depth: 6 feet **Water Depth:** 2 feet **Turbidity:** Clear

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

Sinuosity:
[X] Low
[ ] Medium
[ ] High

Features:
[X] Riffles [ ] Sand/Mud Bar [X] Run/Glide
[X] Pools [ ] Gravel Bar [ ] Braided
[ ] Rapids [ ] Aquatic Vegetation [ ] Other _____

Substrate:
[ ] Bedrock ___%
[ ] Boulder ___%
[X] Cobble/Gravel/00 %
[ ] Sand ___%
[ ] Silt/Clay ___%
[ ] Organic ___%

Bank Substrate:
Height: Left 6 Right 6

[ ]	Bedrock	[ ]
[ ]	Boulder	[ ]
[X]	Gravel	[X]
[ ]	Sand	[ ]
[X]	Silt/Clay	[X]
[ ]	Organic	[ ]

Floodplain Width:

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

Dominant Vegetation:
[ ] Forested
Species: Acer rubrum
[ ] Shrub
Species: Alnus sp., Cornus amomum, Rosa multiflora
[ ] Herbaceous
Species: _____

Wildlife Observed/Notes:

Sketch:

Tetra Tech Stream Data Sheet

Surveyors: Eckwahl / Carver Date: 12/5/18 Resource ID Number: 55R
Project: PPP Reroute State: _____ County: Cambria
Photo Number (s): _____ Canopy Cover: ____%

Flow Direction: S **Bank Width:** 1 feet **Water Width:** 1 feet
High Water Depth: 1 feet **Water Depth:** 1" ~~feet~~ **Turbidity:** Clear

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

Sinuosity:
[X] Low
[ ] Medium
[ ] High

Features:
[X] Riffles [ ] Sand/Mud Bar [ ] Run/Glide
[ ] Pools [ ] Gravel Bar [ ] Braided
[ ] Rapids [ ] Aquatic Vegetation [ ] Other _____

Substrate:
[ ] Bedrock ___%
[ ] Boulder ___%
[ ] Cobble/Gravel ___%
[ ] Sand ___%
[X] Silt/Clay 100 %
[ ] Organic ___%

Bank Substrate:
Height: Left 3 Right 3

[ ]	Bedrock	[ ]	
[ ]	Boulder	[ ]	
[ ]	Gravel	[ ]	
[ ]	Sand	[ ]	
[X]	Silt/Clay	[X]	
[ ]	Organic	[ ]	

Floodplain Width:

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

Dominant Vegetation:
[ ] Forested
Species: Red maple, "
[ ] Shrub
Species: Rosa multiflora, Cornus ammomum
[ ] Herbaceous
Species: _____

Wildlife Observed/Notes:

Sketch:

Tetra Tech Stream Data Sheet

Surveyors: Eckwahl / CARVER Date: 12/5/18 Resource ID Number: S6R
Project: PPP Reroute State: PA County: Cambria
Photo Number (s): _____ Canopy Cover: 50 %

Flow Direction: S **Bank Width:** 1 feet **Water Width:** 1 feet
High Water Depth: 1 feet **Water Depth:** 1" ~~feet~~ **Turbidity:** CLEAR

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

Sinuosity:
[X] Low
[ ] Medium
[ ] High

Features:
[X] Riffles [ ] Sand/Mud Bar [ ] Run/Glide
[ ] Pools [ ] Gravel Bar [ ] Braided
[ ] Rapids [ ] Aquatic Vegetation [ ] Other _____

Substrate:
[ ] Bedrock ___%
[ ] Boulder ___%
[ ] Cobble/Gravel ___%
[ ] Sand ___%
[X] Silt/Clay 100 %
[ ] Organic ___%

Bank Substrate:
Height: Left 4 Right 4

[ ]	Bedrock	[ ]
[ ]	Boulder	[ ]
[ ]	Gravel	[ ]
[ ]	Sand	[ ]
[X]	Silt/Clay	[X]
[ ]	Organic	[ ]

Floodplain Width:

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

Dominant Vegetation:
[X] Forested
Species: Blackcherry, Sugar maple
[ ] Shrub
Species: _____
[ ] Herbaceous
Species: _____

Wildlife Observed/Notes:

Sketch:

Tetra Tech Stream Data Sheet

Surveyors: Eckwahl / Craven Date: 12/5/18 Resource ID Number: 57R
Project: PPP Reroute State: PA County: Cambria
Photo Number (s): _____ Canopy Cover: 60 %

Flow Direction: S **Bank Width:** 10 feet **Water Width:** 10 feet
High Water Depth: 3 feet **Water Depth:** 6" ~~feet~~ **Turbidity:** Clear

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

Sinuosity:
[ ] Low
[ ] Medium
[X] High

Features:
[X] Riffles [ ] Sand/Mud Bar [X] Run/Glide
[X] Pools [ ] Gravel Bar [ ] Braided
[ ] Rapids [ ] Aquatic Vegetation [ ] Other _____

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

Bank Substrate:
Height: Left 6 Right 6

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

Floodplain Width:

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

Dominant Vegetation:
[ ] Forested
Species: _____
[ ] Shrub
Species: Salix discolor, Alder
[ ] Herbaceous
Species: Reed canary grass

Wildlife Observed/Notes:

Sketch:

Appendix S2.A-3

Excerpts from the Wetland Functions & Values Assessment

Wetland Function-Value Evaluation Form

Total area of wetland 0.11 ac. Human made? No Is wetland part of a wildlife corridor? No or a "habitat island"? No

Adjacent land use wetland, forest, residential, agriculture Distance to nearest roadway or other development 70 ft.

Dominant wetland systems present PEM Contiguous undeveloped buffer zone present Yes

Is the wetland a separate hydraulic system? Yes If not, where does the wetland lie in the drainage basin?

How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. W2r

Latitude 40.414944 Longitude 78.872508

Prepared by: KB, TC Date 1/21/2019

Wetland Impact:
Type see permit tables Area 0.10 acres

Evaluation based on:
Office Field X

Corps manual wetland delineation completed? Y X N

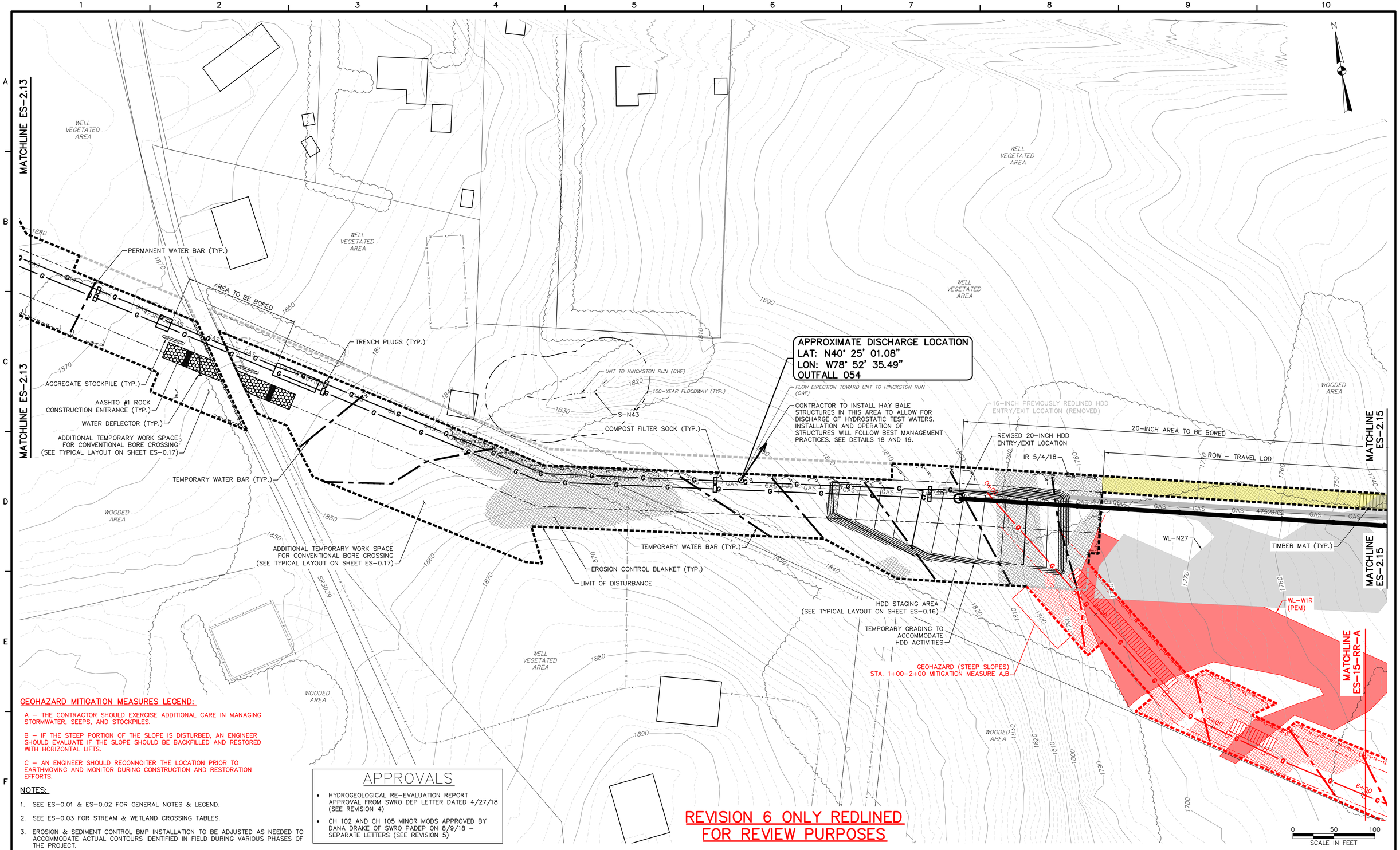
Function/Value	Suitability Y / N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	Y	1, 2, 7, 9	X	
Floodflow Alteration	Y	13		
Fish and Shellfish Habitat	Y	1, 8, 14, 16, 17	X	Associated perrenial stream is shallow but contains pools and riffles; drains to ATW/TNR stream.
Sediment/Toxicant Retention	Y	1, 2, 6, 9	X	
Nutrient Removal	Y	7, 9		
Production Export	N			
Sediment/Shoreline Stabilization	Y	7, 10		
Wildlife Habitat	Y	3, 4		
Recreation	N			
Educational/Scientific Value	N			
Uniqueness/Heritage	Y	7, 22		
Visual Quality/Aesthetics	N			
ES Endangered Species Habitat	N			
Other				

Notes:

* Refer to backup list of numbered considerations.

ATTACHMENT D

Applicable 102 Drawings
(E&S and Restoration)



GEOHAZARD MITIGATION MEASURES LEGEND:

A – THE CONTRACTOR SHOULD EXERCISE ADDITIONAL CARE IN MANAGING STORMWATER, SEEPS, AND STOCKPILES.

B – IF THE STEEP PORTION OF THE SLOPE IS DISTURBED, AN ENGINEER SHOULD EVALUATE IF THE SLOPE SHOULD BE BACKFILLED AND RESTORED WITH HORIZONTAL LIFTS.

C – AN ENGINEER SHOULD RECONNOITER THE LOCATION PRIOR TO EARTHMOVING AND MONITOR DURING CONSTRUCTION AND RESTORATION EFFORTS.

NOTES:

1. SEE ES-0.01 & ES-0.02 FOR GENERAL NOTES & LEGEND.
2. SEE ES-0.03 FOR STREAM & WETLAND CROSSING TABLES.
3. EROSION & SEDIMENT CONTROL BMP INSTALLATION TO BE ADJUSTED AS NEEDED TO ACCOMMODATE ACTUAL CONTOURS IDENTIFIED IN FIELD DURING VARIOUS PHASES OF THE PROJECT.

APPROVALS

- HYDROGEOLOGICAL RE-EVALUATION REPORT APPROVAL FROM SWRO DEP LETTER DATED 4/27/18 (SEE REVISION 4)
- CH 102 AND CH 105 MINOR MODS APPROVED BY DANA DRAKE OF SWRO PADEP ON 8/9/18 – SEPARATE LETTERS (SEE REVISION 5)

REVISION 6 ONLY REDLINED FOR REVIEW PURPOSES

TETRA TECH
www.tetratech.com
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

REVISIONS

NO.	BY	DATE	REMARKS
1	RS	3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS
2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD
3	RS	5/28/17	REVISED REDUCTION IN LOD BASED ON LANDOWNER AGREEMENT
4	RS	3/30/18	GOLDFINCH HDD EXTENSION ON EAST SIDE OF DRILL
5	RS	8/1/18	ADDED IR
6	RS	12/20/18	16-INCH RE-ROUTE

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ROBERT F. SIMCIK

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT CONSTRUCTION SPREAD 2

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
SHEET 14 OF 75

DATE:	2/6/2017
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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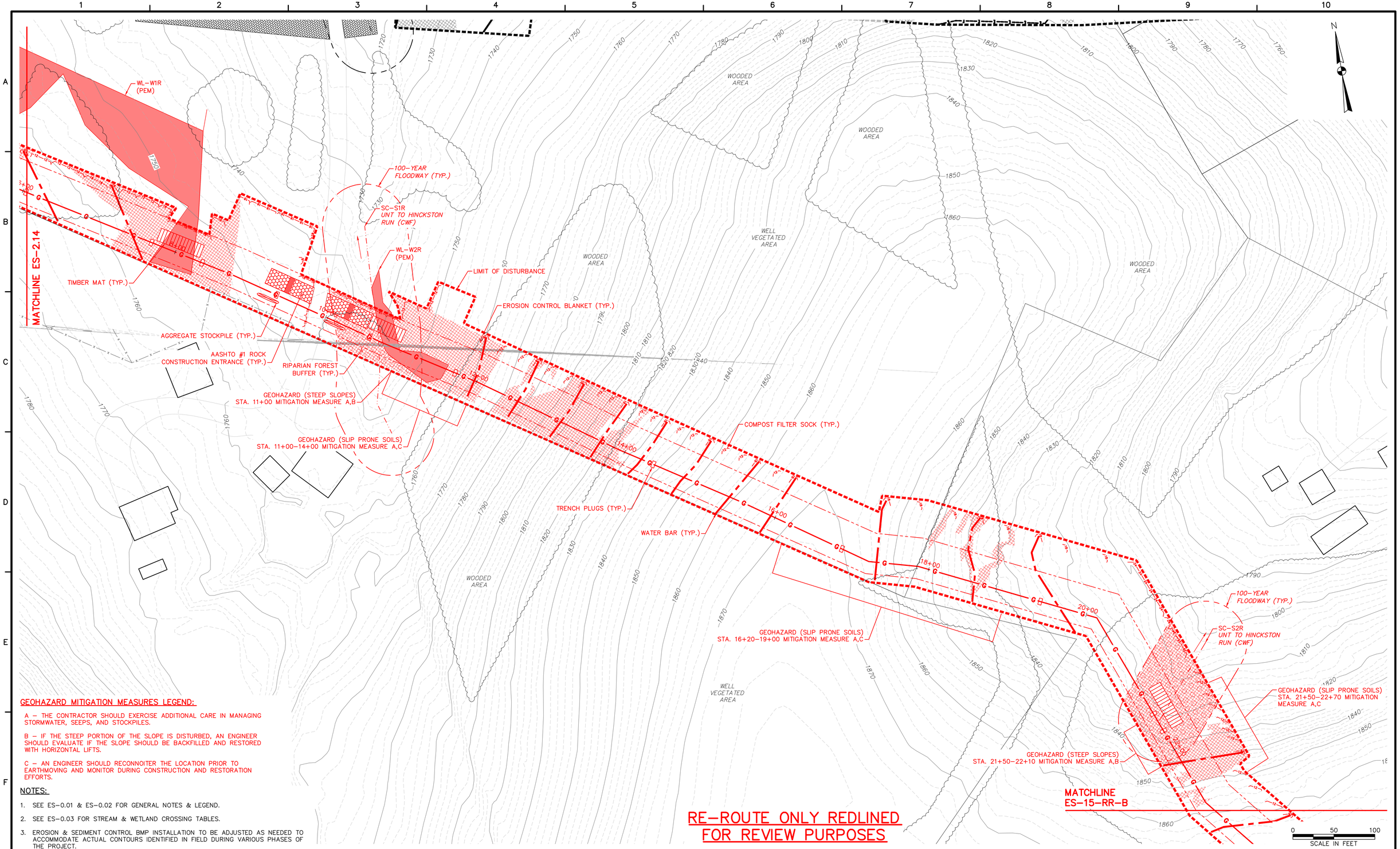
ES-2.14
SHEET 2.14 OF 102

R:_Marcellus Shale Projects\Sunoco\5958 – Penn Pipeline Project\5 – Cambria\E&S_Goldfinch MOD\5958ES002.14.dwg PIT NICHOLE.NAJESKI 2/1/2019 5:09:29 PM



GEOHAZARD MITIGATION MEASURES LEGEND:

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NOTES:

1. SEE ES-0.01 & ES-0.02 FOR GENERAL NOTES & LEGEND.
2. SEE ES-0.03 FOR STREAM & WETLAND CROSSING TABLES.
3. EROSION & SEDIMENT CONTROL BMP INSTALLATION TO BE ADJUSTED AS NEEDED TO ACCOMMODATE ACTUAL CONTOURS IDENTIFIED IN FIELD DURING VARIOUS PHASES OF THE PROJECT.

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TETRA TECH
www.tetratech.com
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

REVISIONS

NO.	BY	DATE	REMARKS

COMMONWEALTH OF PENNSYLVANIA – REGISTERED PROFESSIONAL ENGINEER – ROBERT F. SIMCIK – 1/24/19

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 2

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
SHEET 15 OF 75

DATE:	2/6/2017
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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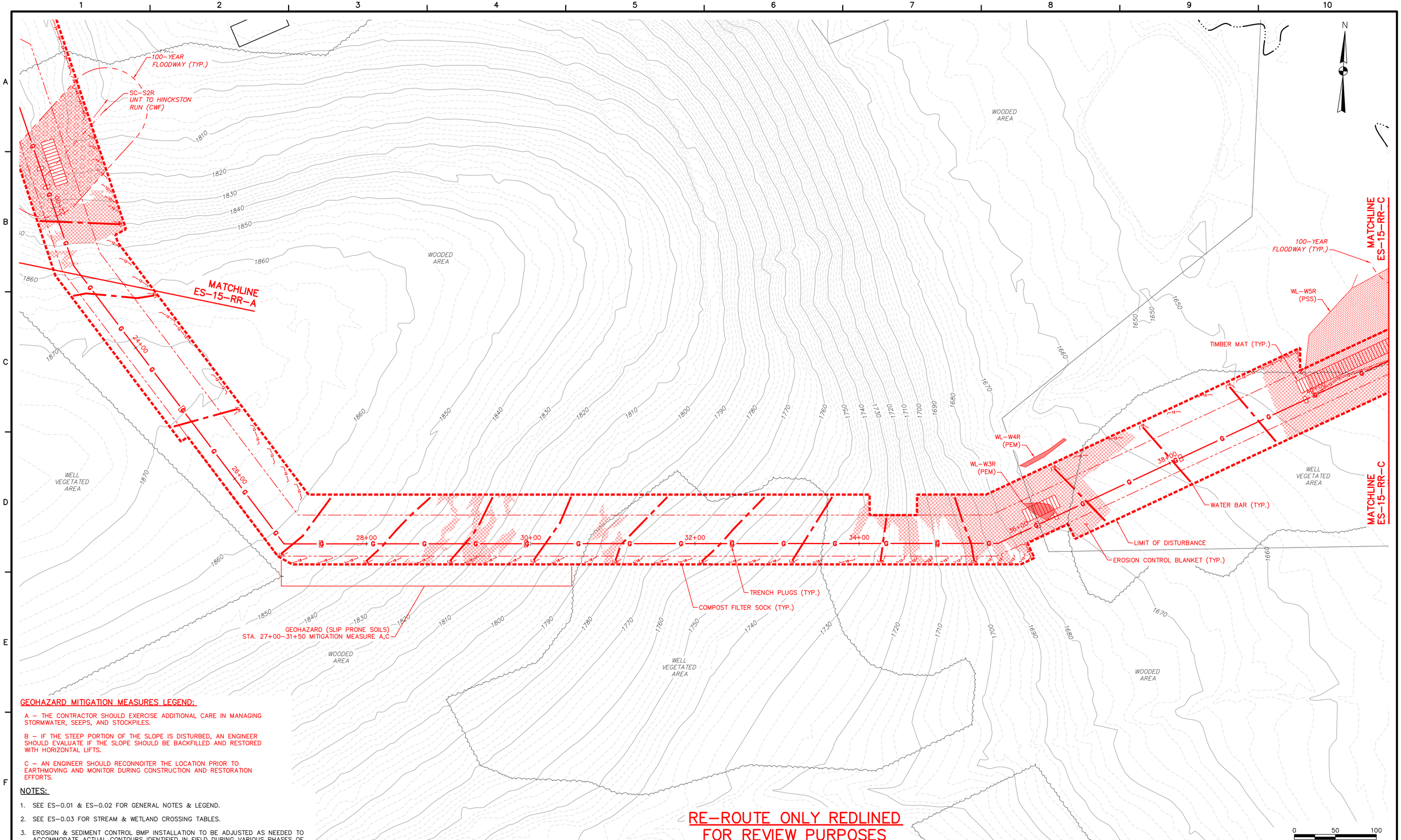
ES-15-RR-A
SHEET 2.15 OF 102

R:_Marcellus Shale Projects\Sunoco\5958 – Penn Pipeline Project\5 – Cambria\E&S_Goldfinch MOD\5958ES-RR-A.dwg PIT NICHOLE.NAJESKI 2/1/2019 4:43:42 PM



RE-ROUTE ONLY REDLINED FOR REVIEW PURPOSES

GEOHAZARD MITIGATION MEASURES LEGEND:

A – THE CONTRACTOR SHOULD EXERCISE ADDITIONAL CARE IN MANAGING STORMWATER, SEEPS, AND STOCKPILES.

B – IF THE STEEP PORTION OF THE SLOPE IS DISTURBED, AN ENGINEER SHOULD EVALUATE IF THE SLOPE SHOULD BE BACKFILLED AND RESTORED WITH HORIZONTAL LIFTS.

C – AN ENGINEER SHOULD RECONNOITER THE LOCATION PRIOR TO EARTHMOVING AND MONITOR DURING CONSTRUCTION AND RESTORATION EFFORTS.

NOTES:

1. SEE ES-0.01 & ES-0.02 FOR GENERAL NOTES & LEGEND.
2. SEE ES-0.03 FOR STREAM & WETLAND CROSSING TABLES.
3. EROSION & SEDIMENT CONTROL BMP INSTALLATION TO BE ADJUSTED AS NEEDED TO ACCOMMODATE ACTUAL CONTOURS IDENTIFIED IN FIELD DURING VARIOUS PHASES OF THE PROJECT.

TETRA TECH
www.tetratech.com
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

REVISIONS

NO.	BY	DATE	REMARKS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ROBERT F. SIMCIK 15949

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 2

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
SHEET 15 OF 75

DATE:	2/6/2017
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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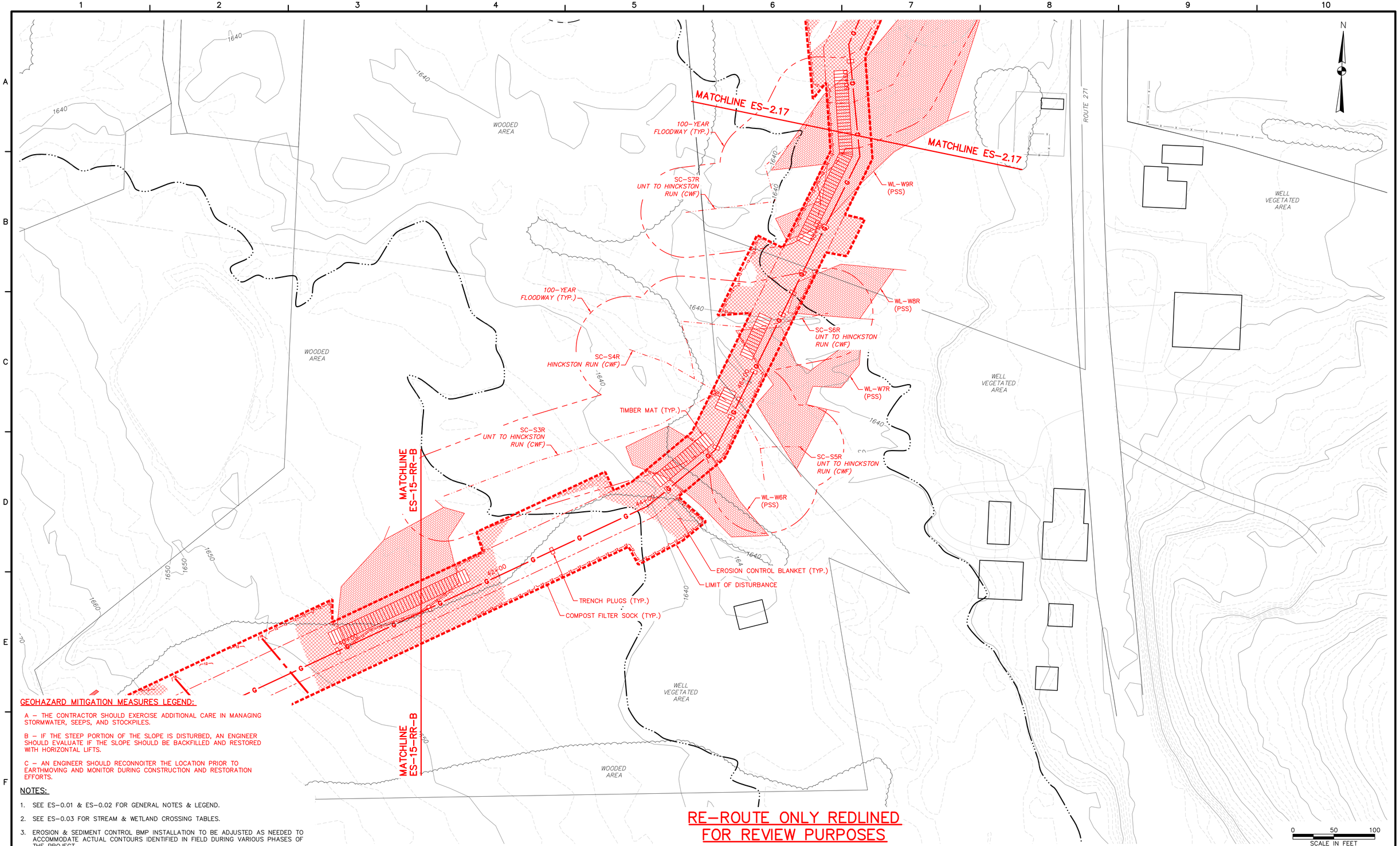
ES-15-RR-B
SHEET 2.15 OF 102

R:_Marcellus Shale Projects\Sunoco\5958 – Penn Pipeline Project\5 – Cambria\E&S_Goldfinch MOD\5958ES-RR-B.dwg PIT NICHOLE.NAJESKI 2/1/2019 4:43:47 PM



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SHEET 15 OF 75

DATE:	2/6/2017
PROJECT NO.:	112C05958
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ES-15-RR-C

R:_Marcellus Shale Projects\Sunoco\5958 – Penn Pipeline Project\5 – Cambria\E&S_Goldfinch MOD\5958ES-RR-C.dwg PIT NICHOLE.NAJESKI 2/1/2019 4:43:52 PM

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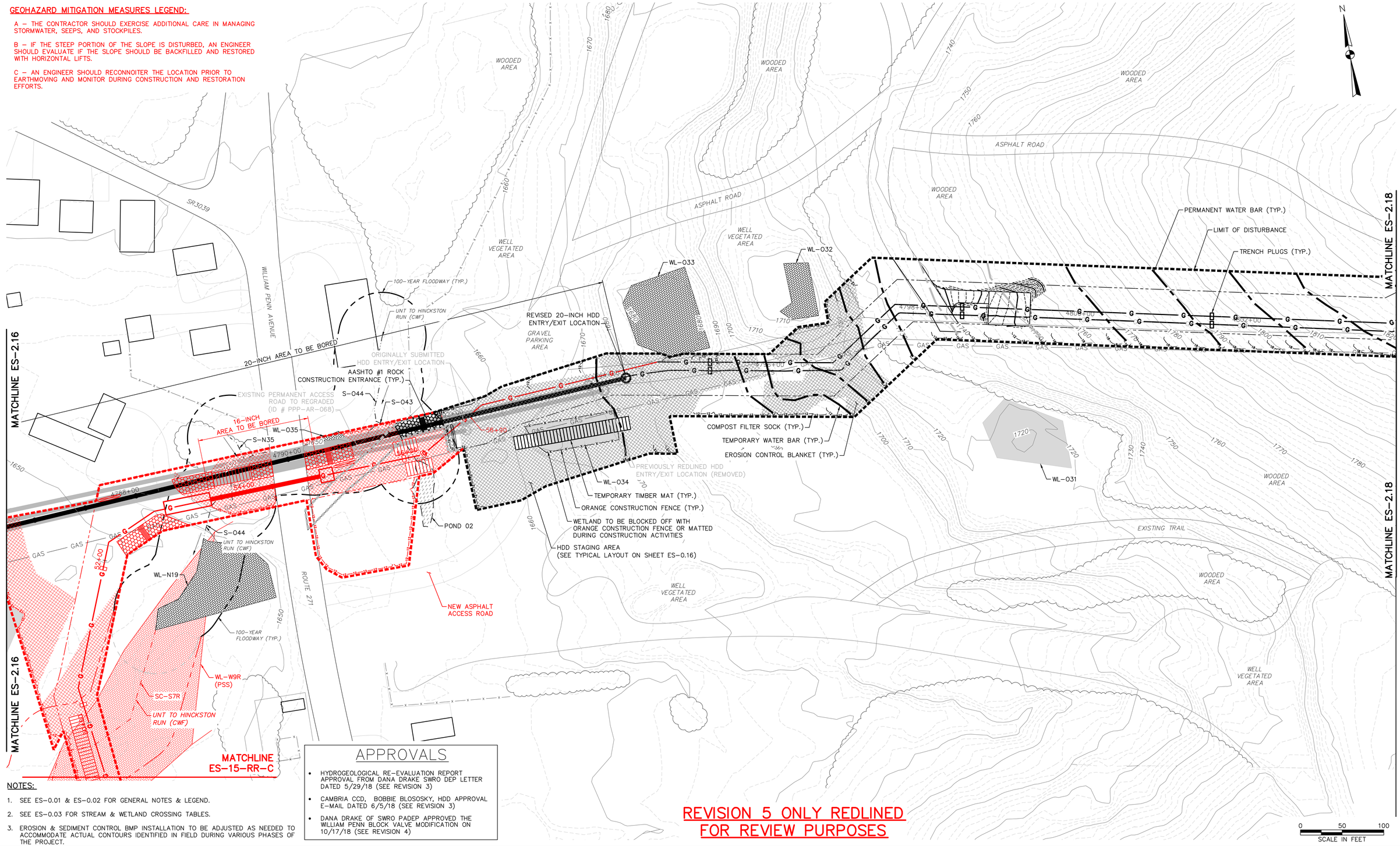

APPROVALS

- HYDROGEOLOGICAL RE-EVALUATION REPORT APPROVAL FROM DANA DRAKE SWRO DEP LETTER DATED 5/29/18 (SEE REVISION 3)
- CAMBRIA CCD, BOBBIE BLOSOSKY, HDD APPROVAL E-MAIL DATED 6/5/18 (SEE REVISION 3)
- DANA DRAKE OF SWRO PADEP APPROVED THE WILLIAM PENN BLOCK VALVE MODIFICATION ON 10/17/18 (SEE REVISION 4)

NOTES:

1. SEE ES-0.01 & ES-0.02 FOR GENERAL NOTES & LEGEND.
2. SEE ES-0.03 FOR STREAM & WETLAND CROSSING TABLES.
3. EROSION & SEDIMENT CONTROL BMP INSTALLATION TO BE ADJUSTED AS NEEDED TO ACCOMMODATE ACTUAL CONTOURS IDENTIFIED IN FIELD DURING VARIOUS PHASES OF THE PROJECT.

REVISION 5 ONLY REDLINED FOR REVIEW PURPOSES

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PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

REVISIONS

NO.	BY	DATE	REMARKS
1	RS	3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS
2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD
3	RS	5/21/18	WILLIAM PENN AVE REVISED HDD
4	RS	10/2/18	RELOCATED WILLIAM PENN AVE BLOCK VALVE
5	RS	1/11/19	16" RE-ROUTE & BORE ADDED

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ROBERT F. SIMCIK
PIONEER ENGINEER II
1/15/19

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT CONSTRUCTION SPREAD 2

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
SHEET 17 OF 75

DATE:	2/6/2017
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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ES-2.17
SHEET 2.17 OF 102

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PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 2

CAMBRIA COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL AND SITE RESTORATION PLAN

FEBRUARY 2017

DRAWING INDEX

SHEET No.	DRAWING TITLE
ES-0.01 TO ES-0.24	EROSION & SEDIMENT CONTROL & SITE RESTORATION PLAN NOTES & DETAILS
ES-0.25 TO ES-0.26	KEY PLAN
ES-2.01 TO ES-2.75	EROSION & SEDIMENT CONTROL & SITE RESTORATION PLANS
ES-2.76	ACCESS ROAD EROSION & SEDIMENT CONTROL & SITE RESTORATION PLAN

PREPARED BY:

TETRA TECH

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PREPARED FOR:

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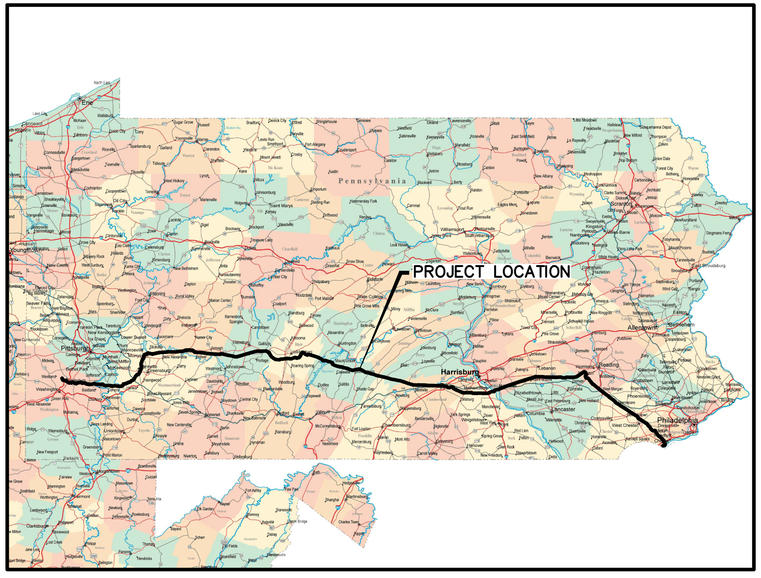

LOCATION MAP
PENNSYLVANIA PIPELINE PROJECT
HOUSTON, PENNSYLVANIA TO MARCUS HOOK, PENNSYLVANIA

GENERAL EROSION & SEDIMENT CONTROL PLAN NOTES:

1. TOPOGRAPHIC MAPPING AND FEATURES COMPILED FROM WWW.PASDA.PSU.EDU.
2. THE PROJECT TAKES PLACE WITHIN CAMBRIA COUNTY, PENNSYLVANIA.
3. TOWNSHIP BOUNDARIES TAKEN FROM WWW.PASDA.PSU.EDU.
4. 100-YEAR FEMA FLOODPLAINS TAKEN FROM WWW.PASDA.PSU.EDU.
5. SEE SHEET ES-0.02 FOR STREAM AND WETLAND CROSSING TABLE.
6. ~~A PRECONSTRUCTION MEETING IS REQUIRED PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY. THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, AND A REPRESENTATIVE FROM THE LOCAL PADEP OR CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING AT LEAST SEVEN DAYS IN ADVANCE.~~ FOR EARTH DISTURBANCE ACTIVITIES AUTHORIZED BY THIS PERMIT, AT LEAST ONE PRE-CONSTRUCTION MEETING IS REQUIRED. THE PERMITTEE SHALL CONTACT DEP TO SCHEDULE THE PRE-CONSTRUCTION MEETING AND PROVIDE AT LEAST SEVEN (7) DAYS' NOTICE OF THE PRE-CONSTRUCTION MEETING TO ALL INVITED ATTENDEES, UNLESS OTHERWISE APPROVED BY DEP IN WRITING. PERMITTEES, CO-PERMITTEES, OPERATORS, AND LICENSED PROFESSIONALS, OR DESIGNEES RESPONSIBLE FOR EARTH DISTURBANCE ACTIVITY, INCLUDING IMPLEMENTATION OF E&S, PCSM AND PPC PLANS AND CRITICAL STAGES OF IMPLEMENTATION OF THE APPROVED PCSM PLAN, SHALL ATTEND THE PRE-CONSTRUCTION MEETING(S). PERMITTEES, CO-PERMITTEES, OPERATORS AND LICENSED PROFESSIONALS ARE RESPONSIBLE FOR ENSURING THAT ALL ACTIVITIES ON THE SITE COMPLY WITH THE REQUIREMENTS OF THE PERMIT. (IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION VI OF THE APPROVED CHAPTER 102 PERMIT).
7. A COPY OF THE APPROVED E&S PLANS MUST BE AVAILABLE AT THE PROJECT SITES AT ALL TIMES.
8. AT LEAST THREE DAYS PRIOR TO STARTING EARTH DISTURBANCE ACTIVITY, ALL CONTRACTORS INVOLVED IN THESE ACTIVITIES SHALL NOTIFY PENNSYLVANIA ONE CALL SYSTEM, INC. AT 8-1-1. CONTRACTOR MUST RECEIVE ALL CLEARANCES BEFORE STARTING CONSTRUCTION ACTIVITIES.
9. PIPELINE LOCATIONS AND LIMIT OF DISTURBANCE (LOD) FROM SUNOCO PIPELINE L.P.
10. GENERAL LOCATION AND SPACING FOR WATER BARS ARE SHOWN ON THE PLAN. WATER BARS LOCATION MAY BE ADJUSTED IN THE FIELD DUE TO ACTUAL SITE CONDITIONS; HOWEVER, INSTALLATION AND SPACING MUST CONFORM TO THE DETAIL PROVIDED ON THE PLAN SHEET ES-0.08.
11. THE RIGHTS-OF-WAYS AND EASEMENTS SHOWN ON THIS PLAN ARE THE RESPONSIBILITY OF SUNOCO PIPELINE L.P. TO SECURE WITH THE INDIVIDUAL PROPERTY OWNER. THE RIGHTS-OF-WAY AND EASEMENTS SHOWN ON THIS PERMIT DRAWING REPRESENT THE BEST AVAILABLE PROPERTY INFORMATION AS PROVIDED TO TETRA TECH, INC. BY SUNOCO PIPELINE L.P. THE RIGHTS-OF-WAY AND EASEMENTS SHALL BE VERIFIED AND LOCATED IN THE FIELD BY SUNOCO PIPELINE L.P.
12. GENERAL E&S CONTROLS FOR SOIL STOCKPILE LOCATIONS ARE SHOWN ON THE TYPICAL DETAILS. ALONG THE ALIGNMENT, TOPSOIL WILL BE PUSHED TO ONE SIDE OF THE RIGHT OF WAY. THE TOPSOIL WILL BE PUSHED BACK DURING SITE RESTORATION. TOPSOIL WILL BE SEGREGATED AT ALL LOCATIONS THROUGHOUT THE PROJECT WHERE TOPSOIL EXISTS.
13. COMPOST FILTER SOCK INSTALLATION TO BE ADJUSTED AS NEEDED TO ACCOMMODATE ACTUAL CONTOURS IDENTIFIED IN FIELD DURING VARIOUS PHASES OF THE PROJECT.
14. IN-STREAM CONSTRUCTION IS RESTRICTED IN STOCKED TROUT STREAMS FROM MARCH 1 THROUGH JUNE 15 WHERE NOTED.
15. IN-STREAM CONSTRUCTION IS RESTRICTED IN WILD TROUT STREAMS FROM OCTOBER 1 THROUGH DECEMBER 31 WHERE NOTED.
16. THIS PROJECT WILL REQUIRE WATER FOR DUST CONTROL, PIPELINE CLEANING, HORIZONTAL DIRECTIONAL DRILLING AND HYDROSTATIC TESTING OF THE PIPELINE AND MAINLINE VALVES. ALL WATER FOR THESE ACTIVITIES WITHIN THE DELAWARE RIVER BASIN WILL BE SOURCED FROM MUNICIPAL WATER SOURCES. NO SURFACE WATER WITHDRAWAL WITHIN THE DELAWARE RIVER BASIN IS PROPOSED FOR THIS PROJECT.
17. ALL WATER USED FOR HYDROSTATIC TESTING OF THE PIPELINE AND MAINLINE VALVES WITHIN THE DELAWARE RIVER BASIN WILL BE DISCHARGED THROUGH THE DELAWARE COUNTY REGIONAL WATER QUALITY CONTROL AUTHORITY VIA SUNOCO FACILITIES AT MARCUS HOOK, DELAWARE COUNTY, PA.
18. PORTIONS OF THE PROJECT LOD HAVE BEEN DESIGNATED "TRAVEL LANES" WITH THE FOLLOWING CLASSIFICATIONS:
    A. TRAVEL AND CLEARING LOD – MECHANICAL CLEARING OF LAND BETWEEN HORIZONTAL DIRECTIONAL DRILL HDD WORKSPACES FOR LINE OF SIGHT AND, IN SOME CASES, ACCESS PURPOSES
    B. TRAVEL LOD – AREA NEEDED TO TRAVEL BETWEEN HORIZONTAL DIRECTIONAL DRILL WORKSPACES OR DOWN THE RIGHT-OF-WAY TO GET TO A HORIZONTAL DIRECTIONAL DRILL WORKSPACE
19. VOID MITIGATION PLAN FOR KARST TERRAIN AND UNDERGROUND MINING IS TO BE REVIEWED PRIOR TO CONSTRUCTION AND IMPLEMENTED AS NECESSARY OR REQUIRED THROUGHOUT CONSTRUCTION.
20. AT BLOCK VALVE SITES, FIELD SURVEYS WERE CONDUCTED TO ACCURATELY REFLECT FIELD CONDITIONS TO FACILITATE THE DESIGN OF THE SITES. THESE SURVEYS WERE CONDUCTED IN THE IMMEDIATE VICINITY OF THE PAD AND ROAD TO BE DESIGNED. DUE TO THE NATURE OF POST CONSTRUCTION STORMWATER DESIGN CRITERIA, SURVEY COULD NOT BE CONDUCTED FOR THE ENTIRE DRAINAGE AREAS AT EACH LOCATION. IN THESE AREAS, LIDAR DATA WAS SUBSTITUTED.

DRAWINGS BY TOWNSHIP

COUNTY	TOWNSHIP	PLAN SHEETS
CAMBRIA	JACKSON	ES-2.01 TO ES-2.30
	CAMBRIA	ES-2.30 TO ES-2.47
	MUNSTER	ES-2.47 TO ES-2.59
	CRESSON	ES-2.59 TO ES-2.71
	WASHINGTON	ES-2.71 TO ES-2.75

CAMBRIA COUNTY LIMIT OF DISTURBANCE/PROJECT AREA TABLE

	LIMIT OF DISTURBANCE	PROJECT AREA
LINEAR PORTION	244 ACRES	244 ACRES
EBENSBURG STATION	4.44 ACRES	4.44 ACRES
TOTAL	249.00 ACRES	249.00 ACRES

DETAIL INDICATOR

DETAIL NUMBER

SHEET SHOWN ON

LEGEND

- EXISTING 10' CONTOUR
- EXISTING 2' CONTOUR
- EXISTING TREE LINE
- EXISTING FENCELINE
- EXISTING STREAM WITH FLOW DIRECTION
- EXISTING ELECTRIC OVERHEAD
- EXISTING ELECTRIC UNDERGROUND
- EXISTING LIGHT POLE
- EXISTING WATER LINE
- EXISTING GAS LINE
- EXISTING DOMINION GAS LINE
- EXISTING SANITARY SEWER LINE
- EXISTING BUILDING
- PROPERTY LINE
- COUNTY BOUNDARY
- TOWNSHIP BOUNDARY
- 100-YEAR FLOODWAY
- 100-YEAR FEMA FLOODWAY
- 100-YEAR FEMA FLOODPLAIN
- WATERSHED BOUNDARY
- ORANGE CONSTRUCTION FENCE
- EXISTING PEM WETLAND
- EXISTING PFO WETLAND
- EXISTING PSS WETLAND
- PROPOSED PIPE LOCATION
- PROPOSED PERMANENT RIGHT-OF-WAY
- PROPOSED TEMPORARY RIGHT-OF-WAY
- PROPOSED TEMPORARY WORKSPACE
- RIPARIAN FOREST BUFFER
- OUTFALL FLOW DIRECTION ARROW
- LIMIT OF DISTURBANCE (ESCGP-2 PERMIT BOUNDARY)/ AREA TO BE RESTORED
- ROCK CONSTRUCTION ENTRANCE — 1 / 0.05
- ROCK CONSTRUCTION ENTRANCE WITH WASH RACKS — 3 / 0.05
- AGGREGATE STOCKPILE
- PERMANENT WATER BAR — 2 / 0.05
- TEMPORARY WATER BAR — 2 / 0.05
- EROSION CONTROL BLANKET — 4 / 0.05
- 12" COMPOST FILTER SOCK
- 18" COMPOST FILTER SOCK — 5 / 0.05
- 24" COMPOST FILTER SOCK
- COMPOST SOCK SEDIMENT TRAP — 6 / 0.06
- TRENCH PLUGS — 10 / 0.07
- TEMPORARY TIMBER MAT — 16 / 0.10
- TEMPORARY EQUIPMENT CROSSING — 15 / 0.10
- WATER DEFLECTOR — 13 / 0.07
- SPOIL STOCKPILE
- AREA TO BE BORED — HORIZONTAL DIRECTIONAL DRILL
- AREA TO BE BORED — CONVENTIONAL BORE
- ROW – TRAVEL AND CLEARING LOD
- ROW – TRAVEL LOD
- TEMPORARY UPSLOPE DIVERSION BERM
- TEMPORARY SLOPE PIPE
- A — TROUT STREAM RESTRICTION – NO IN-STREAM WORK BETWEEN OCT-DEC
- B — TROUT STREAM RESTRICTION – NO IN-STREAM WORK BETWEEN OCT-APR
- C — TROUT STREAM RESTRICTION – NO IN-STREAM WORK BETWEEN MAR-JUN & OCT-DEC
- D — TROUT STREAM RESTRICTION – NO IN-STREAM WORK BETWEEN MAR-JUN
- PFO — SPECIAL RESTORATION AREA – PFO TO PFO; SEE PFO RESTORATION PLANTING NOTES
- PSS — SPECIAL RESTORATION AREA – PSS TO PSS; SEE PSS RESTORATION NOTES
- SITE SPECIFIC PLAN DRAWING AREA. SITE SPECIFIC TOPOGRAPHIC SURVEY CONDUCTED IN THIS APPROXIMATE AREA. E&S CONTROL LAYOUT ON E&S PLAN MAY DIFFER FROM THE SITE SPECIFIC PLAN DUE ADDITIONAL SURVEY CONDUCTED IN THESE AREAS. SITE SPECIFIC PLAN SUPERSEDES E&S PLAN IN THESE AREAS.

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COMMONWEALTH OF PENNSYLVANIA — REGISTERED PROFESSIONAL ENGINEER — ROBERT F. SIMCIK — 3/28/17

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 2

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

DATE:	2/6/2017
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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SHEET 0.01 OF 102

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Stream ID	Stream Name	Coordinates	Flow Regime	Bank to Bank Width (feet)	Crossing Method	PAFBC Stream Designation	Siltation Impaired	E&S Plan Sheet Number
S-B06.1	UNT to Findley Run	40.4243, -78.9389	Perennial	16	Temporary Access Road/ Temporary Bridge	Drains to TNR	No	ES - 2.03
S-B06.4	UNT to North Branch Little Conemaugh River	40.4505, -78.6879	Perennial	8	Open Cut – Dry/ Flooded-in Only	Drains to ATW	No	ES - 2.47
S-B11/12	UNT to Little Conemaugh River	40.4459, -78.6369	Perennial	3.5	Open Cut – Dry	-	No	ES - 2.64
S-B11/14	UNT to Little Conemaugh River	40.4459, -78.6349	Perennial	12	Open Cut – Dry	-	No	ES - 2.64
S-B11/15	UNT to Little Conemaugh River	40.4459, -78.6344	Perennial	3.5	Open Cut – Dry/ Flooded-in Only	-	No	ES - 2.64
S-B11/16	UNT to Little Conemaugh River	40.4441, -78.6361	Perennial	3	Open Cut – Dry	-	No	ES - 2.65
S-B11/17	UNT to Little Conemaugh River	40.4434, -78.6368	Perennial	3	Open Cut – Dry	-	No	ES - 2.65
S-C01	UNT to Steve and Run	40.4370, -78.7635	Ephemeral	2	Open Cut – Dry/ Bore/ Temporary Bridge	Drains to STS, ATW, THR	No	ES - 2.34
S-C02	UNT to Steve and Run	40.4369, -78.7642	Ephemeral	2	Bore	Drains to STS, ATW, THR	No	ES - 2.34
S-C03	UNT to Steve and Run	40.437, -78.7655	Intermittent	2	Open Cut – Dry/ Flooded-in Only	Drains to STS, ATW, THR	No	ES - 2.34
S-C04	Steve and Run	40.4328, -78.7670	Perennial	15	Open Cut – Dry	ATW, THR, Drains to STS	No	ES - 2.31
S-C05	UNT to Steve and Run	40.4311, -78.7677	Perennial	4	Open Cut – Dry	ATW, THR, Drains to STS	No	ES - 2.31
S-C06	UNT to Steve and Run	40.4321, -78.7692	Intermittent	6	Open Cut – Dry	Drains to STS, ATW, THR	No	ES - 2.31
S-C07	UNT to Steve and Run	40.4326, -78.7753	Perennial	20	Open Cut – Dry	THR, Drains to STS, ATW	No	ES - 2.31, 2.32
S-C08	UNT to Steve and Run	40.4355, -78.7694	Perennial	6	HDD/Travel Lane	THR, Drains to STS, ATW, THR	No	ES - 2.33
S-K25	UNT to Little Conemaugh River	40.4328, -78.6134	Perennial	5	Open Cut – Dry/ Flooded-in Only	-	No	ES - 2.60
S-K26	UNT to Little Conemaugh River	40.4326, -78.6116	Intermittent	3	Open Cut – Dry/ Flooded-in Only	-	No	ES - 2.60
S-K27	UNT to Little Conemaugh River	40.4317, -78.6111	Perennial	12	Crossing/Temp. Bridge	-	No	ES - 2.60, 2.61
S-K28	UNT to Little Conemaugh River	40.4324, -78.6116	Ephemeral	3	Open Cut – Dry/ Flooded-in Only	-	No	ES - 2.60
S-K29	UNT to Little Conemaugh River	40.4323, -78.6114	Ephemeral	2	Open Cut – Dry/ Flooded-in Only/ Dry Crossing	-	No	ES - 2.60
S-K30	UNT to Little Conemaugh River	40.4326, -78.6111	Ephemeral	3	Crossing/Temp. Bridge	-	No	ES - 2.60
S-K31	UNT to Little Conemaugh River	40.4319, -78.6108	Ephemeral	3	Crossing/Temp. Bridge	-	No	ES - 2.60, 2.61
S-K32	UNT to Little Conemaugh River	40.4492	Intermittent	3	HDD/Open Cut – Flood-in Only	-	No	ES - 2.62
S-K33	UNT to Little Conemaugh River	40.4495, -78.6059	Perennial	12	HDD/Open Cut – Flood-in Only/ Flooded-in Only	-	No	ES - 2.61, 2.62
S-L16	UNT to Bear Rock Run	40.4195, -78.6744	Ephemeral	3	Open Cut – Dry	Drains to THR	No	ES - 2.71
S-L17	UNT to Bear Rock Run	40.4206, -78.6761	Ephemeral	3	Open Cut – Dry/ Flooded-in Only	Drains to THR	No	ES - 2.71
S-L32	UNT to Bear Rock Run	40.4223, -78.6803	Perennial	4	Open Cut – Dry/ Bore/ Travel Lane	Drains to THR	No	ES - 2.69
S-L34	UNT to Bear Rock Run	40.4092, -78.6307	Intermittent	8	Dry Crossing	Drains to THR	No	ES - 2.75
S-Q71	Bear Run	40.4092 -78.6305	Ephemeral	4	Dry Crossing	Drains to THR	No	ES - 2.75
S-M01	UNT to Bear Rock Run	40.4103, -78.6561	Intermittent	3	HDD, HDD Flooded-in	Drains to THR	No	ES - 2.73
S-M02	UNT to Bear Rock Run	40.4210, -78.6764	Ephemeral	3	Open Cut – Dry/ Flooded-in Only	Drains to THR	No	ES - 2.71
S-M03	UNT to Bear Rock Run	40.4237, -78.6767	Ephemeral	7	Open Cut – Dry	Drains to THR	No	ES - 2.70
S-B06.3	UNT to Bear Rock Run	40.4236, -78.6797	Intermittent	4	Open Cut – Dry/ Flooded-in Only	Drains to THR	No	ES - 2.70
S-M04	UNT to Bear Rock Run	40.4228, -78.6793	Ephemeral	3	Open Cut – Dry/ Flooded-in Only	Drains to THR	No	ES - 2.70
S-B06.6	UNT to Bear Rock Run	40.4275, -78.6779	Ephemeral	6	Open Cut – Dry	Drains to THR	No	ES - 2.70
S-B06.5	UNT to Bear Rock Run	40.4226, -78.6777	Intermittent	3	Open Cut – Dry/ Flooded-in Only	Drains to THR	No	ES - 2.70
S-M05	UNT to Burgoon Run	40.4230, -78.6862	Ephemeral	1	Open Cut – Dry	-	No	ES - 2.68
S-M06	Burgoon Run	40.4356, -78.6877	Perennial	12	Open Cut – Dry	-	No	ES - 2.67
S-M01	UNT to Burgoon Run	40.4374, -78.6892	Ephemeral	4	Open Cut – Dry/ Flooded-in Only	-	No	ES - 2.66
S-M02	UNT to Little Conemaugh River	40.4421, -78.6961	Perennial	12	Open Cut – Dry	-	No	ES - 2.65
S-M04	UNT to Little Conemaugh River	40.4426, -78.6963	Intermittent	5	Open Cut – Dry	-	No	ES - 2.65
S-N1	UNT to Hove elk Run	40.4489, -78.7125	Intermittent	6	Open Cut – Dry/ Bore/ Travel Lane	Drains to STS, ATW	No	ES - 2.43
S-N2	UNT to Hove elk Run	40.4498, -78.7126	Intermittent	5	Open Cut – Dry/ Flooded-in Only	Drains to STS, ATW	No	ES - 2.43
S-N3	UNT to Hove elk Run	40.4497, -78.7123	Ephemeral	3	Open Cut – Dry/ Flooded-in Only/ Bore/ Travel Lane	Drains to STS, ATW	No	ES - 2.43
S-N4	UNT to Hove elk Run	40.4497, -78.7093	Ephemeral	2	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.44
S-N5	UNT to Hove elk Run	40.4497, -78.7093	Ephemeral	3	Open Cut – Dry/ Flooded-in Only	Drains to STS, ATW	No	ES - 2.44
S-N6	UNT to Hove elk Run	40.4498, -78.7069	Ephemeral	4	Open Cut – Dry/ Flooded-in Only	Drains to STS, ATW	No	ES - 2.44
S-N7	UNT to Hove elk Run	40.4499, -78.7071	Intermittent	3	Open Cut – Dry/ Flooded-in Only	Drains to STS, ATW	No	ES - 2.44
S-N8	UNT to Hove elk Run	40.4492, -78.7066	Ephemeral	3	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.44
S-N9	UNT to Hove elk Run	40.4492, -78.7058	Ephemeral	5	Open Cut – Dry/ Flooded-in Only	Drains to STS, ATW	No	ES - 2.44
S-N10	UNT to Hove elk Run	40.4509, -78.7045	Perennial	6	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.44, 2.45
S-N11	UNT to Hove elk Run	40.4517, -78.7048	Intermittent	5	Open Cut – Dry/ Flooded-in Only	Drains to STS, ATW	No	ES - 2.44
S-N12	UNT to Hove elk Run	40.4510, -78.7048	Ephemeral	3	Open Cut – Dry/ Flooded-in Only	Drains to STS, ATW	No	ES - 2.44
S-N13	UNT to Hove elk Run	40.4519, -78.7005	Perennial	10	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.45
S-N14	UNT to Hove elk Run	40.4526, -78.7008	Perennial	6	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.45
S-N15	UNT to North Branch Little Conemaugh River	40.4527, -78.6985	Ephemeral	4	HDD Cleaning Only/ Flooded-in Only/Cleaning LOD	Drains to ATW	No	ES - 2.47
S-N16	UNT to North Branch Little Conemaugh River	40.4526, -78.6968	Intermittent	4	HDD Cleaning Only/ Flooded-in Only/Cleaning LOD	Drains to ATW	No	ES - 2.47
S-N17	UNT to North Branch Little Conemaugh River	40.4526, -78.6877	Perennial	6	HDD Cleaning Only/ Flooded-in Only/Cleaning LOD	Drains to ATW	No	ES - 2.47
S-N18	UNT to Novels Creek	40.4524, -78.6966	Intermittent	5	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.53
S-N19	UNT to Novels Creek	40.4522, -78.6891	Intermittent	7	Open Cut – Dry/ Flooded-in Only	Drains to STS, ATW	No	ES - 2.52
S-N20	UNT to Novels Creek	40.4524, -78.6896	Ephemeral	2	Open Cut – Dry/ Flooded-in Only	Drains to STS, ATW	No	ES - 2.52
S-N21	UNT to Novels Creek	40.4525, -78.6911	Perennial	5	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.52
S-N22	UNT to Novels Creek	40.4524, -78.6913	Intermittent	4	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.52
S-N25	UNT to North Branch Little Conemaugh River	40.4526, -78.6966	Intermittent	5	Open Cut – Dry	Drains to ATW	No	ES - 2.51
S-N26	UNT to North Branch Little Conemaugh River	40.4526, -78.6965	Ephemeral	3	Open Cut – Dry	Drains to ATW	No	ES - 2.51
S-N28	UNT to North Branch Little Conemaugh River	40.4524, -78.6969	Intermittent	3	Open Cut – Dry	Drains to ATW	No	ES - 2.51
S-N27	UNT to North Branch Little Conemaugh River	40.4526, -78.6961	Perennial	6	Open Cut – Dry	Drains to ATW	No	ES - 2.51

S-A29	UNT to North Branch Little Conemaugh River	40.4524, -78.6716	Perennial	10	Open Cut – Dry	Drains to ATW	No	ES - 2.50
S-A30	UNT to North Branch Little Conemaugh River	40.4526, -78.6716	Perennial	10	Open Cut – Dry/ Dry Crossing	Drains to ATW	No	ES - 2.50
S-A31	UNT to North Branch Little Conemaugh River	40.4528, -78.6708	Intermittent	4	Open Cut – Dry/ Flooded-in Only	Drains to ATW	No	ES - 2.49
S-A32	UNT to North Branch Little Conemaugh River	40.4528, -78.6709	Ephemeral	4	Open Cut – Dry/ Flooded-in Only	Drains to ATW	No	ES - 2.49
S-A33	UNT to North Branch Little Conemaugh River	40.4524, -78.6706	Perennial	15	Open Cut – Dry	Drains to ATW	No	ES - 2.49
S-A34	North Branch Little Conemaugh River	40.4525, -78.6652	Perennial	15	HDD/Travel Only	ATW	No	ES - 2.48
S-A06	UNT to Hinckston Run	40.4154, -78.663	Perennial	3	HDD	Drains to STS, ATW	No	ES - 2.16
S-A29	Hinckston Run	40.4157, -78.6607	Perennial	17	HDD	ATW, Drains to STS	No	ES - 2.16
S-A40	UNT to Hinckston Run	40.41.09, -78.6672	Ephemeral	4	HDD Flooded-in	Drains to ATW, STS	No	ES - 2.16
S-A41	UNT to Hinckston Run	40.4163, -78.6723	Intermittent	2	HDD/Travel Only	Drains to STS, ATW	No	ES - 2.15
S-A42	UNT to Hinckston Run	40.4164, -78.6732	Intermittent	2	HDD/Travel Only	Drains to STS, ATW	No	ES - 2.15
S-A43	UNT to Hinckston Run	40.4173, -78.6753	Ephemeral	3	Open Cut – Dry/ Flooded-in Only	Drains to STS, ATW	No	ES - 2.14
S-A45	UNT to Laurel Run	40.4194, -78.6848	Perennial	6	Open Cut – Dry	Drains to ATW, THR	No	ES - 2.13
S-A46	UNT to Laurel Run	40.4196, -78.6869	Perennial	HL 27	Open Cut – Dry	ATW, THR	No	ES - 2.12, 2.13
S-A47	Laurel Run	40.4196, -78.6891	Perennial	5	Open Cut – Dry/ Flooded-in Only	Drains to ATW, THR	No	ES - 2.13
S-A48	UNT to Laurel Run	40.4197, -78.6877	Perennial	10	Open Cut – Dry	Drains to ATW, THR	No	ES - 2.12
S-A49	UNT to Laurel Run	40.4207, -78.696	Perennial	6	Open Cut – Dry	Drains to ATW, THR	No	ES - 2.11
S-A50	UNT to Laurel Run	40.4208, -78.6962	Ephemeral	5	Open Cut – Dry	Drains to ATW, THR	No	ES - 2.11
S-A51	UNT to Laurel Run	40.4209, -78.6973	Perennial	15	Open Cut – Dry	Drains to ATW, THR	No	ES - 2.10, 2.11
S-A52	UNT to Laurel Run	40.4209, -78.6977	Perennial	12	Open Cut – Dry	Drains to ATW, THR	No	ES - 2.10
S-A53	UNT to Laurel Run	40.4223, -78.9062	Perennial	6	Open Cut – Dry	Drains to ATW, THR	No	ES - 2.09
S-A54	UNT to Laurel Run	40.4221, -78.9067	Ephemeral	3	Open Cut – Dry	Drains to ATW, THR	No	ES - 2.08
S-A55	UNT to Laurel Run	40.4221, -78.9067	Perennial	8	Open Cut – Dry/ Flooded-in Only	Drains to ATW, THR	No	ES - 2.09
S-A06	UNT to Findley Run	40.4247, -78.9248	Ephemeral	3	Open Cut – Dry	Drains to THR	No	ES - 2.06
S-A57	UNT to Findley Run	40.4248, -78.9276	Ephemeral	6	Open Cut – Dry/ Flooded-in Only	Drains to THR	No	ES - 2.05
S-A58	UNT to Findley Run	40.4251, -78.9297	Ephemeral	3	Open Cut – Dry/ Flooded-in Only	Drains to THR	No	ES - 2.05
S-A59	UNT to Findley Run	40.4256, -78.9301	Ephemeral	4	Open Cut – Dry	Drains to THR	No	ES - 2.05
S-A60	UNT to Findley Run	40.4262, -78.9052	Ephemeral	3	Open Cut – Dry/ Flooded-in Only	Drains to THR	No	ES - 2.04
S-A61	UNT to Findley Run	40.4265, -78.9086	Ephemeral	5	Open Cut – Dry/ Flooded-in Only	Drains to THR	No	ES - 2.03
S-A62	UNT to Findley Run	40.4270, -78.9447	Intermittent	3	Open Cut – Dry	Drains to THR	No	ES - 2.02
S-A63	UNT to Findley Run	40.4271, -78.9447	Perennial	5	Open Cut – Dry	Drains to THR	No	ES - 2.02
S-A64	UNT to Findley Run	40.4271, -78.9453	Perennial	5	Open Cut – Dry	Drains to THR	No	ES - 2.02
S-01	UNT to Noels Creek	40.4535, -78.6303	Ephemeral	2	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.57
S-02	UNT to Noels Creek	40.4535, -78.6308	Ephemeral	1	Open Cut – Dry/ Flooded-in Only	Drains to STS, ATW	No	ES - 2.56
S-03	UNT to Noels Creek	40.4535, -78.6337	Ephemeral	1	Open Cut – Dry/ Flooded-in Only	Drains to STS, ATW	No	ES - 2.56
S-04	UNT to Noels Creek	40.4530, -78.6361	Intermittent	5	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.56
S-05	UNT to Noels Creek	40.4528, -78.6368	Perennial	5	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.55, 2.56
S-06	UNT to Noels Creek	40.4529, -78.6386	Intermittent	3	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.55
S-07	UNT to Noels Creek	40.4530, -78.6425	Ephemeral	1	Open Cut – Dry/ Flooded-in Only	Drains to STS, ATW	No	ES - 2.55
S-08	UNT to Noels Creek	40.4526, -78.6427	Intermittent	4	Open Cut – Dry/ Flooded-in Only	Drains to STS, ATW	No	ES - 2.55
S-09	UNT to Noels Creek	40.4528, -78.6431	Intermittent	5	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.55
S-010	UNT to Noels Creek	40.4526, -78.6431	Intermittent	4	Open Cut – Dry/ Flooded-in Only	Drains to STS, ATW	No	ES - 2.55
S-011	UNT to Noels Creek	40.4522, -78.6472	Perennial	12	Open Cut – Dry	ATW, Drains to STS, ATW	No	ES - 2.54
S-012	UNT to Noels Creek	40.4526, -78.6473	Intermittent	4	Open Cut – Dry	ATW, Drains to STS, ATW	No	ES - 2.54
S-013	UNT to Noels Creek	40.4525, -78.6491	Ephemeral	1	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.54
S-014	UNT to Noels Creek	40.4529, -78.6518	Ephemeral	2	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.53
S-015	UNT to Hove elk Run	40.4477, -78.7113	Ephemeral	2	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.42
S-016	UNT to Hove elk Run	40.4477, -78.718	Ephemeral	4	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.42
S-017	UNT to Hove elk Run	40.4467, -78.7229	Perennial	46 ft	Open Cut – Dry	STS, Drains to ATW	No	ES - 2.41
S-018	UNT to Hove elk Run	40.4465, -78.7233	Intermittent	10	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.41
S-019	UNT to Hove elk Run	40.4464, -78.7238	Ephemeral	1	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.41
S-020	UNT to Hove elk Run	40.4463, -78.7239	Ephemeral	3	Open Cut – Dry/ Flooded-in Only	Drains to STS, ATW	No	ES - 2.41
S-021	Roaring Run	40.4452, -78.7298	Perennial	46 34	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.40
S-022	UNT to Roaring Run	40.4451, -78.7305	Intermittent	8	Open Cut – Dry/ Flooded-in Only	Drains to STS, ATW	No	ES - 2.40
S-023	UNT to Roaring Run	40.4447, -78.7314	Ephemeral	3	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.40
S-024	UNT to Roaring Run	40.4445, -78.7348	Ephemeral	5	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.39
S-025	UNT to Roaring Run	40.4436, -78.7358	Ephemeral	10	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.38
S-026	UNT to Roaring Run	40.4427, -78.7365	Intermittent	1	Open Cut – Dry/ Flooded-in Only	Drains to STS, ATW	No	ES - 2.38
S-027	UNT to Roaring Run	40.4421, -78.7442	Intermittent	5	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.38
S-028	UNT to Roaring Run	40.4413, -78.7484	Ephemeral	4	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.37
S-029	UNT to Roaring Run	40.4411, -78.7491	Perennial	4	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.37
S-030	UNT to Saltlick Run	40.4243, -78.8175	Perennial	22	Open Cut – Dry	Drains to THR	No	ES - 2.24, 2.25
S-031	UNT to Saltlick Run	40.4250, -78.8198	Ephemeral	2	Open Cut – Dry	Drains to THR	No	ES - 2.25
S-032	UNT to Saltlick Run	40.4248, -78.8146	Intermittent	5	Open Cut – Dry/ Flooded-in Only	Drains to THR	No	ES - 2.25
S-045	UNT to Saltlick Run	40.4250, -78.8175	Perennial	6	Open Cut – Dry	Drains to THR	No	ES - 2.24, 2.25
S-046	UNT to Saltlick Run	40.4246, -78.8166	Intermittent	4	Open Cut – Dry/ Flooded-in Only	Drains to THR	No	ES - 2.25
S-047	UNT to Saltlick Run	40.4245, -78.8178	Ephemeral	4	Open Cut – Dry/ Flooded-in Only	Drains to THR	No	ES - 2.24
S-048	UNT to Saltlick Run	40.4245, -78.8174	Intermittent	2	Open Cut – Dry	Drains to THR	No	ES - 2.24

S-049	UNT to Saltlick Run	40.4247, -78.8193	Intermittent	6	Open Cut – Dry/ Flooded-in Only	Drains to THR	No	ES - 2.24
S-050	UNT to Saltlick Run	40.4241, -78.8196	Intermittent	4	Open Cut – Dry	Drains to THR	No	ES - 2.24
S-051	UNT to Saltlick Run	40.4241, -78.8199	Ephemeral	4	Open Cut – Dry	Drains to THR	No	ES - 2.24
S-052	UNT to Saltlick Run	40.4240, -78.8201	Ephemeral	2	Open Cut – Dry	Drains to THR	No	ES - 2.24
S-053	UNT to Saltlick Run	40.4242, -78.8201	Ephemeral	2	Open Cut – Dry/ Flooded-in Only	Drains to THR	No	ES - 2.24
S-054	UNT to Saltlick Run	40.4071, -78.8646	Perennial	5	Open Cut – Dry	Drains to THR	No	ES - 2.27
S-055	UNT to Saltlick Run	40.4307, -78.7921	Intermittent	1.5	Open Cut – Dry	Drains to THR	No	ES - 2.29
S-056	UNT to Saltlick Run	40.4309, -78.7903	Intermittent	1	Open Cut – Dry/ Flooded-in Only	Drains to THR	No	ES - 2.29
S-057	UNT to Saltlick Run	40.4293, -78.8349	Perennial	4	Open Cut – Dry	Drains to THR	No	ES - 2.21
S-058	UNT to Saltlick Run	40.4195, -78.8416	Intermittent	7	Open Cut – Dry	Drains to THR	No	ES - 2.20
S-059	UNT to Saltlick Run	40.4196, -78.8418	Intermittent	4	Open Cut – Dry/ Flooded-in Only	Drains to THR	No	ES - 2.20
S-040	UNT to Hinckston Run	40.4173, -78.6482	Intermittent	2	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.18, 2.19
S-041	UNT to Hinckston Run	40.4176, -78.6489	Ephemeral	2	Open Cut – Dry	Drains to STS, ATW	No	ES - 2.19
S-042	UNT to Hinckston Run	40.4171, -78.6506	Ephemeral	2	Open Cut – Dry/ Flooded-in Only	Drains to STS, ATW	No	ES - 2.19
S-A05	UNT to Hinckston Run	40.4155, -78.661	Intermittent	2	HDD/ Permanent Access Road/ HDD Flooded-in	Drains to STS, ATW	No	ES - 2.17
S-043	UNT to Hinckston Run	40.4156, -78.6603	Intermittent	1	HDD/ Permanent Access Road/ HDD Existing Bore	Drains to STS, ATW	No	ES - 2.17
S-044	UNT to Hinckston Run	40.4156, -78.6609	Perennial	5	HDD/ Permanent Access Road/ HDD	Drains to STS, ATW	No	ES - 2.17
S-054	UNT to Saltlick Run	40.4236, -78.6213	Intermittent	7	Open Cut – Dry	Drains to THR	No	ES - 2.24
S-055	UNT to Saltlick Run	40.4252, -78.6203	Intermittent	2	Open Cut – Dry	Drains to THR	No	ES - 2.23
S-057	UNT to Saltlick Run	40.4254, -78.6229	Perennial	28	Open Cut – Dry/ Flooded-in Only	Drains to THR	No	ES - 2.23
S-058	UNT to Saltlick Run	40.4252, -78.6346	Ephemeral	1	Open Cut – Dry/ Flooded-in Only	Drains to THR	No	ES - 2.23
S-059	Saltlick Run	40.4227, -78.6258	Perennial	36 28	Open Cut – Dry	THR	No	ES - 2.23
S-060	UNT to Saltlick Run	40.4227, -78.6256	Ephemeral	4	Open Cut – Dry/ Flooded-in Only	Drains to THR	No	ES - 2.23
					158 Streams			

Wetland ID	USFWS Cowardin Classification	Coordinates	Crossing Method	Exceptional Value	E&S Plan Sheet Number
W139	PEM	40.4271, -78.9447	Open Cut	Wild Trout	ES - 2.02
W140	PEM	40.4269, -78.9459	Open Cut	Wild Trout	ES - 2.02
B067	PEM	40.4235, -78.5784	Open Cut	n/a	ES - 2.70
	PSS	40.4235, -78.5782	Open Cut	n/a	ES - 2.70
B069	PEM	40.4505, -78.6875	Open Cut Fence to Avoid	n/a	ES - 2.46
B1111	PEM	40.4365 -78.5569	Open Cut	n/a Wild Trout	ES 2.75
B1141	PEM	40.4459, -78.5954	Open Cut	n/a	ES - 2.64
B1142	PSS	40.4459, -78.5948	Open Cut	n/a	ES - 2.64
	PEM	40.4461, -78.5951	Open Cut	n/a	ES - 2.64
B1144	PEM	40.4455, -78.5940	Open Cut	n/a	ES - 2.64
	PSS	40.4457, -78.5946	Open Cut	n/a	ES - 2.64
B1145	PEM	40.4453, -78.5944	Open Cut	n/a	ES - 2.64
B1146	PSS	40.4444, -78.596	Open Cut	n/a	ES - 2.65
	PEM	40.4443, -78.5947	Open Cut	n/a	ES - 2.65
B1147	PEM	40.4442, -78.5952	Open Cut Bore/Temporary Matting	n/a	ES - 2.65
B1148	PEM	40.4435, -78.5959	Open Cut	n/a	ES - 2.65
CC2	PEM	40.4374, -78.7917	Open Cut	n/a	ES - 2.34
CC4	PEM	40.4368, -78.765	Open Cut	n/a Wild Trout	ES - 2.34
CC5	PEM	40.4330, -78.7822	Open Cut	Wild Trout	ES - 2.31
CC7	PEM	40.4333, -78.791	Open Cut	Wild Trout	ES - 2.31
CC12	PEM	40.4349, -78.7732	Open Cut	n/a	ES - 2.32
CC13	PEM	40.4350, -78.7726	Open Cut	n/a	ES - 2.32
CC15	PFO	40.4348, -78.7728	Open Cut	n/a	ES - 2.32
	PEM	40.4350, -78.7732	Open Cut	n/a	ES - 2.32
CC16	PEM	40.4356, -78.771	Open Cut HDD Travel Lane	n/a	ES - 2.33
CC17	PSS PEM PFO	40.4357, -78.7697 40.4358, -78.7693 40.4353, -78.7706	HDD/Travel Lane	Wild Trout	ES - 2.33
CC18	PEM	40.4351, -78.7716	Open Cut Temporary Matting	n/a	ES - 2.33
CC19	PEM	40.4351, -78.7721	Open Cut HDD/Temporary Matting	n/a	ES - 2.32
CC20	PEM	40.4346, -78.7749	Open Cut	n/a	ES - 2.32
CC21	PEM	40.4344, -78.775	Open Cut	Wild Trout	ES - 2.32
K27	PEM	40.4542, -78.6173	Open Cut	n/a RTE Plant	ES - 2.59
K28	PEM	40.4529, -78.6131	Open Cut/Temporary Matting	n/a	ES - 2.60
K30	PFO	40.4524, -78.6118	Open Cut	n/a	ES - 2.60
K31	PEM	40.4500, -78.6067	HDD	n/a	ES - 2.61, 2.62
	PFO	40.4497, -78.6065	HDD	n/a	ES - 2.61, 2.62
	PSS	40.4497, -78.6063	HDD	n/a	ES - 2.61, 2.62
L62	PFO	40.4121, -78.5626	HDD	RTE Plant	ES - 2.74
L63	PFO	40.4207, -78.5754	Open Cut	n/a	ES - 2.71
	PEM	40.4204, -78.5755	Open Cut	n/a	ES - 2.71
L64	PEM	40.4030, -78.5772	Open Cut	Wild Trout n/a	ES - 2.70, 2.71
L65	PEM	40.4252, -78.5807	Open Cut Bore/Travel Lane	Wild Trout n/a	ES - 2.69
	PFO	40.4253, -78.5804	Bore	Wild Trout n/a	ES - 2.69
L66	PEM	40.4301, -78.5638	Open Cut	n/a	ES - 2.68
L70A	PFO	40.4083, -78.5567	Open Cut	n/a	ES 2.75
M59	PEM	40.4135, -78.5656	HDD	n/a	ES - 2.73, 2.74
	PFO	40.4136, -78.5651	HDD	n/a	ES - 2.73, 2.74
M60	PSS	40.4245, -78.5795	Open Cut	n/a	ES - 2.70
M61	PEM	40.4341, -78.5874	Open Cut	n/a	ES - 2.67
	PSS	40.4346, -78.5875	Open Cut	n/a	ES - 2.67
N1	PEM	40.4491, -78.7124	Open Cut Travel Lane	n/a	ES - 2.43
	PFO	40.4486, -78.5573	Bore	n/a	ES - 2.43
N2	PEM	40.4496, -78.7086	Open Cut	n/a	ES - 2.44
			82 wetlands		

N4	PEM	40.4508, -78.7043	Open Cut	RTE Plant	ES - 2.44, 2.45
N5	PEM	40.4519, -78.7006	Open Cut	n/a	ES - 2.45
N6	PEM	40.4515, -78.7007	Open Cut	n/a	ES - 2.45
N8	PEM	40.4526, -78.6566	Open Cut	n/a	ES - 2.53
N9	PEM	40.4526, -78.6563	Open Cut	n/a	ES - 2.52
N10	PEM	40.4525, -78.661	Open Cut	n/a	ES - 2.52
N11	PEM	40.4525, -78.6624	Open Cut	n/a	ES - 2.51, 2.52
N12	PEM	40.4525, -78.6667	Open Cut	n/a	ES - 2.51
N14	PEM	40.4525, -78.6696	Open Cut	n/a	ES - 2.50, 2.51
N15	PEM	40.4525, -78.7051	Open Cut	n/a	ES - 2.50
N17	PEM	40.4526, -78.6791	Open Cut	n/a	ES - 2.49
N18	PEM	40.4528, -78.6847	HDD/Travel Lane	n/a	ES - 2.48
	PFO	40.4525, -78.6848	HDD	n/a	ES - 2.48
N20	PEM	40.4154, -78.8625	HDD	n/a	ES - 2.16
	PFO	40.4155, -78.8633	HDD	n/a	ES - 2.16
N24	PEM	40.4158, -78.8668	HDD	n/a	ES - 2.16
N25	PSS	40.4162, -78.8724	HDD/Travel Lane	n/a	ES - 2.15
N26	PEM	40.4162, -78.8729	HDD/Travel Lane	n/a	ES - 2.15
	PSS	40.4162, -78.873	HDD	n/a	ES - 2.15
N27	PEM	40.4164, -78.8743	HDD/Travel Lane	n/a	ES - 2.14, 2.15
N29	PFO	40.4195, -78.8845	Open Cut	n/a Wild Trout	ES - 2.13
	PEM	40.4196, -78.8846			
N30	PEM	40.4210, -78.8974	Open Cut	Wild Trout	ES - 2.10
N31	PEM	40.4211, -78.898	Open Cut	Wild Trout n/a	ES - 2.10
N33	PEM	40.4222, -78.9061	Open Cut	Wild Trout	ES - 2.09
O1	PEM	40.4537, -78.6275	Open Cut	n/a	ES - 2.57, 2.58
O2	P

AVOIDANCE MEASURES TABLE

Species or Area	Agency	County/AOC/ Survey Area	Population	Pre-Construction, Construction and Restoration, Post-Construction Activity	Clearance Letter	Conservation Plan
Timber Rattlesnake	PAFBC	Indiana, Cambria, Blair, Huntington, Juniata, Perry, Cumberland	NA	Construction	09/22/15	Timber Rattlesnake Conservation Plan (August 2015)
Timber Rattlesnake	PAFBC	Indiana, Cambria, Blair, Huntington, Juniata, Perry, Cumberland	NA	Construction	09/22/15	Timber Rattlesnake Conservation Plan (August 2015)
Timber Rattlesnake	PAFBC	Indiana, Cambria, Blair, Huntington, Juniata, Perry, Cumberland	NA	Construction	09/22/15	Timber Rattlesnake Conservation Plan (August 2015)
Timber Rattlesnake	PAFBC	Indiana, Cambria, Blair, Huntington, Juniata, Perry, Cumberland	NA	Construction	09/22/15	Timber Rattlesnake Conservation Plan (August 2015)
Timber Rattlesnake	PAFBC	Indiana, Cambria, Blair, Huntington, Juniata, Perry, Cumberland	NA	Construction	09/22/15	Timber Rattlesnake Conservation Plan (August 2015)
Timber Rattlesnake	PAFBC	Indiana, Cambria, Blair, Huntington, Juniata, Perry, Cumberland	NA	Construction	09/22/15	Timber Rattlesnake Conservation Plan (August 2015)
Timber Rattlesnake	PAFBC	Indiana, Cambria, Blair, Huntington, Juniata, Perry, Cumberland	NA	Construction Monitoring	09/22/15	Timber Rattlesnake Conservation Plan (August 2015)
Timber Rattlesnake	PAFBC	Indiana, Cambria, Blair, Huntington, Juniata, Perry, Cumberland	NA	Construction Monitoring	09/22/15	Timber Rattlesnake Conservation Plan (August 2015)
Timber Rattlesnake	PAFBC	Indiana, Cambria, Blair, Huntington, Juniata, Perry, Cumberland	NA	Construction Monitoring	09/22/15	Timber Rattlesnake Conservation Plan (August 2015)
Timber Rattlesnake	PAFBC	Indiana, Cambria, Blair, Huntington, Juniata, Perry, Cumberland	NA	Construction Monitoring	09/22/15	Timber Rattlesnake Conservation Plan (August 2015)
Timber Rattlesnake	PAFBC	Indiana, Cambria, Blair, Huntington, Juniata, Perry, Cumberland	NA	Construction Monitoring	09/22/15	Timber Rattlesnake Conservation Plan (August 2015)
Timber Rattlesnake	PAFBC	Indiana, Cambria, Blair, Huntington, Juniata, Perry, Cumberland	NA	Construction Monitoring	09/22/15	Timber Rattlesnake Conservation Plan (August 2015)
Timber Rattlesnake	PAFBC	Indiana, Cambria, Blair, Huntington, Juniata, Perry, Cumberland	NA	Construction Monitoring	09/22/15	Timber Rattlesnake Conservation Plan (August 2015)
Timber Rattlesnake	PAFBC	Indiana, Cambria, Blair, Huntington, Juniata, Perry, Cumberland	NA	Construction Monitoring	09/22/15	Timber Rattlesnake Conservation Plan (August 2015)

Species or Area	Agency	County/AOC/ Survey Area	Population	Pre-Construction, Construction and Restoration, Post-Construction Activity	Clearance Letter	Conservation Plan
Fish (Ghost Shiner, Brook Stickleback)	PAFBC	Washington/ Allegheny/ Cambria	NA	Construction	10/26/15	NA
Eastern Small-footed bat	PGC	Cambria, Blair, Huntingdon, and Perry	NA	Pre-Construction	06/08/16	Eastern Small-footed Bat Conservation Plan (January 2016)
Eastern Small-footed bat	PGC	Cambria, Blair, Huntingdon, and Perry	NA	Restoration	06/08/16	Eastern Small-footed Bat Conservation Plan (January 2016)
Eastern Small-footed bat	PGC	Cambria, Blair, Huntingdon, and Perry	NA	Restoration	06/08/16	Eastern Small-footed Bat Conservation Plan (January 2016)
Eastern Small-footed bat	PGC	Cambria, Blair, Huntingdon, and Perry	NA	Restoration	06/08/16	Eastern Small-footed Bat Conservation Plan (January 2016)
Eastern Small-footed bat	PGC	Cambria, Blair, Huntingdon, and Perry	NA	Restoration	06/08/16	Eastern Small-footed Bat Conservation Plan (January 2016)
Eastern Small-footed bat	PGC	Cambria, Blair, Huntingdon, and Perry	NA	Monitoring	06/08/16	Eastern Small-footed Bat Conservation Plan (January 2016)
Northeastern Bulrush	USFWS	Cambria	NA	Construction	10/31/16	North-eastern Bulrush Conservation Plan (September 2015)
Northeastern Bulrush	USFWS	Cambria	NA	Monitoring	10/31/16	North-eastern Bulrush Conservation Plan (September 2015)
Northeastern Bulrush	USFWS	Cambria	NA	Construction	10/31/16	North-eastern Bulrush Conservation Plan (September 2015)
Northeastern Bulrush	USFWS	Cambria	NA	Monitoring	10/31/16	North-eastern Bulrush Conservation Plan (September 2015)
Northeastern Bulrush	USFWS	Cambria	NA	Reporting	10/31/16	North-eastern Bulrush Conservation Plan (September 2015)
Bog turtle	USFWS	All	NA	Construction, Restoration	10/31/16	Bog Turtle Conservation Plan (April 2016)
Bog turtle	USFWS	All	NA	Construction, Restoration	10/31/16	Bog Turtle Conservation Plan (April 2016)

Species or Area	Agency	County/AOC/ Survey Area	Population	Pre-Construction, Construction and Restoration, Post-Construction Activity	Clearance Letter	Conservation Plan
Indiana bat	USFWS	Allegheny, Westmoreland, Cambria, Huntingdon, and Blair	NA	Pre-Construction	10/31/16	Myotis Conservation Plan (April 2016)
Andropogon glomeratus	PADCNR	Cambira/AOC W10	Population 9	Construction	11/15/15	Conservation Plan for Identified Species [Plants] of Special Concern (November 2015)
Andropogon glomeratus	PADCNR	Cambria/AOC W10 and AOC ALT W1	Population 3	Construction	11/15/15	Conservation Plan for Identified Species [Plants] of Special Concern (November 2015)
Andropogon glomeratus	PADCNR	Cambria/AOC W10 and AOC ALT W1	Population 1	Construction	11/15/15	Conservation Plan for Identified Species [Plants] of Special Concern (November 2015)
Andropogon glomeratus	PADCNR	Cambria/AOC W10 and AOC ALT W1	Population 2	Construction	11/15/15	Conservation Plan for Identified Species [Plants] of Special Concern (November 2015)
Andropogon glomeratus	PADCNR	Cambria/AOC W10 and AOC ALT W1	Population 4	Construction	11/15/15	Conservation Plan for Identified Species [Plants] of Special Concern (November 2015)
Actaea podocarpa	PADCNR	Cambria/ between AOC W10 and AOC ALT W2	Population 1	Construction	11/15/15	Conservation Plan for Identified Species [Plants] of Special Concern (November 2015)
Actaea podocarpa	PADCNR	Cambria/ between AOC W10 and AOC ALT W1	Population 1	Pre-Construction, Construction, Restoration	11/15/15	Conservation Plan for Identified Species [Plants] of Special Concern (November 2015)
Viola appalachiensis	PADCNR	Cambria/ between AOC W10 and AOC ALT W0	Population 2	Pre-Construction, Construction	11/15/15	Conservation Plan for Identified Species [Plants] of Special Concern (November 2015)
Viola appalachiensis	PADCNR	Cambria/ between AOC W10 and AOC ALT W1	Population 3	Pre-Construction, Construction	11/15/15	Conservation Plan for Identified Species [Plants] of Special Concern (November 2015)
Scirpus ancistrochaetus	PADCNR	Cambria/AOC ALT W1	Population 1	Construction	11/15/15	Conservation Plan for Identified Species [Plants] of Special Concern (November 2015)
Andropogon glomeratus	PADCNR	Cambria/AOC ALT W1	Population 5	Construction	11/15/15	Conservation Plan for Identified Species [Plants] of Special Concern (November 2015)

TETRA TECH
www.tetratech.com
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921–7090 | F: (412) 921–4040

REVISIONS

NO.	BY	DATE	REMARKS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ROBERT F. SIMCIK ENGINEER

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 2

1–20" & 1–16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

DATE:	2/6/2017
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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TEMPORARY EROSION AND SEDIMENT CONTROLS INSPECTION AND MAINTENANCE SCHEDULE

BMP	INSPECTION FREQUENCY	MAINTENANCE TO BE PERFORMED
COMPOST FILTER SOCK	WEEKLY AND AFTER RUNOFF EVENTS	MAINTENANCE SHALL BE PERFORMED AS NEEDED, SEDIMENT SHALL BE REMOVED ONCE IT HAS ACCUMULATED TO ONE HALF THE ORIGINAL HEIGHT OF THE BARRIER. COMPOST FILTER SOCK SHALL BE REPLACED WHENEVER IT HAS DETERIORATED TO SUCH AN EXTENT THAT THE EFFECTIVENESS OF COMPOST FILTER SOCK IS REDUCED. COMPOST FILTER SOCKS SHALL REMAIN IN PLACE UNTIL DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED. ALL SEDIMENT ACCUMULATION AT THE COMPOST FILTER SOCK SHALL BE REMOVED AND PROPERLY DISPOSED OF BEFORE THE COMPOST FILTER SOCK IS REMOVED.
ROCK CONSTRUCTION ENTRANCE	DAILY	CONTRACTOR SHALL MAINTAIN/REPLACE MATERIAL AS NEEDED THROUGHOUT CONSTRUCTION TO MAINTAIN EFFECTIVENESS AND SPECIFIED MINIMUM THICKNESS DURING USE OF ACCESS ROAD. A STOCKPILE OF ROCK WILL BE MAINTAINED ON SITE FOR THIS PURPOSE
MULCH STABILIZATION	WEEKLY AND AFTER RUNOFF EVENTS	REPLACE MULCH AS REQUIRED. RESTORE SEEDING IN AFFECTED AREA IF NECESSARY.
TIMBER MAT	WEEKLY AND AFTER RUNOFF EVENTS	INSPECT THE TIMBER MAT FOR EROSION AND MAKE ANY NECESSARY REPAIRS.
WATERBARS	WEEKLY AND AFTER RUNOFF EVENTS	WATERBARS SHALL BE INSPECTED WEEKLY (DAILY ON ACTIVE ROADS) AND AFTER EACH RUNOFF EVENT. DAMAGED OR ERODED WATERBARS SHALL BE RESTORED TO ORIGINAL DIMENSIONS WITHIN 24 HOURS OF INSPECTION.
PUMPED WATER FILTER BAGS	DAILY	FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME 1/2 FULL OF SEDIMENT. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

STANDARD EROSION AND SEDIMENT CONTROL PLAN NOTES:

1. ALL EARTH DISTURBANCES, INCLUDING CLEARING AND GRUBBING, CUTS, FILLS, TRENCHING, AND TEMPORARY ROAD CONSTRUCTION OR IMPROVEMENT, SHALL BE DONE IN ACCORDANCE WITH AN APPROVED E&S PLAN. A COPY OF THE APPROVED DRAWINGS (STAMPED, SIGNED AND DATED BY THE REVIEWING AGENCY) MUST BE AVAILABLE AT THE PROJECT SITE AT ALL TIMES. THE REVIEWING AGENCY SHALL BE NOTIFIED OF ANY CHANGES TO THE APPROVED PLAN PRIOR TO IMPLEMENTATION OF THOSE CHANGES. THE REVIEWING AGENCY MAY REQUIRE A WRITTEN SUBMITTAL OF THOSE CHANGES FOR REVIEW AND APPROVAL AT ITS DISCRETION.
2. ~~AT LEAST 7 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, INCLUDING CLEARING AND GRUBBING, THE OWNER AND/OR OPERATOR SHALL INVITE ALL CONTRACTORS, THE LANDOWNER, APPROPRIATE MUNICIPAL OFFICIALS, THE E&S PLAN PREPARER, THE PCSM PLAN PREPARER, THE LICENSED PROFESSIONAL RESPONSIBLE FOR OVERSIGHT OF CRITICAL STAGES OF IMPLEMENTATION OF THE PCSM PLAN, AND A REPRESENTATIVE FROM THE LOCAL CONSERVATION DISTRICT TO AN ON-SITE PRECONSTRUCTION MEETING.~~ FOR EARTH DISTURBANCE ACTIVITIES AUTHORIZED BY THIS PERMIT, AT LEAST ONE PRE-CONSTRUCTION MEETING IS REQUIRED. THE PERMITTEE SHALL CONTACT DEP TO SCHEDULE THE PRE-CONSTRUCTION MEETING AND PROVIDE AT LEAST SEVEN (7) DAYS' NOTICE OF THE PRE-CONSTRUCTION MEETING TO ALL INVITED ATTENDEES, UNLESS OTHERWISE APPROVED BY DEP IN WRITING. PERMITTEES, CO-PERMITTEES, OPERATORS, AND LICENSED PROFESSIONALS, OR DESIGNEES RESPONSIBLE FOR EARTH DISTURBANCE ACTIVITY, INCLUDING IMPLEMENTATION OF E&S, PCSM AND PPC PLANS AND CRITICAL STAGES OF IMPLEMENTATION OF THE APPROVED PCSM PLAN, SHALL ATTEND THE PRE-CONSTRUCTION MEETING(S). PERMITTEES, CO-PERMITTEES, OPERATORS AND LICENSED PROFESSIONALS ARE RESPONSIBLE FOR ENSURING THAT ALL ACTIVITIES ON THE SITE COMPLY WITH THE REQUIREMENTS OF THE PERMIT. (IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION VI OF THE APPROVED CHAPTER 102 PERMIT).
3. AT LEAST 3 DAYS PRIOR TO STARTING ANY EARTH DISTURBANCE ACTIVITIES, OR EXPANDING INTO AN AREA PREVIOUSLY UNMARKED, THE PENNSYLVANIA ONE CALL SYSTEM INC. SHALL BE NOTIFIED AT 1-800-242-1776 FOR THE LOCATION OF EXISTING UNDERGROUND UTILITIES.
4. ALL EARTH DISTURBANCE ACTIVITIES SHALL PROCEED IN ACCORDANCE WITH THE SEQUENCE PROVIDED ON THE PLAN DRAWINGS. DEVIATION FROM THAT SEQUENCE MUST BE APPROVED IN WRITING FROM THE LOCAL CONSERVATION DISTRICT OR BY THE DEPARTMENT PRIOR TO IMPLEMENTATION.

4A. THE STAGING OF EARTH DISTURBANCE ACTIVITIES AND MAINTENANCE REQUIREMENTS CONTAINED IN THE APPROVED E&S PLAN MUST BE FOLLOWED. (IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION II, CONDITION C OF THE APPROVED CHAPTER 102 PERMIT).

5. AREAS TO BE FILLED ARE TO BE CLEARED, GRUBBED, AND STRIPPED OF TOPSOIL TO REMOVE TREES, VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL.
6. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE. ~~GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.~~ GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING SHALL NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE E&S PLAN FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THE E&S PLAN. (IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION II, CONDITION F OF THE APPROVED CHAPTER 102 PERMIT).
7. AT NO TIME SHALL CONSTRUCTION VEHICLES BE ALLOWED TO ENTER AREAS OUTSIDE THE LIMIT OF DISTURBANCE BOUNDARIES SHOWN ON THE PLAN MAPS. THESE AREAS MUST BE CLEARLY MARKED AND/OR FENCED OFF BEFORE CLEARING AND GRUBBING OPERATIONS BEGIN.
8. TOPSOIL REQUIRED FOR THE ESTABLISHMENT OF VEGETATION SHALL BE STOCKPILED AT THE LOCATION(S) SHOWN ON THE PLAN MAPS(S) IN THE AMOUNT NECESSARY TO COMPLETE THE FINISH GRADING OF ALL EXPOSED AREAS THAT ARE TO BE STABILIZED BY VEGETATION. EACH STOCKPILE SHALL BE PROTECTED IN THE MANNER SHOWN ON THE PLAN DRAWINGS. STOCKPILE HEIGHTS SHALL NOT EXCEED 35 FEET. STOCKPILE SLOPES SHALL BE 2H:1V OR FLATTER. SEGREGATION OF TOPSOIL SHALL OCCUR WHERE TOPSOIL EXISTS WITHIN THE WORK AREA.
9. IMMEDIATELY UPON DISCOVERING UNFORESEEN CIRCUMSTANCES POSING THE POTENTIAL FOR ACCELERATED EROSION AND/OR SEDIMENT POLLUTION, THE OPERATOR SHALL IMPLEMENT APPROPRIATE BEST MANAGEMENT PRACTICES TO MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENT POLLUTION AND NOTIFY THE LOCAL CONSERVATION DISTRICT AND/OR THE REGIONAL OFFICE OF THE DEPARTMENT.
10. ~~ALL BUILDING MATERIALS AND WASTES SHALL BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED OF IN ACCORDANCE WITH THE DEPARTMENT'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE 260.1 ET SEQ., 271.1, AND 287.1 ET. SEQ. NO BUILDING MATERIALS OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT THE SITE.~~ ALL BUILDING MATERIALS AND WASTES MUST BE REMOVED FROM THE SITE AND RECYCLED OR DISPOSED IN ACCORDANCE WITH DEP'S SOLID WASTE MANAGEMENT REGULATIONS AT 25 PA. CODE CHAPTER 260A (RELATING TO HAZARDOUS WASTE MANAGEMENT SYSTEM: GENERAL), CHAPTER 271 (RELATED TO MUNICIPAL WASTE MANAGEMENT SYSTEM -- GENERAL PROVISIONS), AND CHAPTER 287 (RELATING TO RESIDUAL WASTE MANAGEMENT SYSTEM -- GENERAL PROVISIONS). NO BUILDING MATERIAL OR WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURNED, BURIED, DUMPED, OR DISCHARGED AT OR FROM THE SITE. (IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION V OF THE APPROVED CHAPTER 102 PERMIT).
11. ~~ALL OFF-SITE WASTE AND BORROW AREAS MUST HAVE AN E&S PLAN APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT FULLY IMPLEMENTED PRIOR TO BEING ACTIVATED.~~ AN E&S PLAN OR OTHER AUTHORIZATION MEETING THE REGULATORY REQUIREMENTS DETAILED IN 25 PA. CODE § 102.4(B) SHALL BE RECEIVED AND APPROVED BY DEP OR AN AUTHORIZED CONSERVATION DISTRICT AND IMPLEMENTED FOR ALL SPOIL AND BORROW AREAS, REGARDLESS OF THEIR LOCATIONS.(IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION VII, CONDITION A OF THE APPROVED CHAPTER 102 PERMIT).
12. ~~THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ANY MATERIAL BROUGHT ON SITE IS CLEAN FILL. FORM FP-001 MUST BE RETAINED BY THE PROPERTY OWNER FOR ANY FILL MATERIAL AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE BUT QUALIFYING AS CLEAN FILL DUE TO ANALYTICAL TESTING.~~ CLEAN FILL REQUIREMENTS -- ANY PERSON PLACING CLEAN FILL THAT HAS BEEN AFFECTED BY A SPILL OR RELEASE OF A REGULATED SUBSTANCE MUST USE DEP FORM FP-001 (CERTIFICATION OF CLEAN FILL) TO CERTIFY THE ORIGIN OF THE FILL MATERIAL AND THE RESULTS OF THE ANALYTICAL TESTING TO QUALIFY THE MATERIALS AS CLEAN FILL. THE FORM MUST BE RETAINED BY THE OWNER OF THE PROPERTY RECEIVING THE FILL. FILL MATERIAL NOT QUALIFYING AS CLEAN FILL IS REGULATED FILL AND MUST BE MANAGED IN ACCORDANCE WITH DEP'S MUNICIPAL OR RESIDUAL WASTE REGULATIONS BASED ON 25 PA. CODE CHAPTERS 271 OR 287, WHICHEVER IS APPLICABLE. (IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION VII, CONDITION B OF THE APPROVED CHAPTER 102 PERMIT).
13. ALL PUMPING OF WATER FROM ANY WORK AREA SHALL BE DONE ACCORDING TO THE PROCEDURE DESCRIBED IN THIS PLAN, OVER UNDISTURBED VEGETATED AREAS.

13A. UPON THE INSTALLATION OR STABILIZATION OF ALL PERIMETER SEDIMENT CONTROL BMPS AND AT LEAST THREE (3) DAYS PRIOR TO PROCEEDING WITH THE BULK EARTH DISTURBANCE ACTIVITIES, THE PERMITTEE OR THE CO-PERMITTEE SHALL PROVIDE NOTIFICATION TO DEP OR AN AUTHORIZED CONSERVATION DISTRICT. (IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION II, CONDITION D OF THE APPROVED CHAPTER 102 PERMIT).

STANDARD EROSION AND SEDIMENT CONTROL PLAN NOTES (CONTINUED):

14. UNTIL THE SITE IS STABILIZED, ALL EROSION AND SEDIMENT BMPS SHALL BE MAINTAINED PROPERLY. MAINTENANCE SHALL INCLUDE INSPECTIONS OF ALL EROSION AND SEDIMENT BMPS AFTER EACH RUNOFF EVENT AND ON A WEEKLY BASIS. ALL PREVENTATIVE AND REMEDIAL MAINTENANCE WORK, INCLUDING CLEAN OUT, REPAIR, REPLACEMENT, REGRADING, RESEEDING, RE-MULCH AND RE-NETTING MUST BE PERFORMED IMMEDIATELY. IF THE E&S BMPS FAIL TO PERFORM AS EXPECTED, REPLACEMENT BMPS, OR MODIFICATIONS OF THOSE INSTALLED WILL BE REQUIRED.
15. NO SOIL AMENDMENTS SUCH AS AGRICULTURAL LIME, FERTILIZER, ETC. WILL BE USED WITHIN WETLAND AREAS.
16. A LOG SHOWING DATES THAT E&S BMPS WERE INSPECTED AS WELL AS ANY DEFICIENCIES FOUND AND THE DATE THEY WERE CORRECTED SHALL BE MAINTAINED ON THE SITE AND BE MADE AVAILABLE TO REGULATORY AGENCY OFFICIALS AT THE TIME OF INSPECTION.
17. SEDIMENT TRACKED ONTO ANY PUBLIC ROADWAY OR SIDEWALK SHALL BE RETURNED TO THE CONSTRUCTION SITE AT THE END OF EACH DAY, OR AS NEEDED, OR AS DIRECTED BY THE CONSERVATION DISTRICT OR LOCAL MUNICIPALITY, AND DISPOSED IN THE MANNER DESCRIBED IN THIS PLAN. IN NO CASE SHALL THE SEDIMENT BE WASHED, SHOVELED, OR SWEPT INTO ANY ROADSIDE DITCH, STORM SEWER, OR SURFACE WATER.
18. ALL SEDIMENT REMOVED FROM BMPS SHALL BE DISPOSED OF IN THE MANNER DESCRIBED ON THE PLAN DRAWINGS.
19. IN AREAS OF TOPSOIL SEGREGATION THE TOPSOIL SHALL BE SCARIFIED TO A MINIMUM DEPTH OF 3 TO 5 INCHES -- 6 TO 12 INCHES ON COMPACTED SOILS -- PRIOR TO THE RESTORATION OF THE TOPSOIL. AREAS TO BE REVEGETATED SHALL HAVE A MINIMUM 4 INCHES OF TOPSOIL IN PLACE PRIOR TO SEEDING AND MULCHING. FILLOUT SLOPES SHALL HAVE A MINIMUM OF 2 INCHES OF TOPSOIL.
20. ALL FILLS SHALL BE COMPACTED AS REQUIRED TO REDUCE EROSION, SLIPPAGE, SETTLEMENT, SUBSIDENCE OR OTHER RELATED PROBLEMS. FILL INTENDED TO SUPPORT BUILDINGS, STRUCTURES AND CONDUITS, ETC. SHALL BE COMPACTED IN ACCORDANCE WITH LOCAL REQUIREMENTS OR CODES.
21. ALL EARTHEN FILLS SHALL BE PLACED IN COMPACTED LAYERS NOT TO EXCEED 8 INCHES IN THICKNESS.
22. FILL MATERIALS SHALL BE FREE OF FROZEN PARTICLES, BRUSH, ROOTS, SOD, OR OTHER FOREIGN OR OBJECTIONABLE MATERIALS THAT WOULD INTERFERE WITH OR PREVENT CONSTRUCTION OF SATISFACTORY FILLS.
23. FROZEN MATERIALS OR SOFT, MUCKY, OR HIGHLY COMPRESSIBLE MATERIALS SHALL NOT BE INCORPORATED INTO FILLS.
24. FILL SHALL NOT BE PLACED ON SATURATED OR FROZEN SURFACES.
25. SEEPS OR SPRINGS ENCOUNTERED DURING CONSTRUCTION SHALL BE HANDLED IN ACCORDANCE WITH THE STANDARD AND SPECIFICATION FOR SUBSURFACE DRAIN OR OTHER APPROVED METHOD.
26. ALL GRADED AREAS SHALL BE PERMANENTLY STABILIZED IMMEDIATELY UPON REACHING FINISHED GRADE. CUT SLOPES IN COMPETENT BEDROCK AND ROCK FILLS NEED NOT BE VEGETATED. SEEDED AREAS WITHIN 100 FEET OF A SPECIAL PROTECTION SURFACE WATER, OR AS OTHERWISE SHOWN ON THE PLAN DRAWINGS, SHALL BE BLANKETED ACCORDING TO THE STANDARDS OF THIS PLAN.
27. UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY WHERE CESSATION OF EARTH DISTURBANCE ACTIVITIES IN NON-SPECIAL PROTECTION WATERSHEDS WILL EXCEED 4 DAYS, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES IN A SPECIAL PROTECTION WATERSHEDS TEMPORARY STABILIZATION SHALL BE IMMEDIATE.
28. PERMANENT STABILIZATION IS DEFINED AS A MINIMUM UNIFORM, PERENNIAL 70% VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION. CUT AND FILL SLOPES SHALL BE CAPABLE OF RESISTING FAILURE DUE TO SLUMPING, SLIDING, OR OTHER MOVEMENTS.
29. E&S BMPS SHALL REMAIN FUNCTIONAL AS SUCH UNTIL ALL AREAS TRIBUTARY TO THEM ARE PERMANENTLY STABILIZED OR UNTIL THEY ARE REPLACED BY ANOTHER BMP APPROVED BY THE LOCAL CONSERVATION DISTRICT OR THE DEPARTMENT.
30. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT FOR AN INSPECTION PRIOR TO REMOVAL/CONVERSION OF THE E&S BMPS.
31. AFTER FINAL SITE STABILIZATION HAS BEEN ACHIEVED, TEMPORARY EROSION AND SEDIMENT BMPS MUST BE REMOVED OR CONVERTED TO PERMANENT POST CONSTRUCTION STORM WATER MANAGEMENT BMPS. AREAS DISTURBED DURING REMOVAL OR CONVERSION OF THE BMPS SHALL BE STABILIZED IMMEDIATELY. IN ORDER TO ENSURE RAPID REVEGETATION OF DISTURBED AREAS, SUCH REMOVAL/CONVERSIONS ARE TO BE DONE ONLY DURING THE GERMINATING SEASON. ~~THE THREE PERIOD BETWEEN THE TRENCH EXCAVATION TO THE BEGINNING OF DISTURBED AREA STABILIZATION FOR THE MAIN LINE PIPELINE INSTALLATION SHALL NOT EXCEED THIRTY (30) CALENDAR DAYS, UNLESS SUFFICIENT JUSTIFICATION FOR AN EXTENSION OF TIME IS PROVIDED TO AND APPROVED BY DEP IN WRITING.~~

31A. THE TIME PERIOD BETWEEN THE TRENCH EXCAVATION TO THE BEGINNING OF DISTURBED AREA STABILIZATION FOR THE MAIN LINE PIPELINE INSTALLATION SHALL NOT EXCEED THIRTY (30) CALENDAR DAYS, UNLESS SUFFICIENT JUSTIFICATION FOR AN EXTENSION OF TIME IS PROVIDED TO AND APPROVED BY DEP IN WRITING. UPON TEMPORARY CESSATION OF ANY EARTH DISTURBANCE ACTIVITY, INCLUDING TOPSOIL AND SOIL STOCKPILES, FOR WHICH THE CESSATION OF THE EARTH DISTURBANCE ACTIVITIES WILL EXCEED FOUR (4) CALENDAR DAYS, THE DISTURBED AREA SHALL BE TEMPORARILY STABILIZED IN ACCORDANCE WITH THE E&S PLAN AND WITH 25 PA. CODE § 102.22(B). PROPER E&S BMPS SHALL BE IMPLEMENTED AND MAINTAINED THROUGHOUT THE ENTIRE PROJECT UNTIL PERMANENT STABILIZATION AND NOTICE OF TERMINATION APPROVAL. (IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION XI OF THE APPROVED CHAPTER 102 PERMIT).

32. UPON COMPLETION OF ALL EARTH DISTURBANCE ACTIVITIES AND PERMANENT STABILIZATION OF ALL DISTURBED AREAS, THE OWNER AND/OR OPERATOR SHALL CONTACT THE LOCAL CONSERVATION DISTRICT TO SCHEDULE A FINAL INSPECTION.
33. FAILURE TO CORRECTLY INSTALL E&S BMPS, FAILURE TO PREVENT SEDIMENT-LADEN RUNOFF FROM LEAVING THE CONSTRUCTION SITE, OR FAILURE TO TAKE IMMEDIATE CORRECTIVE ACTION TO RESOLVE FAILURE OF E&S BMPS MAY RESULT IN ADMINISTRATIVE, CIVIL, AND/OR CRIMINAL PENALTIES BEING INSTITUTED BY THE DEPARTMENT AS DEFINED IN SECTION 602 OF THE PENNSYLVANIA CLEAN STREAMS LAW. THE CLEAN STREAMS LAW PROVIDES FOR UP TO$10,000 PER DAY IN CIVIL PENALTIES, UP TO $10,000 IN SUMMARY CRIMINAL PENALTIES, AND UP TO $25,000 IN MISDEMEANOR CRIMINAL PENALTIES FOR EACH VIOLATION.
34. ALL CHANNELS SHALL BE KEPT FREE OF OBSTRUCTIONS INCLUDING BUT NOT LIMITED TO FILL, ROCKS, LEAVES, WOODY DEBRIS, ACCUMULATED SEDIMENT, EXCESS VEGETATION, AND CONSTRUCTION MATERIAL/WASTES.
35. UNDERGROUND UTILITIES CUTTING THROUGH ANY ACTIVE CHANNEL SHALL BE IMMEDIATELY BACKFILLED AND THE CHANNEL RESTORED TO ITS ORIGINAL CROSS-SECTION AND PROTECTIVE LINING. ANY BASE FLOW WITHIN THE CHANNEL SHALL BE CONVEYED PAST THE WORK AREA IN THE MANNER DESCRIBED IN THIS PLAN UNTIL SUCH RESTORATION IS COMPLETE.
36. ~~EROSION CONTROL BLANKETING SHALL BE INSTALLED ON ALL SLOPES 3H:1V OR GREATER AND ALL AREAS, REGARDLESS OF SLOPE WITHIN 50 FEET OF NON-SPECIAL PROTECTION AND 100 FEET OF A SPECIAL PROTECTION SURFACE WATER AND ON ALL OTHER DISTURBED AREAS SPECIFIED ON THE PLAN MAPS AND/OR DETAIL SHEETS.~~ REGARDLESS OF SLOPE, EROSION CONTROL BLANKETS SHALL BE USED FOR ALL SEEDED AREAS WITHIN 100 FEET OF A HIGH QUALITY OR EXCEPTIONAL VALUE SURFACE WATER. FOR ALL SLOPES THAT ARE 3H:1V OR STEEPER OR WHERE POTENTIAL EXISTS FOR SEDIMENT POLLUTION TO RECEIVING WATERS, EROSION CONTROL BLANKETS SHALL BE USED FOR ALL SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER. (IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION II, CONDITION G OF THE APPROVED CHAPTER 102 PERMIT).
37. UPON COMPLETION OR TEMPORARY CESSATION OF THE EARTH DISTURBANCE ACTIVITY IN A SPECIAL PROTECTION WATERSHED, THAT PORTION OF THE PROJECT SITE TRIBUTARY TO THE SPECIAL PROTECTION WATERS MUST BE IMMEDIATELY STABILIZED.
38. IF COAL OR OTHER ACID-PRODUCING ROCK IS ENCOUNTERED AT THE PROJECT SITE, THE ACID PRODUCING ROCK WILL EITHER BE REMOVED FROM THE SITE OR HANDLED ONSITE. IF COAL OR OTHER ACID-PRODUCING ROCK MUST BE HANDLED ON SITE IS SHOULD BE SAMPLED AND ANALYZED FOR TOTAL PERCENT SULFUR IN ACCORDANCE WITH PADEPS GUIDANCE. ON-SITE HANDLING METHODS SHOULD BE BASED ON TESTING AND PADEP GUIDANCE.
39. IF A SINKHOLE IS ENCOUNTERED, REPAIR SHOULD BE DONE UNDER THE DIRECT OBSERVATION AND SUPERVISION OF A PROFESSIONAL GEOLOGIST OR LICENSED GEOTECHNICAL ENGINEER. SITE SPECIFIC SINKHOLE REPAIRS SHOULD BE DEVELOPED ON A CASE BY CASE BASIS.
40. IN-STREAM WORK TO OCCUR IN MINOR WATER BODIES (>10 FEET WIDE) WITHIN 24 HOURS, AND IN MAJOR WATER BODIES (10 TO 100 FEET WIDE) WITHIN 48 HOURS UNLESS APPROVED IN WRITING BY THE DEPARTMENT.

CONSTRUCTION SEQUENCE:

REFER TO THE E&SC PLAN DRAWINGS FOR THE LOCATION OF THE PROPOSED WORK AND THE ASSOCIATED BMPS. A GENERALIZED CONSTRUCTION SEQUENCE IS PROVIDED BELOW. THE CONSTRUCTION SEQUENCE IS INTENDED TO PROVIDE A GENERAL COURSE OF ACTION IN ORDER TO CONFORM TO THE APPLICABLE REGULATORY AGENCY REQUIREMENTS FOR TEMPORARY AND PERMANENT SOIL EROSION AND SEDIMENTATION CONTROLS. NECESSARY PARTS FOR PROPER AND COMPLETE EXECUTION OF WORK PERTAINING TO THIS PLAN, WHETHER SPECIFICALLY MENTIONED OR NOT, ARE TO BE PERFORMED BY THE CONTRACTOR. IT IS NOT INTENDED THAT THE DRAWINGS AND THIS REPORT SHOW DETAILED INFORMATION ON METHODS AND MATERIALS. THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS LISTED IN THIS SECTION. THE CONTRACTOR MAY BE REQUIRED TO ALTER CONTROLS BASED ON EFFECTIVENESS OF CONTROLS OR DIFFERING CONDITIONS ENCOUNTERED IN THE FIELD.

1. MAKE ALL APPROPRIATE NOTIFICATIONS AS INDICATED IN GENERAL NOTES ON PLAN SHEET ES-0.01.
2. FLAG OR FENCE PROJECT LIMITS OF DISTURBANCE AND APPROVED ACCESS. SIGN AND FLAG WETLAND BOUNDARIES AND STREAMS.
3. ORANGE CONSTRUCTION FENCE WILL BE PROVIDED AND INSTALLED AT WETLAND AREAS ADJACENT TO THE LOD AND NOT PLANNED TO BE IMPACTED TO IDENTIFY AND DETER CONSTRUCTION EQUIPMENT, VEHICLES AND PERSONNEL FROM ENTERING WETLAND.
4. LOCATE STAGING AREAS AND ACCESS POINTS INCLUDING CONSTRUCTION ENTRANCES. INSTALL COMPOST FILTER SOCKS DOWN SLOPE OF THESE AREAS.
5. INSTALL ROCK CONSTRUCTION ENTRANCES AS NEEDED. REFER TO THE ROCK CONSTRUCTION ENTRANCE DETAIL ON PLAN SHEET ES-0.06.
6. CONSTRUCT THE PROPOSED ACCESS ROADS AND IMPLEMENT TEMPORARY IMPROVEMENTS AS IDENTIFIED IN ACCESS ROAD SUMMARY TABLE AND DETAILED ON THE PLAN SHEETS.
7. INSTALL COMPOST FILTER SOCKS AS SHOWN ON THE CONSTRUCTION DRAWINGS. INSTALLATIONS SIZING, AND SPACING MUST CONFORM TO THE CHART AND DETAILS PROVIDED ON PLAN SHEET ES-0.06. INSTALL TEMPORARY UPSLOPE DIVERSIONS AND TEMPORARY SLOPE PIPES AS SHOWN ON PLAN SHEETS AND DETAILS.
8. CLEARING, GRUBBING, AND TOPSOIL STRIPPING SHALL COMMENCE ALONG THE PIPELINE ROUTE AND BE LIMITED TO THOSE AREAS DESCRIBED IN EACH STAGE OF THE CONSTRUCTION SEQUENCE.~~GENERAL SITE CLEARING, GRUBBING AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLAN.~~ FOR CLEARING, GRUBBING, AND TOPSOIL REMOVAL IN ALL STREAM, RIVER, WETLAND OR OTHER WATER BODY CROSSINGS, REFER TO CONSTRUCTION SEQUENCE NOTES BELOW. TOPSOIL WILL BE SEGREGATED AT LOCATIONS THROUGHOUT THE PROJECT WHERE TOPSOIL EXISTS.

8A. RIGHT OF WAY CLEARING CONSISTING OF FELLING OF TREES AND GRUBBING MAY BE COMPLETED BEFORE THE E&S BMPS ARE INSTALLED ON AREAS WHERE SLOPES OF 3H:1V OR GREATER ARE NOT PRESENT. ONCE THE GRUBBING STARTS PERIMETER E&S BMPS SHALL BE INSTALLED IN ACCORDANCE WITH THE PLAN DRAWINGS BY THE END OF THE DAY. IF HEAVY RAIN OCCURS DURING THE FELLING OF TREES AND GRUBBING PROCESS AND RUNOFF IS OBSERVED LEAVING THE RIGHT-OF-WAY, PERIMETER BMP'S MUST BE INSTALLED IMMEDIATELY AS OPPOSED TO THE END OF THE DAY. REGARDLESS OF SLOPE, EROSION CONTROL BLANKETS SHALL BE USED FOR ALL SEEDED AREAS WITHIN 100 FEET OF A HIGH QUALITY OR EXCEPTIONAL VALUE SURFACE WATER. FOR ALL SLOPES THAT ARE 3H:1V OR STEEPER OR WHERE POTENTIAL EXISTS FOR SEDIMENT POLLUTION TO RECEIVING WATERS, EROSION CONTROL BLANKETS SHALL BE USED FOR ALL SEEDED AREAS WITHIN 50 FEET OF A SURFACE WATER. IF SOCK IS DAMAGED DURING GRUBBING OR MULCHING SOCK WILL BE REPLACED. (IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION II, CONDITION G OF THE APPROVED CHAPTER 102 PERMIT).

8B. GENERAL SITE CLEARING, AND TOPSOIL STRIPPING MAY NOT COMMENCE IN ANY STAGE OF PHASE OF THE PROJECT UNTIL THE E&S BMPS SPECIFIED BY THE BMP SEQUENCE FOR THAT STAGE OR PHASE HAVE BEEN INSTALLED AND ARE FUNCTIONING AS DESCRIBED IN THIS E&S PLANS. (IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION II, CONDITION F OF THE APPROVED CHAPTER 102 PERMIT).

9. TEMPORARY WATERBARS OR APPROVED INTERCEPTOR DYKES WILL BE INSTALLED ALONG THE ALIGNMENT PRIOR TO PIPE INSTALLATION AT THE END OF EACH WORK DAY. DURING THE PERIODS OF TIME WHERE PIPE TRENCH IS OPEN CONTRACTORS WILL PROVIDE POSITIVE CONTROL OF ALL STORM WATER ON SITE, TEMPORARY WATERBARS WILL BE CONSTRUCTED BY THE END THE WORK DAY, OR DURING EACH WORK DAY IF REQUIRED CONTRACTOR WILL INSTALL SILT FENCE TO CONTROL EROSION UNTIL 70% VEGETATION GROWTH HAS BEEN ACHIEVED.
10. MINIMIZE TOTAL AREA OF DISTURBANCE. MAINTAIN TEMPORARY SOIL STOCKPILES WITHIN EXISTING SOIL EROSION AND SEDIMENT CONTROLS. SHOULD EXCAVATION ENTER STREAMS, FOLLOW SPECIFIC DETAILS FOR THESE AREAS SHOWN ON THE DRAWINGS AND INCLUDE THE STEPS DETAILED IN THE SPECIFIC SECTIONS BELOW. PULLBACK AREAS FOR HDDS WILL BE CLEARED AND PREPARED AS NEEDED TO SUPPORT STAGING, WELDING AND TESTING OF THE HDD PIPE SECTIONS. AREAS NOT UTILIZED FOR CONSTRUCTION ACTIVITIES SHOULD BE AVOIDED TO MINIMIZE IMPACTS.
11. INSTALL PIPE AND TRENCH PLUGS IN ACCORDANCE WITH DETAILS ON PLAN SHEET ES-0.08. WHEN OPEN CUTTING DRIVEWAYS AND ACCESS ROADS, CONTRACTOR SHALL HAVE ROAD PLATES AVAILABLE TO MAINTAIN ACCESS FOR LANDOWNERS. THE 20-INCH PIPELINE WILL BE INSTALLED FIRST, FOLLOWED BY THE 16-INCH LINE. ANY TEMPORARY STABILIZATION REQUIRED BETWEEN THE TWO INSTALLATIONS WILL BE IMPLEMENTED IN ACCORDANCE WITH THIS E&S PLAN. BOTH PIPELINES WILL BE INSTALLED WITHIN THE SAME LIMIT OF DISTURBANCE AND IN THE SAME CONSTRUCTION PERIOD.
12. FOR OPEN-CUT AREAS, THE LENGTH OF TIME REQUIRED TO CLEAR AND GRADE THE AREA, EXCAVATE THE TRENCH, INSTALL THE PIPELINES, BACKFILL THE TRENCH AND BEGIN STABILIZATION OF DISTURBED AREAS WILL NOT EXCEED 30 CALENDAR DAYS FOR MOST INSTALLATIONS. LONGER TIME PERIODS MAY BE APPROVED ON A CASE-BY-CASE BASIS.
13. BACKFILL EXCAVATED AREA AND COVER WITH TO

ALL PERMIT CONDTIONS SET FORTH IN THE E&S PERMIT NO. ESG 05000 15001 AND WATER OBSTRUCTION AND ENCROACHMENT PERMIT E11-352 MUST BE FOLLOWED

E&S PERMIT PART C, OTHER REQUIREMENTS

I. PROHIBITED DISCHARGES

A. ALL DISCHARGES COVERED BY THIS PERMIT SHALL BE COMPOSED ENTIRELY OF STORMWATER. DISCHARGES OF SUBSTANCES OTHER THAN STORMWATER MUST BE IN COMPLIANCE, WHEN REQUIRED, WITH AN NPDES PERMIT (OTHER THAN THIS PERMIT) ISSUED FOR THE DISCHARGE. DISCHARGES OF SEWAGE OR INDUSTRIAL WASTE TO WATERS OF THE COMMONWEALTH OR A BMP IS NOT PERMITTED.

B. THE PERMITTEE OR CO-PERMITTEE(S) MAY NOT DISCHARGE FLOATING MATERIALS, OIL, GREASE, SCUM, FOAM, SHEEN, AND SUBSTANCES WHICH: PRODUCE ODOR, TASTE, OR TURBIDITY OR SETTLE TO FORM DEPOSITS IN CONCENTRATIONS OR AMOUNTS SUFFICIENT TO BE, OR CREATE A DANGER OF BEING, INIMICAL TO THE WATER USES TO BE PROTECTED OR HUMAN, ANIMAL, PLANT, OR AQUATIC LIFE.

II. EROSION AND SEDIMENT CONTROL (E&S) PLANS

A. THE PERMITTEE SHALL IMPLEMENT ITS APPROVED E&S PLAN, INCLUDING ALL BMPS CONTAINED THEREIN. THE E&S PLAN IS INCORPORATED INTO THIS PERMIT.

B. E&S PLANS REQUIRED UNDER THIS PERMIT ARE CONSIDERED REPORTS THAT SHALL BE AVAILABLE TO THE PUBLIC UNDER SECTION 607 OF THE CLEAN STREAMS LAW (35 P.S. § 691.607). THE OWNER OR OPERATOR OF A FACILITY WITH STORMWATER DISCHARGES COVERED BY THIS PERMIT SHALL MAKE E&S PLANS AVAILABLE TO THE PUBLIC UPON REQUEST. E&S PLANS MUST BE MADE AVAILABLE AT THE SITE OF THE CONSTRUCTION ACTIVITY AT ALL TIMES.

E. ALL MANUFACTURED BMPS, INCLUDING EROSION CONTROL MATTING AND WATER QUALITY DEVICES, SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

J. FOR ALL DISCHARGES FROM THE PROJECT SITE ASSOCIATED WITH EARTH DISTURBANCE ACTIVITIES, THE PERMITTEE SHALL IMPLEMENT, MAINTAIN, REPAIR AND IF NECESSARY REPLACE BMPS TO MINIMIZE THE POTENTIAL FOR ACCELERATED EROSION AND SEDIMENTATION AND TO PROTECT, MAINTAIN, RECLAIM AND RESTORE WATER QUALITY AND EXISTING AND DESIGNATED USES.

III. POST-CONSTRUCTION STORMWATER MANAGEMENT (PCSM) PLANS

A. THE PERMITTEE SHALL IMPLEMENT ITS APPROVED PCSM PLAN, INCLUDING ALL BMPS CONTAINED THEREIN. THE PCSM PLAN IS INCORPORATED INTO THIS PERMIT.

B. PCSM PLANS REQUIRED UNDER THIS PERMIT ARE CONSIDERED REPORTS THAT SHALL BE AVAILABLE TO THE PUBLIC UNDER SECTION 607 OF THE CLEAN STREAMS LAW (35 P.S. § 691.607). THE OWNER OR OPERATOR OF A FACILITY WITH STORMWATER DISCHARGES COVERED BY THIS PERMIT SHALL MAKE PCSM PLANS AVAILABLE TO THE PUBLIC UPON REQUEST. THE PCSM PLANS MUST BE MADE AVAILABLE AT THE SITE OF THE CONSTRUCTION ACTIVITY AT ALL TIMES.

D. THE PCSM PLAN MUST BE CONSISTENT WITH THE ASSUMPTIONS AND REQUIREMENTS OF ANY AVAILABLE WLAS FOR THE DISCHARGES AS SET FORTH IN ANY APPLICABLE TMDLS ESTABLISHED FOR THE RECEIVING WATERS.

E. THE PORTION OF A SITE RECLAMATION OR RESTORATION PLAN THAT IDENTIFIES PCSM BMPS TO MANAGE STORMWATER FROM PIPELINES OR OTHER SIMILAR UTILITY INFRASTRUCTURE MAY BE USED TO SATISFY THE PCSM REQUIREMENTS IF THE PCSM RECLAMATION, OR RESTORATION PLAN MEETS THE REQUIREMENTS OF 25 PA. CODE § 102.8(B), (C), (E), (F), (H), (I) AND (I), AND WHEN APPLICABLE, (M).

F. ALL MANUFACTURED BMPS, INCLUDING EROSION CONTROL MATTING AND WATER QUALITY DEVICES, SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

H. UPON REDUCTION, LOSS, OR FAILURE OF ANY PCSM BMP, THE PERMITTEE SHALL IMMEDIATELY TAKE MEASURES TO PREVENT POLLUTION TO WATERS OF THE COMMONWEALTH AND ADVERSE IMPACTS TO THE ENVIRONMENT. THE PERMITTEE SHALL IMMEDIATELY SUBMIT TO DEP FOR REVIEW AND APPROVAL A CORRECTIVE ACTION PLAN (CAP) AND, IF NECESSARY, A PERMIT MODIFICATION, WHICH SHALL INCLUDE A SCHEDULE FOR THE REPAIR AND/OR REPLACEMENT OF THE PCSM BMP. UPON DEP'S APPROVAL OF THE CAP, THE PERMITTEE SHALL IMPLEMENT THE CAP.

IV. PREPAREDNESS, PREVENTION, AND CONTINGENCY (PPC) PLANS

A. IF TOXIC, HAZARDOUS, OR OTHER POLLUTING MATERIALS WILL BE ON SITE, THE PERMITTEE OR CO-PERMITTEE(S) MUST IMPLEMENT A PPC PLAN FOR USE WHILE THOSE MATERIALS ARE ON-SITE IN ACCORDANCE WITH 25 PA. CODE § 91.34 (RELATING TO ACTIVITIES UTILIZING POLLUTANTS). THE PPC PLAN SHALL IDENTIFY AREAS WHICH MAY INCLUDE, BUT ARE NOT LIMITED TO, WASTE MANAGEMENT AREAS, RAW MATERIAL STORAGE AREAS, FUEL STORAGE AREAS, TEMPORARY AND PERMANENT SPOILS STORAGE AREAS, MAINTENANCE AREAS, AND ANY OTHER AREAS THAT MAY HAVE THE POTENTIAL TO CAUSE NONCOMPLIANCE WITH THE TERMS AND CONDITIONS OF THIS PERMIT DUE TO THE STORAGE, HANDLING, OR DISPOSAL OF ANY TOXIC OR HAZARDOUS SUBSTANCES SUCH AS OIL, GASOLINE, PESTICIDES, HERBICIDES, SOLVENTS, CONCRETE WASHWATERS, ETC. BMPS SHALL BE DEVELOPED AND IMPLEMENTED FOR EACH IDENTIFIED AREA.

B. THE PPC PLAN SHALL BE MAINTAINED ON-SITE AT ALL TIMES AND SHALL BE MADE AVAILABLE FOR REVIEW AT THE REQUEST OF DEP OR AN AUTHORIZED CONSERVATION DISTRICT.

VIII. PHASED PROJECTS

PRIOR TO THE COMMENCEMENT OF EARTH DISTURBANCE ACTIVITIES FOR SUBSEQUENT PHASES OF THE PROJECT, THE PERMITTEE OR CO-PERMITTEE SHALL SUBMIT AN E&S PLAN AND PCSM PLAN AND SUPPORTING INFORMATION FOR EACH ADDITIONAL PHASE OR PORTION OF THE PROJECT TO DEP OR AN AUTHORIZED CONSERVATION DISTRICT FOR APPROVAL. COVERAGE UNDER THIS PERMIT IS ONLY GRANTED FOR THOSE PHASES OR PORTIONS OF A PROJECT FOR WHICH AN E&S PLAN AND PCSM PLAN HAS BEEN SUBMITTED AND APPROVED BY DEP OR AN AUTHORIZED CONSERVATION DISTRICT,

IX. WETLAND PROTECTION

IF HYDRIC SOILS OR OTHER WETLAND FEATURES ARE PRESENT, A WETLAND DETERMINATION MUST BE CONDUCTED IN ACCORDANCE WITH DEP PROCEDURES. A COPY OF THE WETLAND DETERMINATION SHALL BE PROVIDED TO DEP OR AN AUTHORIZED CONSERVATION DISTRICT AS PART OF THE APPLICATION. ALL WETLANDS IDENTIFIED MUST BE INCLUDED ON THE E&S PLAN AND PCSM PLAN. SPECIAL PRECAUTIONS MUST BE TAKEN TO PROTECT WETLANDS AND OTHER WATER RESOURCES IDENTIFIED IN THE APPLICATION, PLANS, AND OTHER SUPPORTING DOCUMENTS.

X. INFILTRATION BMPS

A. WHERE INFILTRATION AND/OR RESTORATION BMPS ARE BEING UTILIZED, THE PERMITTEE AND CO-PERMITTEE MUST ENSURE THAT SOIL COMPACTION IS AVOIDED OR MINIMIZED IN THOSE AREAS. IF THE AREAS PLANNED FOR INFILTRATION AND/OR RESTORATION BMPS ARE COMPROMISED THROUGH COMPACTION OR OTHER MEANS, MEASURES SHALL BE TAKEN TO ENSURE THAT PROPER SOIL DE-COMPACTION OCCURS. THE PERMITTEE SHALL IMPLEMENT SUCH MEASURES IN ACCORDANCE WITH THE GUIDANCE ON SOIL RESTORATION IN THE PA STORMWATER BMP MANUAL (BMP 6.7.3, CHAPTER 6, PAGE 221). ADDITIONAL SOIL TESTING MUST BE PERFORMED TO VERIFY THAT THE BMPS WILL PERFORM AS PLANNED.

B. TO PROTECT THE EFFECTIVE INFILTRATION AREA(S) AT PCSM BMPS DURING CONSTRUCTION ACTIVITIES (INCLUDING EARTH DISTURBANCE AND CONVERSION OR INSTALLATION), THE INFILTRATION AREA(S) FOR A PCSM BMP SHALL BE PROTECTED BY ENTIRELY SURROUNDING THE INFILTRATION AREA WITH AN 18-INCH COMPOST FILTER SOCK. THIS IS ONLY NECESSARY IN THOSE AREAS WHERE SPECIFIC INFILTRATION BMPS ARE BEING UTILIZED. THE COMPOST FILTER SOCK SHALL REMAIN IN PLACE AND BE PROPERLY MAINTAINED UNTIL THE CONTRIBUTING DRAINAGE AREA HAS REACHED PERMANENT STABILIZATION (A MINIMUM UNIFORM 70% PERENNIAL VEGETATIVE COVER OR OTHER PERMANENT NON-VEGETATIVE COVER WITH A DENSITY SUFFICIENT TO RESIST ACCELERATED EROSION) AND DEP OR AN AUTHORIZED CONSERVATION DISTRICT APPROVES THE REMOVAL OF THE COMPOST FILTER SOCK

XII. LONG-TERM OPERATION AND MAINTENANCE

A. THE PERMITTEE OR CO-PERMITTEE SHALL BE RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPS UNLESS A DIFFERENT PERSON IS IDENTIFIED IN THE NOT AND THAT PERSON HAS AGREED TO LONG-TERM OPERATION AND MAINTENANCE OF PCSM BMPS.

B. FOR ANY PROPERTY CONTAINING A PCSM BMP, THE PERMITTEE OR CO-PERMITTEE SHALL RECORD AN INSTRUMENT WITH THE RECORDER OF DEEDS WHICH WILL ASSURE DISCLOSURE OF THE PCSM BMP AND THE RELATED OBLIGATIONS IN THE ORDINARY COURSE OF A TITLE SEARCH OF THE SUBJECT PROPERTY. THE RECORDED INSTRUMENT MUST IDENTIFY THE PCSM BMP, PROVIDE FOR NECESSARY ACCESS RELATED TO LONG-TERM OPERATION AND MAINTENANCE FOR PCSM BMPS, AND PROVIDE NOTICE THAT THE RESPONSIBILITY FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS IS A COVENANT THAT RUNS WITH THE LAND THAT IS BINDING UPON AND ENFORCEABLE BY SUBSEQUENT GRANTEES, AND PROVIDE PROOF OF FILING WITH THE NOT UNDER 25 PA. CODE § 102.8(M)(2).

C. FOR COMMONWEALTH OWNED PROPERTY, A COVENANT THAT RUNS WITH THE LAND IS NOT REQUIRED UNTIL THE TRANSFER OF THE LAND CONTAINING A PCSM BMP OCCURS. UPON TRANSFER OF THE COMMONWEALTH-OWNED PROPERTY CONTAINING THE PCSM BMP, THE DEED MUST COMPLY WITH 25 PA. CODE § 102.8(M)(3). AN AGENCY OF THE FEDERAL GOVERNMENT SHALL NOT BE REQUIRED TO MAKE OR RECORD A DECLARATION OF COVENANTS ON ITS PROPERTY UNTIL TRANSFER OF THE PROPERTY TO A NON-FEDERAL OR NON-COMMONWEALTH ENTITY OR INDIVIDUAL. UPON TRANSFER OF THE COMMONWEALTH OWNED OR FEDERALLY OWNED PROPERTY CONTAINING THE PCSM BMP, THE DEED MUST COMPLY WITH 25 PA. CODE § 102.8(M)(3).

D. THE PERSON RESPONSIBLE FOR PERFORMING LONG-TERM OPERATION AND MAINTENANCE MAY ENTER INTO AN AGREEMENT WITH ANOTHER PERSON, INCLUDING A CONSERVATION DISTRICT, NONPROFIT ORGANIZATION, MUNICIPALITY, AUTHORITY, PRIVATE CORPORATION, OR OTHER PERSON, TO TRANSFER THE RESPONSIBILITY FOR PCSM BMPS OR TO PERFORM LONG-TERM OPERATION AND MAINTENANCE AND PROVIDE NOTICE THEREOF TO DEP.

E. A PERMITTEE OR CO-PERMITTEE THAT FAILS TO TRANSFER LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS OR OTHERWISE FAILS TO COMPLY WITH THIS REQUIREMENT, SHALL REMAIN JOINTLY AND SEVERALLY RESPONSIBLE WITH THE LANDOWNER FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS LOCATED ON THE PROPERTY.

F. UNLESS A LATER DATE IS APPROVED BY DEP IN WRITING, THE PERMITTEE SHALL RECORD AN INSTRUMENT AS REQUIRED UNDER 25 PA. CODE SUBSECTION 102.8(M)(2) AND PARAGRAPH XII.B WITHIN 45 DAYS FROM THE DATE OF ISSUANCE OF THIS PERMIT OR AUTHORIZATION. UNLESS DEP AUTHORIZES A DIFFERENT PROCEDURE, THE LONG-TERM OPERATION AND MAINTENANCE PLAN SHALL BE RECORDED ALONG WITH THE INSTRUMENT. UNLESS A LATER DATE IS APPROVED BY DEP IN WRITING, THE PERMITTEE SHALL PROVIDE THE CONSERVATION DISTRICT AND DEP WITH THE DATE AND PLACE OF RECORDING ALONG WITH A REFERENCE TO THE DOCKET, DEED BOOK OR OTHER RECORD, WITHIN 90 DAYS FROM THE DATE OF ISSUANCE OF THIS PERMIT OR AUTHORIZATION

G. UNLESS AN ALTERNATIVE PROCESS IS APPROVED BY DEP IN WRITING, UPON THE SALE OR OTHER TRANSFER OF ANY PARCEL, LOT, ROAD OR OTHER REAL PROPERTY INCLUDED WITHIN THE PERMIT BOUNDARY, THE PERMITTEE SHALL NOTIFY THE PURCHASER, GRANTEE, OR TRANSFEREE OF THE LONG-TERM PCSM BMP OPERATION AND MAINTENANCE REQUIREMENTS. THE PERMITTEE SHALL EXPRESSLY IDENTIFY THE PCSM BMPS ON EACH PROPERTY, THE SCHEDULE FOR INSPECTION AND REPORTING, THE PERSON OR ENTITY RESPONSIBLE FOR LONG-TERM OPERATION AND MAINTENANCE OF THE PCSM BMPS AND HOW ACCESS TO THE BMPS WILL BE ACHIEVED AND SHALL OBTAIN APPROVAL FROM THE PURCHASER, GRANTEE OR TRANSFEREE. UNLESS A LATER DATE IS APPROVED BY DEP IN WRITING, THE PERMITTEE SHALL PROVIDE THE CONSERVATION DISTRICT AND DEP WITH NOTICE OF COMPLIANCE WITH THIS SECTION WITHIN 45 DAYS FROM THE DATE OF TRANSFER OF THE PROPERTY AND AT THE TIME THE PERMITTEE FILES A NOTICE OF TERMINATION.

XIII. PRIOR CONTAMINATION

THE PERMITTEE SHALL IMPLEMENT THE FOLLOWING PROCEDURES AT ANY LOCATION OF THE PROJECT SITE WHERE IT KNOWS OR HAS REASON TO BELIEVE THAT SOILS ARE OR MAY BE CONTAMINATED DUE TO PAST LAND USES OR UPON RECEIPT OF WRITTEN NOTIFICATION FROM DEP:

A. MINIMIZE DISTURBANCE -- LIMIT THE EXTENT AND DURATION OF EARTH DISTURBANCE ACTIVITIES, INCLUDING THE USE OF LESS INTRUSIVE EARTH DISTURBANCE TECHNIQUES/EQUIPMENT, AND AVOIDING AND MINIMIZING THE IMPACT OF ANCILLARY AREAS THAT ARE NOT NECESSARY FOR THE PROJECT.

B. INCORPORATE A CONTINGENCY PLAN AND ADDITIONAL SAFETY PROTOCOLS IN THE EVENT UNEXPECTED CONTAMINATION IS UNCOVERED. THESE PROTOCOLS SHALL BE ESTABLISHED IN THE PERMITTEE'S PPC PLAN. INCORPORATE APPROPRIATE DUST CONTROL AND SUPPRESSION PRACTICES AND PROCEDURES DURING DRY AND WINDY PERIODS.

C. IMPLEMENT IMMEDIATE STABILIZATION ON ALL CONTAMINATED AREAS OF THE PROJECT SITE INVOLVING EARTH DISTURBANCE. THIS MAY BE ACHIEVED USING MATS/BLANKETS/LININGS/MULCHING (INCLUDING COMPOST); TEMPORARY AND/OR PERMANENT SEEDING/VEGETATION; TARPING OR OTHER IMPERMEABLE/IMPERVIOUS COVER; OR TEMPORARY DAILY COVER.

D. IMPLEMENT AND MAINTAIN PERIMETER E&S BMPS INCLUDING BUT NOT LIMITED TO COMPOST FILTER BERMS, COMPOST FILTER SOCKS OR WEIGHTED SEDIMENT FILTER TUBES, AND/OR NON-ACRYLAMIDE FLOCCULANTS.

XIV. WATER SUPPLY NOTIFICATION

PRIOR TO BEGINNING ANY CONSTRUCTION OR EARTH DISTURBANCE ACTIVITIES, ALL PUBLIC WATER SUPPLIES OR OTHER USERS OF SURFACE WATERS WITHIN ONE (1) MILE DOWNSTREAM THAT MAY BE AFFECTED BY TURBIDITY INCREASES OR OTHER WATER QUALITY CHANGES CAUSED BY CONSTRUCTION OR EARTH DISTURBANCE ACTIVITIES SHALL BE NOTIFIED AT LEAST 72 HOURS PRIOR TO COMMENCING THE ACTIVITIES.

XV. ARCHAEOLOGICAL SPECIMENS

THE PERMITTEE SHALL NOT BEGIN WORK IN AREAS SUBJECT TO PHASE I OR PHASE II ARCHEOLOGICAL INVESTIGATIONS RECOMMENDED BY THE PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION (PHMC) UNTIL THE PERMITTEE SECURES THE NECESSARY CLEARANCES FOR THESE AREAS FROM PHMC. IN ADDITION, THE PERMITTEE AND ITS AGENTS SHALL VISUALLY INSPECT FOR ARCHAEOLOGICAL SPECIMENS, AS THE TERM IS DEFINED IN THE PENNSYLVANIA STATE HISTORY CODE (37 PA. C.S.A., SECTION 101 ET SEQ.), DURING EARTH DISTURBANCE ACTIVITIES, AND SHALL IMMEDIATELY CEASE EARTH DISTURBANCE ACTIVITIES UPON DISCOVERY OF ARCHAEOLOGICAL SPECIMENS. UPON DISCOVERY THE PERMITTEE SHALL IMMEDIATELY NOTIFY DEP AND PHMC (PHONE: (717) 783-8947).

XVI. DISCHARGES TO NON-SURFACE WATERS

THIS PERMIT AUTHORIZES PROPOSED DISCHARGES OF STORMWATER TO NON-SURFACE WATERS. DISCHARGES TO AREAS THAT ARE NOT SURFACE WATERS SHALL NOT CAUSE ACCELERATED EROSION OR STORMWATER DAMAGE TO DOWN SLOPE OR ADJACENT PROPERTIES. THESE AREAS THAT ARE NOT SURFACE WATERS SHALL BE MAINTAINED TO PREVENT EROSION FROM STORMWATER FLOWS.

XVII. RIPARIAN AREA REPLANTING

PRIOR TO SUBMISSION OF THE NOTICE OF TERMINATION, THE PERMITTEE SHALL REPLANT FORESTED RIPARIAN AREAS IN TEMPORARY RIGHT OF WAYS ALONG SURFACE WATERS. REPLANTING SHALL BE CONDUCTED FOR A MINIMUM DISTANCE OF FIFTY (50) FEET LANDWARD FROM THE TOP OF BOTH BANKS OF WARM WATER FISHERIES AND TROUT STOCKED FISHERIES; 100 FEET FROM COLD WATER FISHERIES; AND 150 FEET FROM HQ/EV STREAMS. THE DENSITY OF REPLANTED TREES SHALL BE SIMILAR TO THE DENSITY THAT EXISTED PRIOR TO THE PERMITTEE CONDUCTING CONSTRUCTION ACTIVITIES BUT SHALL PROVIDE NO LESS THAN 60% UNIFORM CANOPYCOVER UPON MATURATION AND SHALL BE APPROPRIATE TO THE GEOGRAPHIC LOCATION. MAINTENANCE AND INSPECTIONS SHALL ENSURE SURVIVAL AND GROWTH OF PLANTINGS AND PROTECTION FROM COMPETING PLANTS AND ANIMALS INCLUDING NOXIOUS WEEDS AND INVASIVE SPECIES OVER A 5-YEAR ESTABLISHMENT PERIOD TO ENSURE AND PROPER FUNCTIONING OF RIPARIAN FOREST BUFFERS, AND SHALL INCLUDE MEASURES TO REPAIR DAMAGE TO THE BUFFER FROM STORM EVENTS GREATER THAN THE 2-YEAR/24-HOUR STORM.

XVIII. HABITAT CONSERVATION PLANS AND THREATENED AND ENDANGERED SPECIES PROTECTION

A. THE PERMITTEE SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE HABITAT CONSERVATION PLAN SUBMITTED AND APPROVED BY THE U.S. FISH AND WILDLIFE SERVICE (USFWS), PA GAME COMMISSION (PGC), PA FISH AND BOAT COMMISSION (PFBC) AND PA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES (DCNR) TO PROTECT FEDERAL AND STATE LISTED SPECIES, THE PERMITTEE SHALL PROVIDE A COPY OF THE PLAN TO DEP PRIOR TO INITIATION OF ANY WORK UNDER THIS PERMIT.

B. THE PERMITTEE SHALL IMPLEMENT THE APPROVED HABITAT CONSERVATION PLAN IN ACCORDANCE WITH ALL PGC APPROVALS FOR THE ALLEGHENY WOODRAT (NEOTOMA MAGISTER). THIS INCLUDES NO BLASTING OR THE USE OF HERBICIDES ON THE PROJECT OR IN THE VICINITY OF THE PROJECT ON DCNR LANDS AS IDENTIFIED IN THE PGC CLEARANCE. THE PERMITTEE SHALL PROVIDE A COPY OF THE PLAN TO DEP PRIOR TO INITIATION OF ANY WORK UNDER THIS PERMIT.

C. THE PERMITTEE SHALL IMPLEMENT THE MIGRATORY BIRD CONSERVATION PLAN APPROVED BY THE USFWS. THE PERMITTEE SHALL PROVIDE A COPY OF THE PLAN TO DEP PRIOR TO INITIATION OF ANY WORK UNDER THIS PERMIT.

D. THE PERMITTEE SHALL IMPLEMENT ALL AVOIDANCE MEASURES IDENTIFIED BY THE JURISDICTIONAL RESOURCE AGENCIES FOR ANY THREATENED OR ENDANGERED SPECIES OR SPECIES OF SPECIAL CONCERN.

E. WHERE APPLICABLE, THE PERMITTEE SHALL IMPLEMENT THE AVOIDANCE MEASURES IDENTIFIED IN APPENDIX A OF THE DEPARTMENT'S PERMIT ISSUED UNDER CHAPTER 105 FOR ALL OPEN TRENCH WETLAND CROSSINGS IN BOG TURTLE (CLEMMYS MUHLENBERGII) COUNTIES IDENTIFIED BY THE USFWS AS OCCUPIED, POTENTIALLY OCCUPIED OR ADJACENT HABITATS, UNLESS OTHERWISE SPECIFIED BY THE USFWS.

F. THE PERMITTEE SHALL COMPLY WITH ALL PROTOCOLS SET FORTH BY THE USFWS FOR PROTECTION OF THE RUSTY PATCH BUMBLE BEE.

G. PRIOR TO CONDUCTING ANY FUTURE MAINTENANCE ACTIVITIES ON THE PIPELINE OR RIGHT OF WAY WHICH INVOLVES DISTURBANCE, THE PERMITTEE SHALL CONDUCT A THEN CURRENT PENNSYLVANIA NATURAL DIVERSITY INVENTORY SEARCH, SHALL OBTAIN CLEARANCE(S) FOR ANY SPECIES OR RESOURCE WHERE A POTENTIAL IMPACT IS IDENTIFIED, PROVIDE THE AVOIDANCE AND MITIGATION PLAN TO DEP PRIOR TO INITIATING SUCH MAINTENANCE WORK, AND SHALL IMPLEMENT AND ADHERE TO ALL AVOIDANCE MEASURES OUTLINED IN SUCH CLEARANCE(S).

TETRA TECH
www.tetratech.com
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

REVISIONS

NO.	BY	DATE	REMARKS
1	RS	3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ROBERT F. SIMCIK ENGINEER

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 2

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
CHAPTER 102 PERMIT SPECIAL CONDITIONS

DATE:	2/6/2017
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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ALL PERMIT CONDTIONS SET FORTH IN THE E&S PERMIT NO. ESG 05000 15001 AND WATER OBSTRUCTION AND ENCROACHMENT PERMIT E11-352 MUST BE FOLLOWED

WATER OBSTRUCTION AND ENCROACHMENT PERMIT SPECIAL CONDITIONS

A. WATER SUPPLIES:

1. AT LEAST 72 HOURS IN ADVANCE OF BEGINNING ANY CONSTRUCTION ACTIVITIES, THE PERMITTEE SHALL NOTIFY ALL IDENTIFIED PUBLIC AND PRIVATE WATER SUPPLIES ALONG THE PROJECT'S CORRIDOR THAT MAY BE AFFECTED BY INCREASED TURBIDITY OR OTHER WATER QUALITY CHANGES CAUSED BY THE PERMITTEE'S CONSTRUCTION ACTIVITIES.
   - IF THE PROJECT RESULTS IN A POLLUTION EVENT WHICH MAY IMPACT ANY PUBLIC OR PRIVATE WATER SUPPLIES, THE PERMITTEE SHALL IMMEDIATELY NOTIFY THE DEPARTMENT AND THE POTENTIALLY AFFECTED PUBLIC OR PRIVATE WATER SUPPLIES OF THE POLLUTION EVENT.
2. IN THE EVENT THE PERMITTEE'S WORK CAUSES ADVERSE IMPACTS TO A PUBLIC OR PRIVATE WATER SUPPLY SOURCE, THE PERMITTEE SHALL ALSO IMMEDIATELY NOTIFY THE DEPARTMENT AND IMPLEMENT A CONTINGENCY PLAN, TO THE SATISFACTION OF THE PUBLIC AND PRIVATE WATER SUPPLY OWNERS THAT ADDRESSES ALL ADVERSE IMPACTS IMPOSED ON THE PUBLIC AND PRIVATE WATER SUPPLY AS A RESULT OF THE POLLUTION EVENT, INCLUDING THE RESTORATION OR REPLACEMENT OF THE IMPACTED WATER SUPPLY.
3. AT LEAST 72 HOURS IN ADVANCE OF BEGINNING CONSTRUCTION ACTIVITIES, THE PERMITTEE SHALL NOTIFY ALL WATER USERS WITH DOWNSTREAM SURFACE WATER INTAKES WITHIN ONE MILE DOWNSTREAM, INCLUDING BUT NOT LIMITED TO, DRINKING WATER USERS, INDUSTRIAL AND COMMERCIAL USERS THAT MAY BE IMPACTED BY TURBIDITY OR WATER QUALITY CHANGES.
4. THE PERMITTEE SHALL NOTIFY SUCH DOWNSTREAM WATER USERS IMMEDIATELY OF ANY POLLUTION EVENT OR INCIDENT AT ITS SITE THAT MAY ENDANGER DOWNSTREAM USERS. THE PERMITTEE SHALL ALSO IMMEDIATELY IMPLEMENT ITS APPROVED CONTINGENCY PLAN TO PREVENT FURTHER ADVERSE IMPACTS AND REMEDIATE ALL ADVERSE IMPACTS AS A RESULT OF THE POLLUTION EVENT OR INCIDENT.
5. IF A PUBLIC OR PRIVATE DRINKING WATER SOURCE NOT PREVIOUSLY IDENTIFIED BY THE PERMITTEE IS DISCOVERED BY THE PERMITTEE DURING CONSTRUCTION, THE PERMITTEE SHALL IMMEDIATELY NOTIFY THE DEPARTMENT OF THE IDENTIFIED WATER SOURCE AND SHALL NOTIFY THAT SOURCE OF THE PERMITTEE'S CONSTRUCTION ACTIVITIES.

B. PHMC GENERAL CONDITIONS:

1. THE PERMITTEE AND ITS AGENTS SHALL VISUALLY INSPECT FOR ARCHAEOLOGICAL ARTIFACTS AND SHALL IMMEDIATELY CEASE EARTH DISTURBANCE ACTIVITIES UPON DISCOVERY OF ARCHAEOLOGICAL ARTIFACTS.
2. IF ARCHAEOLOGICAL ARTIFACTS ARE DISCOVERED, THE PERMITTEE SHALL IMMEDIATELY NOTIFY THE DEP REGIONAL OFFICE IN THE DEP REGION WHERE THE ARTIFACT IS FOUND AND SHALL CONCURRENTLY NOTIFY THE PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION (PHMC) AT P.O. BOX 1026, HARRISBURG, PA 17120-1026, TELEPHONE 717.783.8947.
3. AT ALL TIMES, THE PERMITTEE SHALL PROTECT HISTORIC, CULTURAL AND ARCHAEOLOGICAL SITES AS IDENTIFIED IN THE LATEST PUBLISHED VERSION OF THE PENNSYLVANIA INVENTORY OF HISTORICAL PLACES AND THE NATIONAL REGISTER OF HISTORICAL PLACES.

C. PIIMC AREAS SUBJECT TO PHASE I OR PHASE II SURVEYS:

1. THE PERMITTEE SHALL NOT BEGIN WORK IN AREAS SUBJECT TO PHASE I OR PHASE II ARCHEOLOGICAL INVESTIGATIONS RECOMMENDED BY THE PHMC UNTIL THE PERMITTEE SECURES THE NECESSARY CLEARANCES FOR THESE AREAS FROM PHMC.

D. SUBMERGED LANDS LICENSE AGREEMENTS:

1. THE PERMITTEE SHALL COMPLY WITH ALL TERMS AND CONDITIONS OF THE SUBMERGED LANDS LICENSE AGREEMENT ENTERED INTO BETWEEN THE DEPARTMENT AND THE PERMITTEE FOR THE LITTLE CONEMAUGH RIVER CROSSING, WHICH IS INCORPORATED HEREIN BY REFERENCE.

E. TEMPORARY ROAD CROSSINGS:

ALL TEMPORARY ROAD CROSSINGS OF STREAMS AND WETLANDS MUST MEET ALL OF THE FOLLOWING CONDITIONS:

1. THE PERMITTEE SHALL RESTORE AND STABILIZE ALL TEMPORARY CROSSING SITES, EXCEPT FORDS, WITHIN FIVE (5) DAYS AFTER TERMINATION OF ITS PERMITTED USE.
2. PERMITTEE SHALL NOT UTILIZE OR CONSTRUCT FORDS ON ANY STREAM OR WATERCOURSE WITHIN HIGH QUALITY (HQ) AND EXCEPTIONAL VALUE (EV) WATERSHEDS AS SPECIFIED IN 25 PA. CODE CHAPTER 93. OR IN WATERSHEDS TRIBUTARY TO DRINKING WATER INTAKES OR RESERVOIRS FOR PUBLIC WATER SUPPLY USERS, WHERE THE FORD IS WITHIN 2,000 FEET UPSTREAM OF SUCH INTAKE OR RESERVOIR.
3. THE PERMITTEE SHALL ADEQUATELY BLOCK AND STABILIZE ALL APPROACHES FOR FORDS USED AS TEMPORARY CROSSINGS WITHIN FIVE (5) DAYS AFTER TERMINATION OF THEIR PERMITTED USE IN ORDER TO PREVENT FUTURE USE.
4. THE PERMITTEE IS PROHIBITED FROM SKIDDING ACROSS FORDS.
5. WHERE A STREAMBED AT THE SITE OF A FORD DOES NOT HAVE A ROCK BOTTOM, A LAYER OF CLEAN ROCK OVER GEO-FABRIC MUST BE PLACED AND MAINTAINED. THIS LAYER OF CLEAN ROCK MUST NOT OBSTRUCT THE STREAM FLOW. IN ADDITION, THE FORD'S APPROACHES MUST: (1) BE MAINTAINED IN A FIRM AND STABLE CONDITION; AND (2) ENTER THE STREAM ON LESS THAN A 10% GRADE WITHIN 50 FEET OF THE STREAM WITH THE FLOW; AND (3) EXIT THE STREAM AGAINST THE FLOW ON THE SAME GRADE AND DISTANCE LIMITATION AS SPECIFIED FOR THE ENTRANCE. PERMITTEE SHALL ENSURE THAT ALL ROADS CROSS ALL WATERCOURSES AT A RIGIBT ANGLE TO THE STREAM, UNLESS PERMITTEE OBTAINS SPECIFIC AND SEPARATE APPROVAL FROM THE DEPARTMENT.
6. PERMITTEE SHALL ENSURE THAT ALL CULVERTS PROVIDE A WATERWAY AREA SUFFICIENT TO ADEQUATELY DISCHARGE THE NORMAL FLOW OF THE WATERCOURSE OR STREAM, AND THAT CULVERTS ARE OF SUFFICIENT LENGTH TO EXTEND BEYOND THE TOE OF THE CLEAN ROCK FILL.
7. PERMITTEE SHALL ENSURE THAT CULVERTS ARE INSTALLED IN SUCH MANNER THAT OVERTOPPING OF THE ROADWAY WILL OCCUR WITHIN THE STREAM CHANNEL. THIS CAN BE ACCOMPLISHED BY PROVIDING A DEPRESSED ROADWAY EMBANKMENT.
8. PERMITTEE SHALL MINIMIZE EXCESSIVE FILL AND EXCAVATION OF STREAM BANKS BY UTILIZING CULVERTS WITH AS LARGE A DIAMETER AS POSSIBLE. THE MINIMUM DIAMETER SIZE OF A CULVERT TO BE USED IS NO LESS THAN 12 INCHES.
9. ROAD AND CAUSEWAY EMBANKMENTS SHALL ONLY CONSIST OF CLEAN ROCK MATERIAL TO PREVENT STREAM CHANNEL SEDIMENTATION DURING PLACEMENT, REMOVAL, AND PERIODS OF OVERTOPPING.
10. BRIDGES SHALL BE SINGLE SPAN FROM TOP OF BANK TO TOP OF BANK, AND MUST BE STRUCTURALLY STABLE.
11. APPROACH ROADS TO TEMPORARY ROAD CROSSINGS SHALL UTILIZE ORIGINAL GRADES. HOWEVER, CLEAN ROCK MATERIAL OR GRAVEL TO A DEPTH OF SIX INCHES ABOVE ORIGINAL GRADE CAN BE UTILIZED FOR APPROACHES, AS NECESSARY.
12. CAUSEWAYS SHALL NOT EXTEND STREAMWARD A DISTANCE GREATER THAN ONE-HALF THE WIDTH OF THE STREAM CHANNEL.

E. TEMPORARY ROAD CROSSINGS (CONTINUED):

13. TEMPORARY ROAD CROSSINGS SHALL BE KEPT OPEN AND FUNCTIONING AT ALL TIMES BY MAINTAINING THE CROSSINGS FREE OF DEBRIS AND OTHER OBSTRUCTIONS.
14. THE PERMITTEE SHALL PROMPTLY REPAIR ANY DAMAGE RESULTING FROM INCREASED BACKWATER CAUSED BY A TEMPORARY ROAD CROSSING. THE PERMITTEE SHALL REMOVE TEMPORARY ROAD CROSSINGS IN THE EVENT OF HIGH WATERS TO PREVENT INCREASED BACKWATER.
15. IF PERMITTEE CANNOT AVOID A WETLAND CROSSING, THE CROSSING IS PERMISSIBLE IF IT IS LOCATED AT THE NARROWEST PRACTICABLE POINT OF THE WETLAND.
16. ALL WETLANDS CROSSING SITES SHALL BE STABILIZED BY ANY APPROPRIATE MEANS, INCLUDING, BUT NOT LIMITED TO, USING REMOVABLE, TEMPORARY MATS, PADS OR OTHER SIMILAR DEVICES TO ENSURE MINIMIZATION OF IMPACT ON THE WETLANDS ECOLOGY.
17. TEMPORARY EMBANKMENTS FOR ROADS ACROSS WETLANDS SHALL BE INSTALLED TO MAINTAIN THE HYDROLOGY OF THE WETLAND.
18. POLLUTION OF ANY WATERWAY WITH HARMFUL CHEMICALS, FUELS, OILS, GREASES, BITUMINOUS MATERIAL, ACID, OR OTHER HARMFUL OR POLLUTING MATERIALS, IS PROHIBITED.
19. ACCESS ROADS SHOULD NOT APPROACH THE STREAM CHANNEL DIRECTLY DOWNSLOPE, BUT SHOULD TRAVERSE THE SLOPE OBLIQUELY TO PREVENT HIGH VELOCITY ROAD DRAINAGE FLOWS FROM DIRECTLY ENTERING THE STREAM CHANNEL. ROAD DRAINAGE SHALL INCLUDE PROPER EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICES.
20. THE PERMITTEE SHALL REMOVE ALL OR ANY PORTION OF A TEMPORARY ROAD CROSSING UPON WRITTEN NOTICE TO THE PERMITTEE FROM THE DEPARTMENT IN THE EVENT THE PROJECT IS CAUSING AN ADVERSE IMPACT ON PUBLIC HEALTH, SAFETY OR THE ENVIRONMENT OR IN ANY OTHER MANNER VIOLATES THE REQUIREMENTS OF THE PENNSYLVANIA CLEAN STREAMS LAW, 25 PA. CODE CHAPTER 105, OR BOTH.
21. THE PERMITTEE SHALL BE RESPONSIBLE FOR DETERMINING AND DOCUMENTING WHICH METHOD OF CROSSING IS APPROPRIATE FOR EACH RESOURCE. THIS DOCUMENTATION SHALL BE MADE AVAILABLE TO THE DEPARTMENT WITH THE PRE- AND POST-CONSTRUCTION PHOTOGRAPHS. THE PERMITTEE SHALL SUBMIT THIS DOCUMENTATION TO THE RESPECTIVE DEP REGIONAL OFFICE WITHIN NINETY (90) DAYS AFTER COMPLETION OF WORK UNDER THE RESPECTIVE PERMIT.

F. SITE FIELD VERIFICATION, RESTORATION AND MONITORING:

1. PRIOR TO INSTALLATION OF PIPELINE CROSSINGS, THE PERMITTEE SHALL TAKE NEW PRE-CONSTRUCTION PHOTOGRAPHS OF THE NATURAL RESOURCES AT EACH OF THE CROSSINGS. THE PERMITTEE SHALL PREPARE AND MAINTAIN A RECORD OF PRE- AND POST- CONDITIONS OF EACH STREAM AND WETLAND CROSSING. THE PERMITTEE SHALL SUBMIT THIS DOCUMENTATION TO THE RESPECTIVE DEP REGIONAL OFFICE WITHIN NINETY (90) DAYS AFTER COMPLETION OF WORK UNDER THE RESPECTIVE PERMIT.
2. ALL WETLANDS WITHIN THE PROJECT AREA SHALL BE ACCURATELY FIELD-DELINEATED PRIOR TO THE START OF CONSTRUCTION ACTIVITIES AND UP TO THE TIME THAT EARTH DISTURBANCE ACTIVITIES ARE COMPLETED AND THE SITE HAS BEEN STABILIZED. AN ACCEPTABLE MEANS OF FIELD-IDENTIFICATION OF WETLANDS INCLUDES BUT NOT LIMITED TO, THE USE OF AN ORANGE CONSTRUCTION SAFETY FENCE AND/OR FLAGS.
3. FOR A PERIOD OF UP TO 5 YEARS FOLLOWING CONSTRUCTION, THE PERMITTEE SHALL MONITOR FOR SECONDARY IMPACTS TO HYDROLOGY, I.E., THE LOSS OF HYDROLOGY, TO ALL WATERCOURSES WITH A DRAINAGE AREA OF LESS THAN 100 ACRES, INCLUDING THOSE WATERCOURSES THAT ORIGINATE WITHIN THE PROJECT ROW. REPORTS SHALL BE SUBMITTED TO DEP IN THE SPRING AND FALL FOR THE FIRST TWO (2) CALENDAR YEARS FOLLOWING CONSTRUCTION AND ANNUALLY FOR THREE (3) YEARS THEREAFTER.
   - THE MONITORING REPORTS SHALL CONTAIN INFORMATION DESCRIBING THE PRESENCE OR ABSENCE OF HYDROLOGY AT THE TIME OF INSPECTION, A NARRATIVE COMPARISON TO HYDROLOGY PRESENT IN THE WATERCOURSE DURING PRE-PERMITTING FIELD INVESTIGATION(S), AND PHOTOGRAPHS OF THE WATERCOURSE.
   - IF THE MONITORING IDENTIFIES A DIMINUTION OR COMPLETE LOSS OF HYDROLOGY, THE PERMITTEE SHALL EVALUATE WHETHER THE ACTIVITIES AUTHORIZED BY THIS PERMIT CAUSED THE LOSS OF HYDROLOGY AND SUBMIT THIS EVALUATION TO THE DEPARTMENT FOR REVIEW.
   - IF THE DEPARTMENT DETERMINES THAT THE ACTIVITIES AUTHORIZED BY THIS PERMIT ARE CONTRIBUTING TO THE LOSS OF HYDROLOGY, THE PERMITTEE SHALL PREPARE A WRITTEN PLAN TO CORRECT THE LOSS OF HYDROLOGY TO THE WATERCOURSE. THE PERMITTEE SHALL IMPLEMENT THE APPROVED PLAN WITHIN NINETY (90) AND SUBMIT THIS PLAN TO DEP FOR REVIEW AND APPROVAL. IF DEP IDENTIFIES ANY DEFICIENCIES WITH PERMITTEE'S PLAN, THEN THE PERMITTEE SHALL PROVIDE DEP A WRITTEN RESPONSE TO ADDRESS THE STATED DEFICIENCIES WITHIN 15 DAYS OF RECEIVING WRITTEN NOTICE OF DEP'S DEFICIENCIES, UNLESS DEP EXTENDS THAT TIMEFRAME IN WRITING.
   - THE PERMITTEE SHALL IMPLEMENT THE DEP-APPROVED PLAN WITHIN 90 DAYS OF RECEIVING WRITTEN APPROVAL FROM DEP, UNLESS DEP EXTENDS THAT TIMEFRAME IN WRITING.
   - IN THE EVENT THAT LOSS OF HYDROLOGY FROM ACTIVITIES CONDUCTED UNDER THIS PERMIT CANNOT BE RESTORED, THE PERMITTEE SHALL SUBMIT A MITIGATION PLAN TO DEP THAT SETS FORTH THE MANNER IN WHICH FULL LOSS OF HYDROLOGY AND ASSOCIATED WATER WILL BE COMPENSATED FOR. IF DEP IDENTIFIES ANY DEFICIENCIES WITH THE PERMITTEE'S MITIGATION PLAN, THEN THE PERMITTEE SHALL PROVIDE DEP A WRITTEN RESPONSE TO ADDRESS THE STATED DEFICIENCIES WITHIN 15 DAYS OF RECEIVING WRITTEN NOTICE OF DEP'S DEFICIENCIES, UNLESS DEP EXTENDS THAT TIMEFRAME IN WRITING. THE PERMITTEE SHALL IMPLEMENT THE DEP-APPROVED MITIGATION PLAN WITHIN 90 DAYS OF RECEIVING WRITTEN APPROVAL FROM DEP, UNLESS DEP EXTENDS THAT TIMEFRAME IN WRITING.
4. WETLAND EXCAVATION SHALL SEGREGATE THE SOIL HORIZONS AND REPLACE THE SOIL HORIZONS TO MATCH PRE-CONSTRUCTION CONDITIONS. FOR AREAS WHERE BORE PITS ARE PROPOSED IN OR ADJACENT TO WETLANDS, OR IF A RESTRICTIVE LAYER, INCLUDING BUT NOT LIMITED TO CLAY OR FRAGIPANS, IS ENCOUNTERED DURING THE TRENCH EXCAVATION, THE PERMITTEE SHALL HAVE A KNOWLEDGEABLE WETLANDS SCIENTIST ON THE ENVIRONMENTAL INSPECTION TEAM THAT SHALL OVERSEE BACKFILLING OF THE TRENCH AND INSTALLATION OF TRENCH PLUGS, IN ORDER TO MAINTAIN WETLAND HYDROLOGY.
5. TOPSOIL SHALL BE SEGREGATED FROM SUBSOIL IN ALL WETLAND AREAS.
6. ALL DISTURBED AREAS ARE TO BE RESTORED, STABILIZED AND SHALL BE REPLANTED WITH INDIGENOUS PLANT SPECIES. EXCESS FILL FROM DISTURBED AREAS AND CONSTRUCTION ACTIVITIES SHALL BE LOCATED OUTSIDE OF THE FLOODWAY, FLOODPLAIN AND WETLANDS. THE PERMITTEE IS RESPONSIBLE FOR STABILIZING ANY EXCESS MATERIALS SPOILED ONSITE OR OFFSITE, WHETHER THE PERMITTEE OWNS THE SITE OR OTHERS OWN THE SITE.
7. ROCK RIPRAP SHALL BE USED IN THE STREAM BED ONLY WHERE A SHEAR STRESS ANALYSIS HAS DETERMINED THAT SCOUR PROTECTION IS NECESSARY TO ENSURE STABILITY OF THE RESOURCE.
8. A TRENCH IN WHICH THE PIPELINE WILL BE LAID SHALL BE BACKFILLED IN A MANNER THAT DOES NOT CREATE THE FORMATION OF A PERMANENT RIDGE IN A STREAMBED OR WETLAND.
9. RESTORED STREAMS SHALL USE A MINIMUM OF SIX (6) INCHES OF NATIVE STREAM BED MATERIAL. FOR STREAMS WHERE RIPRAP IS NECESSARY TO PREVENT SCOUR, THE RIPRAP SHALL BE DEPRESSED SUFFICIENTLY TO ALLOW SIX (6) INCHES OF NATIVE STREAM BED MATERIAL OVER THE RIPRAP.

F. SITE FIELD VERIFICATION, RESTORATION AND MONITORING (CONTINUED):

10. ALL PFO AND PSS WETLANDS WITHIN THE TEMPORARY ROW SHALL BE REPLANTED WITH WOODY SPECIES PRESENT IN THE WETLAND PRIOR TO THE PERMITTEE CONDUCTING CONSTRUCTION ACTIVITIES. THE PLANTINGS NEED NOT MIRROR PRE-CONSTRUCTION MATURITY.
11. FORESTED RIPARIAN AREAS IN THE TEMPORARY ROW ALONG WATERCOURSES SHALL BE REPLANTED WITH NATIVE TREE SPECIES FOR A MINIMUM DISTANCE OF FIFTY (50) FEET LANDWARD FROM THE TOP OF BOTH BANKS OF WARM WATER FISHERIES AND TROUT STOCKED FISHERIES, 100 FEET FROM COLD WATER FISHERIES, AND 150 FEET FROM HQ/EV STREAMS, IN A SIMILAR DENSITY AS THE TREES EXISTED PRIOR TO THE PERMITTEE CONDUCTING CONSTRUCTION ACTIVITIES. THE DENSITY OF REPLANTED TREES SHALL BE SIMILAR TO THE DENSITY THAT EXISTED PRIOR TO THE PERMITTEE CONDUCTING CONSTRUCTION ACTIVITIES BUT SHALL PROVIDE NO LESS THAN 60% UNIFORM CANOPY COVER UPON MATURATION AND SHALL BE APPROPRIATE TO THE GEOGRAPHIC LOCATION. MAINTENANCE AND INSPECTIONS SHALL ENSURE SURVIVAL AND GROWTH OF PLANTINGS AND PROTECTION FROM COMPETING PLANTS AND/OR INVASIVE, INCLUDING NOXIOUS WEEDS, AND INVASIVE SPECIES OVER A 5-YEAR ESTABLISHMENT PERIOD TO ENSURE AND PROPER FUNCTIONING OF RIPARIAN FOREST BUFFERS, AND SHALL INCLUDE MEASURES TO REPAIR DAMAGE TO THE BUFFER FROM STORM EVENTS GREATER THAN THE 2-YEAR/24-HOUR STORM.
12. EACH STREAM CHANNEL SHALL BE RESTORED AND PROPERLY STABILIZED UPON COMPLETION OF THE ASSOCIATED STREAM CROSSING. WHERE RIPRAP IS PROPOSED, THE RIPRAP SHALL BE DEPRESSED AND COVERED WITH A MINIMUM OF 6-INCHES OF STREAMBED MATERIAL. THE RESTORED STREAMBED ELEVATION SHALL NOT EXCEED THE PRE-EXISTING STREAMBED ELEVATION.
13. THE PERMITTEE SHALL AVOID WETLAND IMPACTS, TO THE EXTENT PRACTICABLE, AND MINIMIZE ANY SUCH IMPACTS. THE PERMITTEE SHALL IMMEDIATELY RESTORE ALL DISTURBED WETLAND AREAS TO ORIGINAL CONTOURS, AND REPLANT WITH INDIGENOUS WETLAND VEGETATION IN ACCORDANCE WITH THEIR RESTORATION PLAN AS PRESCRIBED IN THEIR PERMIT APPLICATION. STREAMBANK AND WETLAND DISTURBANCES SHALL BE MINIMIZED AND STABILIZED WITH INDIGENOUS VEGETATION WITHIN TEN (10) CALENDAR DAYS OF FINAL GRADING TO PREVENT EROSION AND PROVIDE COVER, SHADING, AND FOOD SOURCE FOR AQUATIC LIFE. ANY TEMPORARY WETLAND CROSSINGS SHALL BE MADE BY LOW GROUND PRESSURE MACHINERY AND WETLAND MATS OR SIMILAR DEVICES. EXCESS FILL SHALL NOT BE DEPOSITED IN ANY WETLAND, WATERCOURSE, FLOODWAY, FLOODPLAIN, OR OTHER BODY OF WATER.
14. FOR A PERIOD OF UP TO FIVE YEARS, THE PERMITTEE SHALL MONITOR THE STREAM AND WETLAND PLANTINGS. MONITORING REPORTS SHALL BE SUBMITTED TO THE RESPECTIVE DEP REGIONAL OFFICE IN THE SPRING (MAY15) AND FALL (NOVEMBER 15) FOR THE FIRST TWO (2) CALENDAR YEARS FOLLOWING CONSTRUCTION AND ANNUALLY (NOVEMBER 15) FOR FOUR (4) YEARS THEREAFTER.
   - THE MONITORING REPORTS SHALL CONTAIN INFORMATION DESCRIBING THE SUCCESS OF THE SITE AT THE TIME OF EACH INSPECTION, AN INVENTORY OF THE SURVIVING PLANT SPECIES AND PERCENT AREAL COVERAGE, PHOTOGRAPHS OF EACH SITE WITH PLANS SHOWING THE LOCATION AND ORIENTATION OF EACH OF THE PHOTOGRAPHS, AND A WRITTEN PLAN TO CORRECT ANY DEFICIENCIES IDENTIFIED DURING THE MONITORING PHASE.
15. PERMITTEE SHALL ENSURE AT LEAST AN 85 PERCENT SURVIVAL RATE. ADDITIONAL PLANTINGS AND OR REPORTS IN SUBSEQUENT YEARS BEYOND THE INITIAL FIVE (5) YEARS MAY BE REQUIRED IF AN 85 PERCENT SURVIVABILITY OF PLANTED SPECIES IS NOT ACHIEVED.
16. FOR A PERIOD OF AT LEAST THREE YEARS, THE PERMITTEE SHALL MONITOR ANY EXCEPTIONAL VALUE WETLANDS UNDER 25 PA. CODE §§ 105.17(1)(i) AND 105.17(1)(j)(1)(iii), AS AUTHORIZED BY THIS PERMIT. IN ACCORDANCE WITH THIS PERMIT, MONITORING REPORTS SHALL BE SUBMITTED TO THE RESPECTIVE DEP REGIONAL OFFICE IN THE SPRING (MAY 15) AND FALL (NOVEMBER 15) FOR THE FIRST TWO (2) CALENDAR YEARS FOLLOWING CONSTRUCTION AND ONCE (NOVEMBER 15) IN THE THIRD YEAR. THE MONITORING REPORTS SHALL CONTAIN INFORMATION DESCRIBING THE SUCCESS OF THE RESTORATION AND MITIGATION AND VALUES AT THE TIME OF INSPECTION, PHOTOGRAPHS OF THE WETLAND WITH PLANS SHOWING THE LOCATION AND ORIENTATION OF EACH PHOTOGRAPH, AND A WRITTEN PLAN TO CORRECT ANY DEFICIENCIES IDENTIFIED DURING THE MONITORING PHASE.
17. STREAMBANK DISTURBANCE SHALL BE MINIMIZED AND STABILIZED WITH INDIGENOUS VEGETATION WITHIN 24 HOURS UPON COMPLETION OF FINAL EARTHMOVING TO PREVENT EROSION AND PROVIDE COVER, SHADING, AND FOOD SOURCE FOR AQUATIC LIFE.

G. WETLAND COMPENSATORY MITIGATION AND MONITORING:

1. THE PERMITTEE SHALL CREATE PALUSTRINE FORESTED (PFO) WETLANDS IN ACCORDANCE WITH THEIR "PERMITTEE-RESPONSIBLE COMPENSATORY WETLAND MITIGATION PLAN" TO COMPENSATE FOR THE FUNCTION AND VALUE LOSS ASSOCIATED WITH PERMANENTLY CONVERTING 0.405 ACRES OF PFO WETLANDS TO PALUSTRINE EMERGENT (PEM) WETLANDS.
2. THE PROPOSED COMPENSATORY WETLAND MITIGATION SITE IN CUMBERLAND COUNTY: THE PERMITTEE SHALL ONLY PLANT THE 0.58 ACRES IN THE SEASONALLY SATURATED AREAS IDENTIFIED IN THE COMPENSATORY WETLAND MITIGATION PLAN AND SHALL NOT PLANT IN THE AREAS IDENTIFIED AS SATURATED IN THE PRESENT CONDITION IN THE COMPENSATORY WETLAND MITIGATION PLAN.
3. FOR AT LEAST FIVE (5) YEARS AFTER THE RESTORATION ACTIVITIES ARE COMPLETED, THE PERMITTEE SHALL MONITOR THE COMPENSATORY MITIGATION SITES, WETLAND RESTORATION SITES, STREAMS RESTORATION SITES AND FLOODWAY RESTORATION SITES. WITHIN SIXTY (60) DAYS OF COMPLETING CONSTRUCTION, THE PERMITTEE SHALL SUBMIT "AS-BUILT" DRAWINGS FOR THE FORESTED WETLAND CREATION PROJECT TO THE DEP. MONITORING REPORTS SHALL BE SUBMITTED TO THE RESPECTIVE DEP REGIONAL OFFICE WHERE THE MITIGATION PROJECT(S) IS(ARE) LOCATED AT A FREQUENCY OF EVERY SIX (6) MONTHS FOR THE FIRST TWO (2) YEARS AFTER MITIGATION SITE CONSTRUCTION AND ANNUALLY FOR THREE (3) YEARS THEREAFTER.
   - THE MONITORING REPORTS SHALL CONTAIN INFORMATION DESCRIBING THE SUCCESS OF THE SITE AT THE TIME OF INSPECTION, AN INVENTORY OF THE SURVIVING PLANT SPECIES AND PERCENT AERIAL COVERAGE, PHOTOGRAPHS OF EACH SITE WITH PLANS SHOWING THE LOCATION AND ORIENTATION OF EACH OF THE PHOTOGRAPHS, AND A WRITTEN PLAN TO CORRECT ANY DEFICIENCIES IDENTIFIED DURING THE MONITORING PHASE.
   - IF THE RESTORATION SITES AND COMPENSATOR), FOREST WETLAND ENHANCEMENT SITES HAVE NOT ACHIEVED DESIGN OBJECTIVES WITHIN THE MONITORING PERIOD, THE PENNITTEE WILL UNDERTAKE REMEDIAL WORK TO ASSURE ESTABLISHMENT OF FUNCTIONAL WETLAND HABITATS.
4. RESTORED AND ENHANCED HABITATS SHALL BE CONSIDERED SUCCESSFUL WHEN THEY MEET THE DESIGN OBJECTIVES.
5. WETLAND COMPENSATION CONSTRUCTION SHALL OCCUR PRIOR TO OR CONCURRENTLY WITH WETLAND IMPACTS REQUIRING COMPENSATION AS AUTHORIZED BY THIS PERMIT.
6. COMPENSATORY WETLAND MITIGATION SHALL BE STARTED AND COMPLETED WITHIN ONE (1) GROWING SEASON FROM THE COMMENCEMENT OF THE ACTIVITIES AUTHORIZED BY THIS PERMIT. WITHIN THIRTY (30) DAYS OF COMPLETING THE PLANTING PLAN, THE PENNITTEE SHALL SUBMIT REVISED PLANS TO THE RESPECTIVE DEP REGIONAL OFFICE IF AS-BUILT CONDITIONS ARE SIGNIFICANTLY DIFFERENT FROM THE ORIGINAL APPROVED PLANS.
7. THE PERMITTEE SHALL PROVIDE COPIES OF THE RECORDED DEED RESTRICTIONS OR CONSERVATION EASEMENTS FOR THE COMPENSATORY WETLAND MITIGATION SITES WITHIN 60) DAYS AFTER PERMIT ISSUANCE. TIME-STAMPED COPIES OF THE INSTRUMENTS SHALL BE SENT TO THE RESPECTIVE DEP REGIONAL OFFICE.

H. HORIZONTAL DIRECTIONAL DRILLING:

1. THE PERMITTEE SHALL CONSTRUCT AND OPERATE THE HORIZONTAL DIRECTIONAL DRILLING (HDD) CROSSINGS AT WETLANDS, STREAMS AND FLOODWAYS IN ACCORDANCE WITH TABLES 2, 3, AND 4 OF THE JOINT PERMIT APPLICATION (SECTION F, ATTACHMENTS, ENVIRONMENTAL ASSESSMENT, ATTACHMENT 11, RESOURCE TABLES) IN A MANNER TO PREVENT A RELEASE OF DRILLING FLUID TO "REGULATED WATERS OF THIS COMMONWEALTH" (RWC). THE PERMITTEE SHALL IMMEDIATELY NOTIFY THE DEPARTMENT AT 866-8250208 IN THE EVENT OF AN INADVERTENT RETURN OCCURRING, AND IMMEDIATELY ACTIVATE AND IMPLEMENT THE POLLUTION PREVENTION CONTROL PLANS (PPC PLANS) INCLUDING THE HDD INADVERTENT RETURN CONTINGENCY PLAN (IRCP), WATER SUPPLY AND KARST PPC PLANS TO PREVENT ANY IMPACTS TO RWC AND OTHER NATURAL RESOURCES.
2. THE PERMITTEE SHALL TAKE MEASURES TO AVOID MINE VOIDS AND UTILITIES.
3. THE PERMITTEE SHALL VISUALLY MONITOR THE GROUND SURFACE AND WITHIN RWC GENERALLY ALONG THE PATH OF THE HORIZONTAL DIRECTIONAL DRILLING WHILE DRILLING OPERATIONS ARE OCCURRING. THIS MONITORING SHALL INCLUDE WALKING, WADING AND USE OF A BOAT, AS NECESSARY TO EFFECTIVELY OBSERVE AND MONITOR FOR ANY RETURNS TO THE SURFACE DURING ALL RWC CROSSINGS. IF LOSS OF CIRCULATION OF DRILLING FLUID OCCURS OR DRILLING FLUID PRESSURE IS LOST, THE PERMITTEE SHALL IMMEDIATELY INVESTIGATE THE DRILLING PATHWAY AND GENERAL SURROUNDING AREA FOR AN INADVERTENT RETURN. IF AN INADVERTENT RETURN IS DISCOVERED, THEN DRILLING SHALL IMMEDIATELY CEASE.,
4. INADVERTENT RETURNS THAT IMPACT OR DISCHARGE TO STREAMS, FLOODWAYS OR WETLANDS FROM HORIZONTAL DIRECTIONAL DRILLING OPERATIONS SHALL BE REMEDIATED IN COMPLIANCE WITH THE INADVERTENT RETURN CONTINGENCY PLANS. IF CLEAN-UP OPERATIONS DIFFER FROM THE SUBMITTED PLANS, PRIOR APPROVAL FROM THE RESPECTIVE DEP REGIONAL OFFICE WILL BE NECESSARY FOR ANY MODIFICATIONS TO THE INADVERTENT RETURN CONTINGENCY PLAN FOR ADDITIONAL MITIGATION.
5. HDD ADDITIVES WHICH ARE CERTIFIED FOR CONFORMANCE WITH ANSI/NSF STANDARD 60 (DRINKING WATER TREATMENT CHEMICALS – HEALTH EFFECTS) ARE DEEMED ACCEPTABLE TO DEP, WHEN USED IN THE MANNER INDICATED IN THE CERTIFICATION OF THE ADDITIVE. ALL CONDITIONS INCLUDED AS PART OF THE ADDITIVES CERTIFICATION SHOULD BE FOLLOWED. A CURRENT LISTING OF CERTIFIED DRILLING FLUIDS IS MAINTAINED BY NSF AT HTTP://WWW.NDF.ORG/CERTIFIED/PWSCHEMICALS/LISTINGS.ASP?PRODUCTFUNCTION=DRILLING%20FLUID%20ADDITIVE. DRILLING ADDITIVE CERTIFIED AS CONFORMANT WITH ANSI/NSF STANDARD 60 DOES NOT RELIEVE OPERATORS FROM THE REQUIREMENT TO OBTAIN THE NECESSARY PERMITS TO CONDUCT HDD OPERATIONS. USE OF CERTIFIED ADDITIVES DOES NOT RELIEVE THE OPERATOR OF LIABILITY SHOULD AN INADVERTENT RETURN OR OTHER POLLUTION OCCUR IN WATERS OF THE COMMONWEALTH OCCUR AS A RESULT OF DRILLING OPERATIONS.

I. HABITAT CONSERVATION PLANS AND THREATENED AND ENDANGERED SPECIES PROTECTION:

1. THE PEIMITTEE SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF THE HABITAT CONSERVATION PLAN SUBMITTED AND APPROVED BY THE U.S. FISH AND WILDLIFE SERVICE (USFWS), PA GAME COMMISSION (PGC), PA FISH AND BOAT COMMISSION (PFBC) AND PA DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES (DCNR) FOR THE PROTECT FEDERAL AND STATE LISTED SPECIES. PROVIDE A COPY OF THE PLAN TO THE DEPARTMENT PRIOR TO INITIATION OF ANY WORK UNDER THIS PERMIT.
2. THE PERMITTEE SHALL IMPLEMENT THE APPROVED HABITAT CONSERVATION PLAN AND IN ACCORDANCE WITH AL

TEMPORARY REVEGETATION

TEMPORARY GRASS COVER SHALL BE ESTABLISHED IN THE FOLLOWING AREAS:

1. UPON TEMPORARY CESSATION OF AN EARTH DISTURBANCE ACTIVITY OR ANY STAGE OR PHASE OF AN ACTIVITY WHERE CESSATION OF EARTH DISTURBANCE ACTIVITIES IN NON-SPECIAL PROTECTION WATERSHEDS WILL EXCEED 4 DAYS, THE SITE SHALL BE IMMEDIATELY SEEDED, MULCHED OR OTHERWISE PROTECTED FROM ACCELERATED EROSION AND SEDIMENTATION PENDING FUTURE EARTH DISTURBANCE ACTIVITIES. IN A SPECIAL PROTECTION WATERSHED TEMPORARY STABILIZATION SHALL BE IMMEDIATE.
2. WHERE SOIL STOCKPILES ARE TO BE EXPOSED FOR A PERIOD GREATER THAN FOUR (4) DAYS, THE STOCKPILE SHALL BE SEEDED.
3. WHERE VEGETATIVE FILTERS MUST BE ESTABLISHED BELOW FILTER BAGS, A MINIMUM DISTANCE OF 10 FT SHALL BE SEEDED DOWN SLOPE OF THE TRAP OUTLET.
4. SEED MIXTURE FOR TEMPORARY COVER SHALL CONSIST OF 100% ANNUAL RYEGRASS. SEED SHALL BE APPLIED AT THE RATE OF 40 LB/ACRE OR AS RECOMMENDED BY A LOCAL RECOGNIZED SEED SUPPLIER APPROVED BY THE OWNER'S REPRESENTATIVE. UNLESS EXPLICITLY RESTRICTED (E.G., WETLANDS) PRIOR TO SEEDING, APPLY 1 TON OF AGRICULTURAL GRADE LIMESTONE PER ACRE PLUS 10-10-10 FERTILIZER AT THE RATE OF 500 LB. PER ACRE AND WORK INTO SOIL.
5. TEMPORARY REVEGETATION CAN ALSO BE USED DURING UNFAVORABLE GROWING SEASON FOR PERMANENT MIXES. APPLY PERMANENT SEEDING DURING FIRST FAVORABLE GROWING SEASON.

MULCHING

THE PURPOSE OF MULCH IS TO REDUCE RUNOFF AND EROSION, PREVENT SURFACE COMPACTION OR CRUSTING, CONSERVE MOISTURE, AID IN ESTABLISHING PLANT COVER, AND CONTROL WEEDS. MULCH SHALL BE APPLIED ON ANY AREA SUBJECT TO EROSION, OR WHICH HAS UNFAVORABLE CONDITIONS FOR PLANT ESTABLISHMENT AND GROWTH. THE PRACTICE MAY BE USED ALONE OR IN CONJUNCTION WITH OTHER STRUCTURAL AND VEGETATIVE CONSERVATION PRACTICES, SUCH AS WATERWAYS, PONDS, SEDIMENTATION TRAPS OR CRITICAL AREA PLANTING. ON SEDIMENT PRODUCING AREAS WHERE THE PERIOD OF EXPOSURE IS LESS THAN TWO (2) MONTHS, MULCH MATERIALS SHALL BE APPLIED ACCORDING TO THE FOLLOWING GUIDELINES:

1. STRAW MULCH SHALL BE APPLIED AT THE RATE OF THREE TONS PER ACRE. CHEMICALLY TREATED OR SALTED STRAW IS NOT ACCEPTABLE AS MULCH.
2. STRAW MULCH SHALL BE ANCHORED IMMEDIATELY AFTER APPLICATION BY AT LEAST ONE OF THE FOLLOWING METHODS.
   a. "CRIMPED" INTO THE SOIL USING TRACTOR DRAWN EQUIPMENT (STRAIGHT BLADED COULTER OR SIMILAR). THIS METHOD IS LIMITED TO SLOPES NO STEEPER THAN 3:1. MACHINERY SHOULD BE OPERATED ON THE CONTOUR. (CRIMPING OF HAY OR STRAW BY RUNNING IT OVER WITH TRACKED MACHINERY IS NOT RECOMMENDED)
   b. ASPHALT, EITHER EMULSIFIED OR CUT-BACK, CONTAINING NO SOLVENTS OR OTHER DILUTING AGENTS TOXIC TO PLANT OR ANIMAL LIFE, UNIFORMLY APPLIED AT THE RATE OF 31 GALLONS PER 1000 FT2.
   c. SYNTHETIC BINDERS (CHEMICAL BINDERS) MAY BE USED AS RECOMMENDED BY THE MANUFACTURER TO ANCHOR MULCH PROVIDED SUFFICIENT DOCUMENTATION IS PROVIDED TO SHOW THAT IT IS NON-TOXIC TO NATIVE PLANT AND ANIMAL SPECIES.
   d. LIGHTWEIGHT PLASTIC, FIBER, OR PAPER NETS MAY BE STAPLED OVER THE MULCH ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

MULCHED AREAS SHALL BE CHECKED PERIODICALLY AND AFTER EACH RUNOFF EVENT (E.G. RAIN, SNOWMELT, ETC.) FOR DAMAGE UNTIL THE DESIRED PURPOSE OF THE MULCHING IS ACHIEVED. DAMAGED PORTIONS OF THE MULCH OR TIE-DOWN MATERIAL SHALL BE REPAIRED UPON DISCOVERY.

PERMANENT REVEGETATION

SEEDING MIXTURES

FOLLOW WITH RECOMMENDED SEED MIXTURE TABLE AND NOTES, THEN PENNDOT FORMULA, THEN WETLAND, THEN APPLICATION GUIDANCE, THEN RATES, THEN NOTES.

LIMING RATES

MINIMUM 6 TONS PER ACRE AT 100% EFFECTIVE NEUTRALIZING VALUE (%ENV), UNLESS THE SOIL TEST DETERMINES THAT A LESSER AMOUNT IS NEEDED. TO DETERMINE THE ACTUAL AMOUNT OF REGULAR LIME TO APPLY, DIVIDE THE AMOUNT CALLED FOR BY THE SOIL TEST BY THE %ENV FOR THE PRODUCT USED. FOR EXAMPLE, IF 6 TONS PER ACRE IS NEEDED AND THE %ENV FOR THE LIME USED IS 88%, DIVIDE 6 BY 0.88 RESULTING IN 6.8 TONS NEEDING TO BE APPLIED.

FOR DOLOMITIC LIME, WHICH HAS A SIGNIFICANT AMOUNT OF MAGNESIUM IN IT, DIVIDE THE AMOUNT CALLED FOR BY THE SOIL TEST BY THE % CALCIUM CARBONATE EQUIVALENT (%CCE) LISTED FOR THE PRODUCT INSTEAD OF THE %ENV. THE %CCE MAY BE ABOVE 100% WHICH ACCOUNTS FOR THE FACT THAT MAGNESIUM HAS A GREATER EFFECT PER POUND THAN THE CALCIUM IN REGULAR LIME.

NOTE: WHEN A SOIL TEST REQUIRES MORE THAN 8,000 POUNDS OF LIME PER ACRE, THE LIME MUST BE MIXED INTO THE TOP 6 INCHES OF SOIL.

FERTILIZATION RATES

APPLY 10-20-20 AT 600 POUNDS/ACRE, IF TOP DRESSED OR 1,000 POUNDS/AC, IF INCORPORATED, UNLESS THE SOIL TEST DETERMINES THAT THE RATE CAN BE LESS THAN THESE MINIMUMS.

SOIL AMENDMENT APPLICATION RATE EQUIVALENTS

SOIL AMENDMENT	PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YDS.	NOTES
PERMANENT SEEDING APPLICATION RATE				
AGRICULTURAL LIME	6 TONS	240 LBS.	2,480 LBS.	OR AS PER SOIL TEST; MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS
10-20-20 FERTILIZER	1,000 LBS.	25 LBS.	210 LBS.	OR AS PER SOIL TEST; MAY NOT BE REQUIRED IN AGRICULTURAL FIELDS

MULCH APPLICATION RATES

MULCH TABLE	APPLICATION RATE (MINIMUM) PER ACRE	PER 1,000 SQ. FT.	PER 1,000 SQ. YDS.	NOTES
STRAW	3 TONS	140 LBS.	1,240 LBS.	EITHER WHEAT OR OAT STRAW, FREE OF WEEDS, NOT CHOPPED OR FINELY BROKEN
HAY	3 TONS	140 LBS.	1,240 LBS.	TIMOTHY, MIXED CLOVER AND TIMOTHY OR OTHER NATIVE FORAGE GRASSES
WOODCHIPS	4 TO 6 TONS	185 TO 275 LBS.	1,650 TO 2,500 LBS.	MAY PREVENT GERMINATION OF GRASSES AND LEGUMES
HYDROMULCH	1 TON	47 LBS.	415 LBS.	SEE LIMITATIONS ABOVE

RECOMMENDED SEED MIXTURES

MIXTURE NO.	SPECIES	SEEDING RATES – PLS(1) MOST SITES	ADVERSE SITES
1 (2)	SPRING OATS (SPRING), OR 64 96	64	96
	ANNUAL RYEGRASS (SPRING OR FALL), OR	10	15
	WINTER WHEAT (FALL), OR	90	120
	WINTER RYE (FALL)	56	112
2 (3)	~~TALL FESCUE~~ BIG BLUESTEM, OR 75	60	75
	FINE FESCUE, OR 40	35	40
	KENTUCKY BLUEGRASS, PLUS 25 30	25	30
	REDTOP(4), OR	3	3
	PERENNIAL RYEGRASS	15	20
3	BIRDSFOOT TREFOIL, PLUS 6 10	6	10
	~~TALL FESCUE~~ BIG BLUESTEM,	30	35
4	BIRDSFOOT TREFOIL, PLUS	6	10
	~~REED CANARYGRASS~~ CANADA WILDRYE	10	15
5 (5)	BIG BLUESTEM, ~~PLUS~~	10	15
	~~TALL FESCUE~~ , OR	20	25
	PERENNIAL RYEGRASS	20	25
6 (5,6)	BIG BLUESTEM, PLUS	10	15
	ANNUAL RYEGRASS	20	25
7 (5)	BIRDSFOOT TREFOIL, PLUS	20	30
	BIG BLUESTEM, ~~PLUS~~	20	30
	~~TALL FESCUE~~	20	25
8	FLATPEA, PLUS	20	30
	~~TALL FESCUE~~ BIG BLUESTEM, , OR	20	30
	PERENNIAL RYEGRASS	20	25
9 (7)	~~SERECIA LESPEDEZA~~ ROUND-HEADED BUSH CLOVER, PLUS	10	20
	~~TALL FESCUE~~ BIG BLUESTEM, PLUS	20	25
	REDTOP(4)	3	3
10	~~TALL FESCUE~~ BIG BLUESTEM, PLUS	40	60
	FINE FESCUE	10	15
11	DEERTONGUE, PLUS	15	20
	BIRDSFOOT TREFOIL	6	10
12(8)	SWITCHGRASS, OR	15	20
	BIG BLUESTEM, PLUS	15	20
	BIRDSFOOT TREFOIL	6	10
13	ORCHARDGRASS, OR	20	30
	SMOOTH BROMEGRASS, PLUS	25	35
	BIRDSFOOT TREFOIL	6	10

NOTES:

1. PURE LIVE SEED (PLS) IS THE PRODUCT OF THE PERCENTAGE OF PURE SEED TIMES PERCENTAGE GERMINATION DIVIDED BY 100. FOR EXAMPLE, TO SECURE THE ACTUAL PLANTING RATE FOR SWITCHGRASS, DIVIDE 12 POUNDS PLS SHOWN ON THE SEED TAG. THUS, IF THE PLS CONTENT OF A GIVEN SEED LOT IS 35 PERCENT, DIVIDE 12 PLS BY 0.35 TO OBTAIN 34.3 POUNDS OF SEED REQUIRED TO PLANT ONE-ACRE. ALL MIXTURES IN THIS TABLE ARE SHOWN IN TERMS OF PLS.
2. IF HIGH-QUALITY SEED IS USED, FOR MOST SITES SEED SPRING OATS AT A RATE OF TWO BUSHELS PER ACRE, WINTER WHEAT AT 11.5 BUSHELS PER ACRE, AND WINTER RYE AT ONE BUSHEL PER ACRE. IF GERMINATION IS BELOW 90 PERCENT, INCREASE THESE SUGGESTED SEEDING RATES BY 0.5 BUSHEL PER ACRE.
3. THIS MIXTURE IS SUITABLE FOR FREQUENT MOWING. DO NOT CUT SHORTER THAN FOUR INCHES.
4. KEEP SEEDING RATE TO THAT RECOMMENDED IN TABLE. THESE SPECIES HAVE MANY SEEDS PER POUND AND ARE VERY COMPETITIVE. TO SEED SMALL QUANTITIES OF SMALL SEEDS SUCH AS WEEPING LOVEGRASS AND REDTOP, DILUTE WITH DRY SAWDUST, SAND, RICE HULLS, BUCKWHEAT HULLS, ETC.
5. USE FOR HIGHWAY SLOPES AND SIMILAR SITES WHERE THE DESIRED SPECIES AFTER ESTABLISHMENT IS BIG BLUESTEM.
6. USE ONLY IN EXTREME SOUTHEASTERN OR EXTREME SOUTHWESTERN PA. SERECIA LESPEDEZA IS NOT WELL ADAPTED TO MOST OF PA.
7. DO NOT MOW SHORTER THAN NINE TO 10 INCHES.
8. ONLY SEEDS OF NATIVE PLANTS TO BE USED.

PENN DOT FORMULA B

SEEDING RATE	3 LBS PER 1,000 SQ FT			
SPECIES	% BY WT.	PURITY %	MIN. % GERMINATION	MAX. % WEED SEED
KENTUCKY BLUEGRASS	50	98	80	0.20
PERENNIAL RYE	20	98	90	0.15
RED FESCUE	30	98	85	0.15

SEED MIX APPLICATION GUIDE

SITE CONDITIONS	NURSE CROP	SEED MIXTURE (SELECT ONE MIXTURE)
SLOPES AND BANKS (NOT MOWED)		
WELL-DRAINED	1 PLUS	3, 5, 8, OR 12 (1)
VARIABLE DRAINAGE	1 PLUS	3 OR 7
SLOPES AND BANKS (MOWED)		
WELL-DRAINED	1 PLUS	2 OR 10
SLOPES AND BANKS (GRAZED/HAY)		
WELL-DRAINED	1 PLUS	2,3, OR 13
GULLIES AND ERODED AREAS	1 PLUS	3, 5, 7, OR 12 (1)
EROSION CONTROL FACILITIES (BMPS)		
SOD WATERWAYS, SPILLWAYS, FREQUENT WATER FLOW AREAS	1 PLUS	2, 3, OR 4
DRAINAGE DITCHES		
SHALLOW, LESS THAN THREE FEET DEEP	1 PLUS	2, 3, OR 4
DEEP, NOT MOWED	1 PLUS	5 OR 7
POND BANKS, DIKES, LEVEES, DAMS, DIVERSION CHANNELS, AND OCCASIONAL WATER FLOW AREAS		
MOWED AREAS	1 PLUS	2 OR 3
NON-MOWED AREAS	1 PLUS	5 OR 7
FOR HAY OR SILAGE ON DIVERSION CHANNELS AND OCCASIONAL WATER FLOW AREAS	1 PLUS	3 OR 13
HIGHWAYS (2)		
NON-MOWED AREAS		
WELL-DRAINED	1 PLUS	5, 7, 8, 9, OR 10
VARIABLE DRAINED	1 PLUS	3 OR 7
POORLY DRAINED	1 PLUS	3 OR 9
AREAS MOWED SEVERAL TIMES PER YEAR	1 PLUS	2, 3, OR 10
UTILITY ROW		
WELL-DRAINED	1 PLUS	5, 8, OR 12 (1)
VARIABLE DRAINED	1 PLUS	3 OR 7
WELL-DRAINED AREAS FOR GRAZING/HAY	1 PLUS	2, 3, OR 13
EFFLUENT DISPOSAL AREAS	1 PLUS	3 OR 4
SANITARY LANDFILLS	1 PLUS	3, 5, 7, 11 (1), OR 12 (1)
SURFACE MINES		
SPOILS, MINE WASTES, FLY ASH, SLAG, SETTLING BASIN RESIDUES AND OTHER SEVERELY DISTURBED AREAS (LIME TO SOIL TEST)	1 PLUS	3, 4, 5, 7, 8, 9,11 (1) OR 12(1)
SEVERELY DISTURBED AREAS FOR GRAZING/HAY	1 PLUS	3 OR 13
	NONE	WETLAND SEED MIX
WETLAND	1 PLUS	SEE WETLAND SEED MIX
RESIDENTIAL/LAWN	1 PLUS	PENN DOT FORMULA B

NOTES:

1. FOR SEED MIXTURES 11 AND 12, ONLY USE SPRING OATS OR WEEPING LOVEGRASS (INCLUDED IN MIX) AS NURSE CROP.
2. CONTACT THE PA DEPARTMENT OF TRANSPORTATION DISTRICT ROADSIDE SPECIALIST FOR SPECIFIC SUGGESTIONS ON TREATMENT TECHNIQUES AND MANAGEMENT PRACTICES.
3. SEED TYPICAL WETLAND RESTORATION DETAIL ON PLAN SHEET ES-0.15 FOR ADDITIONAL NOTES, DETAIL, AND SPECIAL AREA RESTORATIONS.
4. DO NOT LIME OR FERTILIZE IN WETLAND.

PEM WETLAND SEED MIX

ERNST CONSERVATION SEED MIX NO. ERNMX-122
FACW MEADOW MIX

SEEDING RATE	20 LB PER ACRE, OR 1/2 LB PER 1,000 SQ FT	SEEDING RATE	20 LB PER ACRE, OR 1/2 LB PER 1,000 SQ FT
%	SPECIES LIST	%	SPECIES LIST CONTINUED
31%	FOX SEDGE (CAREX VULPINOIDEA)	1%	SWAMP MILKWEED (ASCLEPIAS INCARNATA)
20%	VIRGINIA WILDRYE (ELYMUS VIRGINICUS)	1%	NEW ENGLAND ASTER (ASTER NOVAE-ANGLIAE (SYMPHYOTRICHUM N.))
14%	LURID (SHALLOW) SEDGE (CAREX LURIDA)	1%	FLAT TOPPED WHITE ASTER (ASTER UMBELLATUS (DOELLINGERIA UMBELLATE))
5%	GREEN BULRUSH (SCIPUS ATROVIRENS)	0.5%	JOE PYE WEED (EUPATORIUM FISTULOSUM)
4%	BLUE VERVAIN (VERBENA HASTATE)	0.5%	BONESET (EUPATORIUM PERFOLIATUM)
3.5%	WOOD REEDGRASS (CINNA ARUNDINACEA)	0.5%	DITCH STONECROP (PENTHORUM SEDOIDES)
3%	SOFT RUSH (JUNCUS EFFUSES)	0.5%	NARROWLEAF BLUE EYED GRASS (SISYRINCHLUM ANGUSTIFOLIUM)
3%	BLUNT BROOM SEDGE (CAREX SCOPARIA)	0.5%	SEEDBOX (LUDWIGIA ALTERNIFOLIA)
3%	HOP SEDGE (CAREX LUPUTINA)	0.5%	GREAT BLUE LOBELIA (LOBELIA SIPHILITICA)
2%	SENSITIVE FERN (ONOCLEA SENSIBILIS)	0.5%	MUD PLANTAIN (WATER PLANTAIN) (ALISMA SUBCORDATUM (A. PLANTAGO-AQUATICA))
2%	OXEYE SUNFLOWER (HELIOPSIS HELIANTHOIDES)	0.5%	SQUARE STEMMED MONKEYFLOWER (MIMULUS RINGENS)
1%	RATTLESNAKE GRASS (GLYCERIA CANADENSIS)	0.4%	BLADDER (STAR) SEDGE (CAREX INTUMESCENS)
1%	WOOLGRASS (SCIRPUS CYPERINUS)	0.1%	SLENDER MOUNTAINMINT (PYCNANTHEMUM TENUIFOLIUM)
		TOTAL: 100%	

PLANTING SPECIFICATIONS FOR PFO OR PSS WETLAND RESTORATION AREAS (SEE ES-0.09 FOR RESTORATION DETAIL)

VEGETATION PLANTING TYPE	SIZE	SPECIES[A]		WETLAND STATUS[B]
SHRUB SPECIES	TWO TO THREE-FOOT WHIP	ALNUS SERRULATA	SMOOTH ALDER	OBL
		CORNUS AMONUM	SILKY DOGWOOD	FACW
		LINDERA BENZOIN	SPICEBUSH	FAC
		VIBURNUM DENTATUM	NORTHERN ARROW-WOOD	FAC
TREE SPECIES	CONTAINERIZED (1-INCH DBH)[C]	ACER RUBRUM	RED MAPLE	FAC
		BETULA ALLEGHANIENSIS	YELLOW BIRCH	FAC
		PLATANUS OCCIDENTALIS	AMERICAN SYCAMORE	FACW
		QUERCUS BICOLOR	SWAMP WHITE OAK	FACW
		SALIX NIGRA	BLACK WILLOW	OBL

NOTES:

A – IF LISTED SPECIES IS UNAVAILABLE DURING PLANTING, A COMPARABLE NATIVE SUBSTITUTE WILL BE USED.
B – USACE EASTERN MOUNTAINS AND PIEDMONT WETLAND STATUS TREES AND SHRUBS WILL BE PLANTED AT A DENSITY OF AT LEAST 400 PLANTS/TREES PER ACRE IN ACCORDANCE WITH USACE GUIDANCE.
C – DBH: DIAMETER AT BREAST HEIGHT.

TETRA TECH
www.tetratech.com
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

REVISIONS

NO.	BY	DATE	REMARKS
1	RS	3/28/17	TO SPECIFY NATIVE PLANTS IN THE SEED MIXTURES

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ROBERT F. SIMCIK NO. PE-075345-E 2/6/17

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 2

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

DATE:	2/6/2017
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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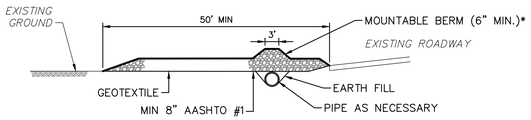
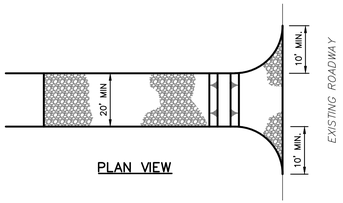
ES-0.05
SHEET 0.05 OF 102



PROFILE



PLAN VIEW

* MOUNTABLE BERM USED TO PROVIDE PROPER COVER FOR PIPE IF NEEDED.

NOTES:

REMOVE TOPSOIL PRIOR TO INSTALLATION OF ROCK CONSTRUCTION ENTRANCE. EXTEND ROCK OVER FULL WIDTH OF ENTRANCE.

RUNOFF SHALL BE DIVERTED FROM ROADWAY TO A SUITABLE SEDIMENT REMOVAL BMP PRIOR TO ENTERING ROCK CONSTRUCTION ENTRANCE.

MOUNTABLE BERM SHALL BE INSTALLED WHEREVER OPTION CULVERT PIPE IS USED AND PROPER PIPE COVER AS SPECIFIED BY MANUFACTURER IS NOT OTHERWISE PROVIDED. PIPE SHALL BE SIZED APPROPRIATELY FOR SIZE OF DITCH BEING CROSSED.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE SHALL BE MAINTAINED ON SITE FOR THE PURPOSE. ALL SEDIMENT DEPOSITED ON PAVED ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. IF EXCESSIVE AMOUNTS OF SEDIMENT ARE BEING DEPOSITED ON ROADWAY, EXTEND LENGTH OF ROCK CONSTRUCTION ENTRANCE BY 50 FOOT INCREMENTS UNTIL CONDITION IS ALLEVIATED OR INSTALL WASH RACK. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

ROCK CONSTRUCTION ENTRANCE (1 / 0.06)
NOT TO SCALE

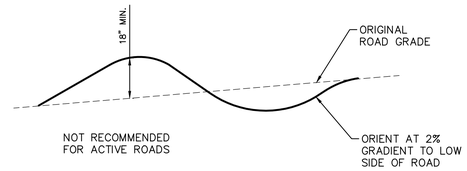
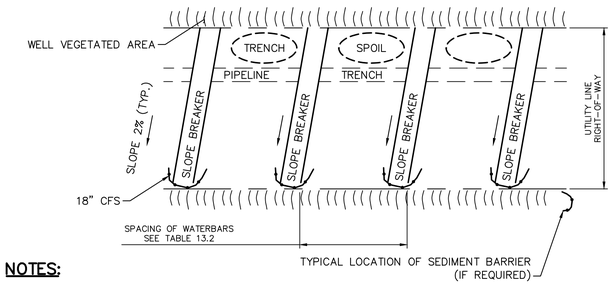


TABLE 13.2

MAXIMUM SPACING FOR PERMANENT WATERBARS ON A UTILITY LINE RIGHT-OF-WAY	
PERCENT SLOPE	SPACING (FT)
<5	250
5–15	150
15–30	100
>30	50



NOTES:

WATERBARS SHALL DISCHARGE TO A STABLE AREA.

WATERBARS SHALL BE INSPECTED WEEKLY (DAILY ON ACTIVE ROADS) AND AFTER EACH RUNOFF EVENT. DAMAGED OR ERODED WATERBARS SHALL BE RESTORED TO ORIGINAL DIMENSIONS WITHIN 24 HOURS OF INSPECTION.

MAINTENANCE OF WATERBARS SHALL BE PROVIDED UNTIL ROADWAY, SKIDTRAIL, OR RIGHT-OF-WAY HAS ACHIEVED PERMANENT STABILIZATION.

WATERBARS ON RETIRED ROADWAYS, SKIDTRAILS, AND RIGHT-OF-WAYS SHALL BE LEFT IN PLACE AFTER PERMANENT STABILIZATION HAS BEEN ACHIEVED.

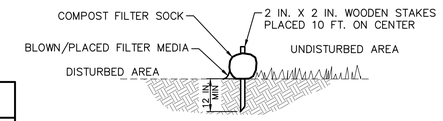
SEE TABLE 13.2 ABOVE FOR WATERBAR SPACING.

PERMANENT WATERBARS ARE REQUIRED AT ALL STREAM, RIVER, AND OTHER WATER-BODY CROSSINGS AS WELL AS UPSLOPE FROM ROADWAY AND RAILROAD CUT SLOPES.

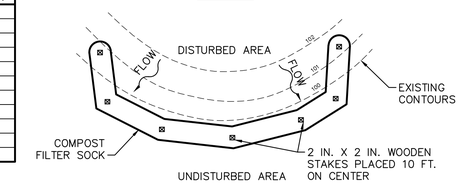
SUMPS MAY BE ADDED AS NEEDED AT THE ENDS OF WATERBARS TO PROVIDE ADDITIONAL SEDIMENT REMOVAL PRIOR TO DISCHARGE THROUGH THE 18" COMPOST FILTER SOCK.

WATERBAR (2 / 0.06)
NOT TO SCALE

MAXIMUM SLOPE LENGTHS FOR COMPOST FILTER SOCK			
% SLOPE	12" DIAMETER	18" DIAMETER	24" DIAMETER
2 (OR LESS)	520	700	1000
5	250	340	500
10	150	250	300
15	100	200	250
20	70	140	200
25	50	100	140
30	45	70	100
35	40	60	90
40	35	45	60
45	30	40	50
50	20	30	40



SECTION



PLAN VIEW

NOTES:

SOCK FABRIC SHALL MEET STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE EPA DEP EROSION CONTROL MANUAL.

COMPOST FILTER SOCK SHALL BE PLACED AT EXITING LEVEL GRADE. BOTH ENDS OF THE BARRIER SHALL BE EXTENDED AT LEAST 8 FEET UP SLOPE AT 45 DEGREES TO THE MAIN BARRIER ALIGNMENT. MAXIMUM SLOPE LENGTH ABOVE ANY BARRIER SHALL NOT EXCEED THAT SPECIFIED FOR THE SIZE OF THE SOCK AND THE SLOPE OF ITS TRIBUTARY AREA.

TRAFFIC SHALL NOT BE PERMITTED TO CROSS COMPOST FILTER SOCKS.

ACCUMULATED SEDIMENT SHALL BE REMOVED WHEN IT REACHES ½ THE ABOVE GROUND HEIGHT OF THE BARRIER AND DISPOSED IN THE MANNER DESCRIBED ELSEWHERE IN THE PLAN.

COMPOST FILTER SOCK SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. DAMAGED SOCKS SHALL BE REPAIRED ACCORDING TO MANUFACTURER'S SPECIFICATIONS OR REPLACED WITHIN 24 HOURS OF INSPECTION.

BIODEGRADABLE COMPOST FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.

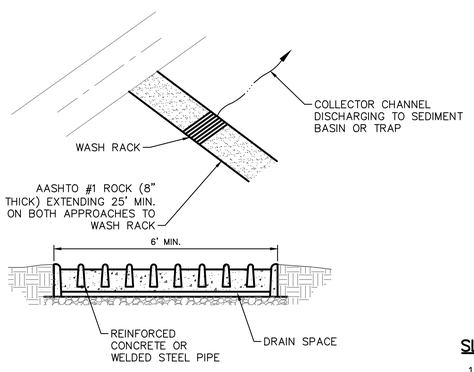
UPON STABILIZATION OF THE AREA TRIBUTARY TO THE SOCK, STAKES SHALL BE REMOVED. THE SOCK MAY BE LEFT IN PLACE AND VEGETATED OR REMOVED. IN THE LATTER CASE, THE MESH SHALL BE CUT OPEN AND THE MULCH SPREAD AS A SOIL SUPPLEMENT.

TABLE 4.1

COMPOST SOCK FABRIC MINIMUM SPECIFICATIONS					
MATERIAL TYPE	3 MIL HDPE	5 MIL HDPE	5 MIL HDPE	MULTI-FILAMENT POLYPROPYLENE (MFPP)	HEAVY DUTY MULTI-FILAMENT POLYPROPYLENE (HDMFPP)
MATERIAL CHARACTERISTICS	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE	BIO-DEGRADABLE	PHOTO-DEGRADABLE	PHOTO-DEGRADABLE
SOCK DIAMETERS	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
MESH OPENING	3/8"	3/8"	3/8"	3/8"	1/8"
TENSILE STRENGTH		26 PSI	26 PSI	44 PSI	202 PSI
ULTAVIOLET STABILITY % ORIGINAL STRENGTH (ASTM G-155)	23% AT 1000 HR.	23% AT 1000 HR.		100% AT 1000 HR.	100% AT 1000 HR.
MINIMUM FUNCTIONAL LONGEVITY	6 MONTHS	9 MONTHS	6 MONTHS	1 YEAR	2 YEARS
TWO-PLY SYSTEMS					
INNER CONTAINMENT NETTING	HDPE BIAXIAL NET				
	CONTINUOUSLY WOUND				
	FUSION-WELDED JUNCTURES				
	3/4" X 3/4" MAX. APERTURE SIZE				
OUTER FILTRATION MESH	COMPOSITE POLYPROPYLENE FABRIC (WOVEN LAYER AND NON-WOVEN FLEECE MECHANICALLY FUSED VIA NEEDLE PUNCH)				
	3/16" MAX. APERTURE SIZE				
SOCK FABRICS COMPOSED OF BURLAP MAY BE USED ON PROJECTS LASTING 6 MONTHS OR LESS.					

TABLE 4.2

COMPOST STANDARDS	
ORGANIC MATTER CONTENT	25%-100% (DRY WEIGHT BASIS)
ORGANIC PORTION	FIBROUS AND ELONGATED
PH	5.5-8.5
MOISTURE CONTENT	30%-60%
PARTICLE SIZE	30%-50% PASS THROUGH 3/8" SIEVE
SOLUBLE SALT CONCENTRATION	5.0 DS/M (MMHOS/XM) MAXIMUM



NOTES:

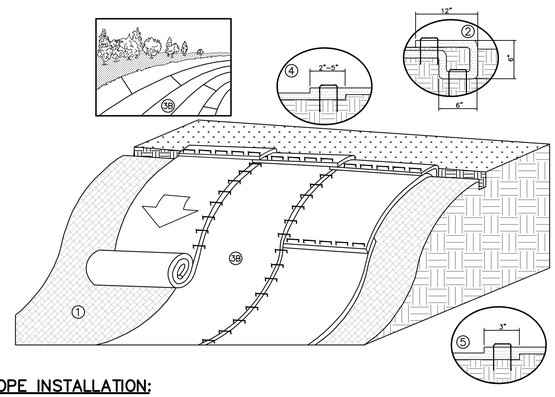
WASH RACK SHALL BE 20 FEET (MIN.) WIDE OR TOTAL WIDTH OF ACCESS.

WASH RACK SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE ANTICIPATED CONSTRUCTION VEHICULAR TRAFFIC.

A WATER SUPPLY SHALL BE MADE AVAILABLE TO WASH THE WHEELS OF ALL VEHICLES EXITING THE SITE.

MAINTENANCE: ROCK CONSTRUCTION ENTRANCE THICKNESS SHALL BE CONSTANTLY MAINTAINED TO THE SPECIFIED DIMENSIONS BY ADDING ROCK. A STOCKPILE OF ROCK MATERIAL SHALL BE MAINTAINED ON SITE FOR THIS PURPOSE. DRAIN SPACE UNDER WASH RACK SHALL BE KEPT OPEN AT ALL TIMES. DAMAGE TO THE WASH RACK SHALL BE REPAIRED PRIOR TO FURTHER USE OF THE RACK. ALL SEDIMENT DEPOSITED ON ROADWAYS SHALL BE REMOVED AND RETURNED TO THE CONSTRUCTION SITE IMMEDIATELY. WASHING THE ROADWAY OR SWEEPING THE DEPOSITS INTO ROADWAY DITCHES, SEWERS, CULVERTS, OR OTHER DRAINAGE COURSES IS NOT ACCEPTABLE.

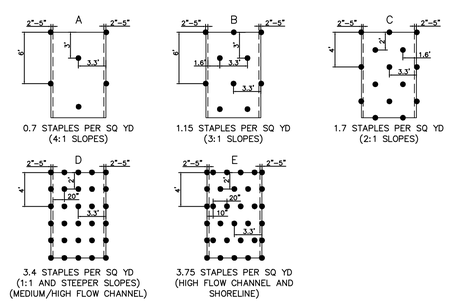
ROCK CONSTRUCTION ENTRANCE WITH WASH RACK (3 / 0.06)
NOT TO SCALE



SLOPE INSTALLATION:

1. PREPARE SOIL BEFORE INSTALLING RECPs, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECPs IN A 6 IN. DEEP X 6 IN. WIDE TRENCH WITH APPROXIMATELY 12 IN. OF RECPs EXTENDED BEYOND THE UPSLOPE PORTION OF THE TRENCH. ANCHOR THE RECPs WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12 IN. APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO THE COMPACTED SOIL AND FOLD THE REMAINING 12 IN. PORTION OF RECPs BACK OVER THE SEED AND COMPACTED SOIL. SECURE RECPs OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12 IN. APART ACROSS THE WIDTH OF THE RECPs.
3. ROLL THE RECPs (3A) DOWN OR (3B) HORIZONTALLY ACROSS THE SLOPE. RECPs WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECPs MUST BE SECURELY FASTENED TO SOIL SURFACE BY REPLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE.
4. THE EDGES OF PARALLEL RECPs MUST BE STAPLED WITH AN APPROXIMATELY 2 IN. – 5 IN. OVERLAP DEPENDING ON THE RECP TYPE.
5. CONSECUTIVE RECP SPLICED DOWN THE SLOPE MUST BE END-OVER-END (SHINGLE STYLE) WITH AN APPROXIMATE 3 IN. OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12 IN. APART ACROSS ENTIRE RECPs WIDTH.

STAPLE PATTERN GUIDE



NOTES:

1. FOR SLOPES BETWEEN 3:1 AND 1:1, USE NORTH AMERICAN GREEN ERONET SC 150 OR OWNER APPROVED EQUAL MATERIAL/METHOD.
2. IN AREAS WHERE LIVESTOCK ARE KEPT, USE NORTH AMERICAN GREEN BIONET SC 150 BN OR OWNER APPROVED EQUAL MATERIAL/METHOD.
3. SEED AND SOIL AMENDMENTS SHALL BE APPLIED ACCORDING TO THE RATES IN THE PLAN DRAWINGS PRIOR TO INSTALLING THE BLANKET.
4. PROVIDE ANCHOR TRENCH AT TOE OF SLOPE IN SIMILAR FASHION AS AT TOP OF SLOPE
5. SLOPE SURFACE SHALL BE FREE OF ROCKS, CLODS, STICKS, AND GRASS.
6. BLANKET SHALL HAVE GOOD CONTINUOUS CONTACT WITH UNDERLYING SOIL THROUGHOUT ENTIRE PROJECT LENGTH. LAY BLANKET LOOSELY AND STAKE OR STAPLE TO MAINTAIN DIRECT CONTACT WITH SOIL. DO NOT STRETCH BLANKET.
7. THE BLANKET SHALL BE STAPLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS,
8. BLANKETED AREAS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT UNTIL PERENNIAL VEGETATION IS ESTABLISHED TO A MINIMUM UNIFORM 70% COVERAGE THROUGHOUT THE BLANKETED AREA. DAMAGED OR DISPLACED BLANKETS SHALL BE RESTORED OR REPLACED WITHIN 4 CALENDAR DAYS.

EROSION CONTROL BLANKET – SLOPE INSTALLATION (4 / 0.06)
NOT TO SCALE

COMPOST FILTER SOCK (5 / 0.06)
NOT TO SCALE

TETRA TECH
www.tetratech.com
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

REVISIONS

NO.	BY	DATE	REMARKS
1	RS	3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS
2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ROBERT F. SIMCIK 2/9/17

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 2

1–20" & 1–16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

DATE:	2/6/2017
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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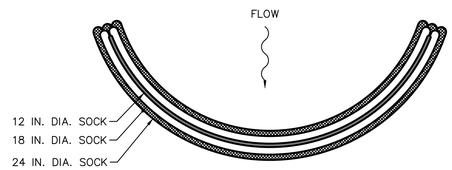
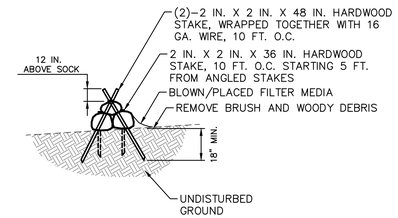
SHEET 0.06 OF 102



PLAN VIEW



STAKING VIEW

DESIGN NOTES:

1. COMPOST SEDIMENT TRAP SHALL BE SIZED TO PROVIDE 2000 CUBIC FEET OF STORAGE CAPACITY FOR EACH ACRE TRIBUTARY TO THE TRAP.
2. MINIMUM BASE WIDTH IS EQUAL TO THE HEIGHT.
3. SEDIMENT ACCUMULATION SHALL NOT EXCEED ⅓ THE TOTAL HEIGHT OF THE TRAP.
4. SOCKS SHALL BE OF LARGER DIAMETER AT THE BASE OF THE TRAP AND DECREASE IN DIAMETER FOR SUCCESSIVE LAYERS AS SHOWN ON THE PLAN VIEW.
5. ENDS OF THE TRAP SHALL BE A MINIMUM OF 1 FOOT HIGHER IN ELEVATION THAN THE MID–SECTION, WHICH SHALL BE LOCATED AT THE POINT OF DISCHARGE.

NOTES:

SOCK MATERIAL SHALL MEET THE STANDARDS OF TABLE 4.1 OF THE PA DEP EROSION CONTROL MANUAL. COMPOST SHALL MEET THE STANDARDS OF TABLE 4.2 OF THE PA DEP EROSION CONTROL MANUAL.

COMPOST SOCK SEDIMENT TRAPS SHALL NOT EXCEED THREE SOCKS IN HEIGHT AND SHALL BE STACKED IN PYRAMIDAL FORM AS SHOWN ABOVE. MINIMUM TRAP HEIGHT IS ONE 24" DIAMETER SOCK. ADDITIONAL STORAGE MAY BE PROVIDED BY MEANS OF AN EXCAVATED SUMP 12" DEEP EXTENDING 1 TO 3 FEET UPSLOPE OF THE SOCKS ALONG THE LOWER SIDE OF THE TRAP.

COMPOST SOCK SEDIMENT TRAPS SHALL PROVIDE 2,000 CUBIC FEET STORAGE CAPACITY WITH 12" FREEBOARD FOR EACH TRIBUTARY DRAINAGE ACRE. (SEE MANUFACTURER FOR ANTICIPATED SETTLEMENT.)

THE MAXIMUM TRIBUTARY DRAINAGE AREA IS 5.0 ACRES. SINCE COMPOST SOCKS ARE "FLOW–THROUGH," NO SPILLWAY IS REQUIRED.

COMPOST SOCK SEDIMENT TRAPS SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. SEDIMENT SHALL BE REMOVED WHEN IT REACHES ⅓ THE HEIGHT OF THE SOCKS.

PHOTODEGRADABLE AND BIODEGRADABLE SOCKS SHALL NOT BE USED FOR MORE THAN 1 EYAR.

COMPOST SOCK SEDIMENT TRAP (6 / 0.07)
NOT TO SCALE

TETRA TECH
www.tetratech.com
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921–7090 | F: (412) 921–4040

REVISIONS

NO.	BY	DATE	REMARKS
1	RS	3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS
2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ROBERT F. SIMCIK 075848-E 2/6/17

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 2

1–20" & 1–16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
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NOTES & DETAILS

DATE:	2/6/2017
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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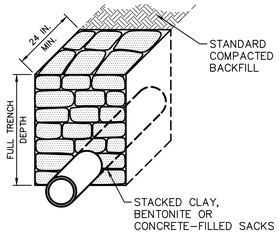
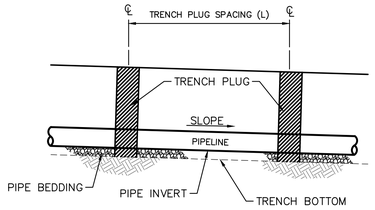


SECTION VIEW



ELEVATION

REQUIRED SPACING & MATERIALS FOR TRENCH PLUGS		
TRENCH SLOPE (%)	SPACING L (FT)	PLUG MATERIAL
<5	1,000	* CLAY, BENTONITE OR CONCRETE–FILLED SACKS
5–15	500	* CLAY, BENTONITE OR CONCRETE–FILLED SACKS
15–25	300	* CLAY, BENTONITE OR CONCRETE–FILLED SACKS
25–35	200	* CLAY, BENTONITE OR CONCRETE–FILLED SACKS
35–100	100	* CLAY, BENTONITE OR CONCRETE–FILLED SACKS
>100	50	CEMENT BAGS (WETTED) OR MORTARED STONE

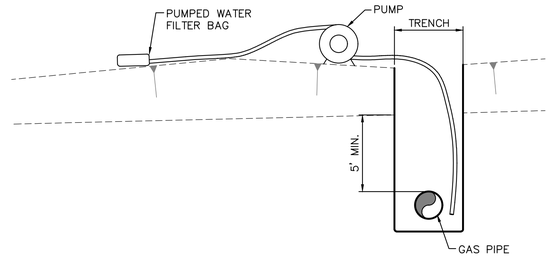
* TOP SOIL MAY NOT BE USED TO FILL SACKS

NOTES:

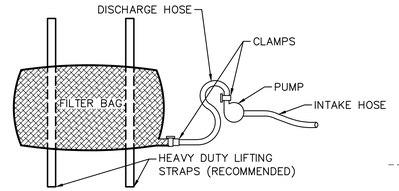
IMPERVIOUS TRENCH PLUGS ARE REQUIRED FOR ALL STREAM, RIVER, WETLAND, OR OTHER WATERBODY CROSSINGS.

PLACE A MINIMUM OF ONE (1) TRENCH PLUG AT A MAXIMUM SPACING OF 100 FEET BETWEEN TRENCH PLUGS WITHIN A WETLAND. WETLAND CROSSINGS LESS THAN FIFTY (50) FEET DO NOT REQUIRE AN INTERNAL TRENCH PLUG. (IN ACCORDANCE WITH SPECIAL CONDITIONS PART, SECTION K, CONDITION 7 OF THE APPROVED CHAPTER 105 PERMIT)

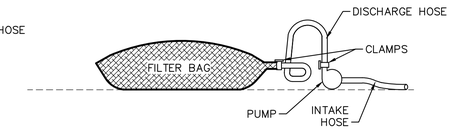
TRENCH PLUG INSTALLATION (10 / 0.08)
NOT TO SCALE



TRENCH DEWATERING DETAIL
NOT TO SCALE



PLAN VIEW



ELEVATION VIEW

NOTES:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON–WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D–4884	60 LB/IN
GRAB TENSILE	ASTM D–4632	205 LB
PUNCTURE	ASTM D–4833	110 LB
MULLEN BURST	ASTM D–3786	350 PSI
UV RESISTANCE	ASTM D–4355	70%
AOS % RETAINED	ASTM D–3751	80 SIEVE

A SUITABLE MEANS OF ACCESSING THE BAG WITH MACHINERY REQUIRED FOR DISPOSAL PURPOSES SHALL BE PROVIDED. FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME ½ FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

BAGS SHALL BE LOCATED IN WELL–VEGETATED (GRASSY) AREA, AND DISCHARGE ONTO STABLE, EROSION RESISTANT AREAS. WHERE THIS IS NO POSSIBLE, A GEOTEXTILE UNDERLAYMENT AND FLOW PATH SHALL BE PROVIDED. BAGS MAY BE PLACE DON FILTER STONE TO INCREASE DISCHARGE CAPACITY. BAGS SHALL NOT BE PLACED ON SLOPES GREATER THAN 5% FOR SLOPES EXCEEDING 5%, CLEAN ROCK OR OTHER NON–ERODIBLE AND NON–POLLUTING MATERIAL MAY BE PLACE UNDER THE GAB TO REDUCE SLOPE STEEPNESS.

NO DOWNSLOPE SEDIMENT BARRIER IS REQUIRED FOR MOST INSTALLATIONS. COMPOST BERM OR COMPOST FILTER SOCK SHALL BE INSTALLED BELOW BAGS LOCATED IN HQ OR EV WATERSHEDS, WITHIN 50 FEET OF ANY RECEIVING SURFACE WATER OR WHERE GRASSY AREA IS NOT AVAILABLE.

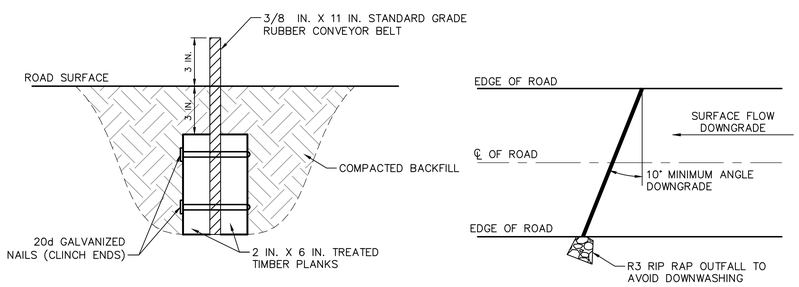
THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

THE PUMPING RATE SHALL BE NO GREATER THAN 750 GPM OR ½ THE MAXIMUM SPECIFIED BY THE MANUFACTURER, WHICHEVER IS LESS. PUMP INTAKES SHALL BE FLOATING AND SCREENED.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

WHERE COMPOST FILTER SOCK IS NECESSARY TO ELEVATE THE PUMPED WATER FILTER BAG TO AN ABACT E&S BMP, THE COMPOST FILTER SOCK SHALL BE PLACED TO SUFFICIENT LENGTH TO MANAGE ALL FLOW FROM THE PUMPED WATER FILTER BAG (IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION II, CONDITION I OF THE APPROVED CHAPTER 102 PERMIT).

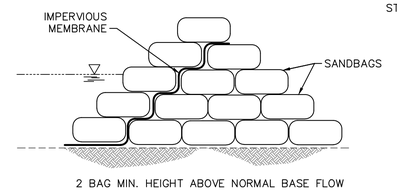
PUMPED WATER FILTER BAG (11 / 0.08)
NOT TO SCALE



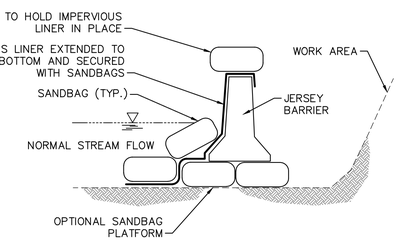
NOTE:
1. DEFLECTOR SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT.
2. ACCUMULATED SEDIMENT SHALL BE REMOVED FROM DEFLECTOR WITHIN 24 HOURS OF INSPECTION.
3. BELT SHALL BE REPLACED WHEN WORN AND NO LONGER EFFECTIVE.
4. MAXIMUM SPACING OF DEFLECTORS SHALL BE AS SHOWN IN TABLE.

ROAD GRADE (PERCENT)	SPACING BETWEEN DIPS, CULVERTS,OR DEFLECTORS (FEET)
<2	300
3	235
4	200
5	180
6	165
7	155
8	150
9	145
10	140

WATER DEFLECTOR (12 / 0.08)
NOT TO SCALE



STACKED SANDBAGS OPTION



JERSEY BARRIER OPTION

NOTES:

CONSTRUCT DAMS WITH SAND BAGS, JERSEY BARRIERS OR SIMILAR MATERIAL WITH AN IMPERVIOUS LINER EXTENDED TO THE STREAM BOTTOM AND SECURED WITH SANDBAGS MAINTAINING AMBIENT DOWNSTREAM FLOW RATES.

SANDBAG OR DIVERSION DAM (13 / 0.08)
NOT TO SCALE

TETRA TECH
www.tetratech.com
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921–7090 | F: (412) 921–4040

REVISIONS

NO.	BY	DATE	REMARKS
1	RS	3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS
2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ROBERT F. SIMCIK ENGINEER 075364-E

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 2

1–20" & 1–16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

DATE:	2/6/2017
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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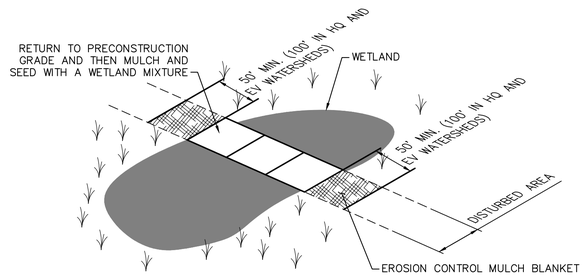
ES–0.08
SHEET 0.08 OF 102

R:_Marcellus Shale Projects\Sunoco\5958 – Penn Pipeline Project\5 – Cambria\E&S\5958ES000.08.dwg PIT NICHOLE.NAJESKI 4/17/2017 12:52:15 PM

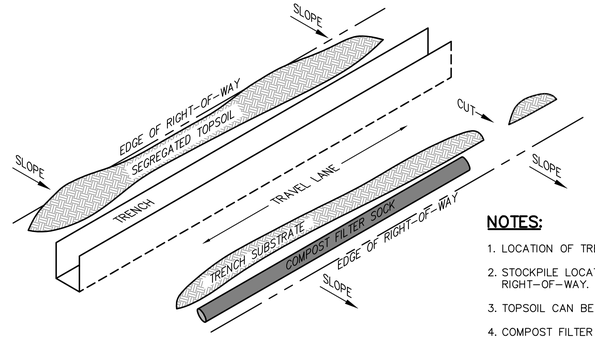


NOTES:

1. BACKFILL TRENCH; WERE SOILS WHERE SEGREGATED, REPLACE IN ORDER OF REMOVAL (CONSULT SPREAD HYDROGEOLOGIST PRIOR TO AND DURING BACKFILLING)
2. ONCE BACKFILLING IS COMPLETE, REMOVE TEMPORARY TIMBER MATTING AND ALL CONSTRUCTION DEBRIS AND RESTORE ORIGINAL GRADES AND HYDROLOGY.
3. RESTORATION ACTIVITIES SHALL BEGIN IMMEDIATELY AFTER BACKFILLING. TEMPORARILY REVEGETATE ALL IMPACTED WETLANDS IN ACCORDANCE WITH PLAN SHEET ES-0.05 TO ALLOW RAPID STABILIZATION AND DETER INVASIVE SPECIES.
4. PERMANENTLY REVEGETATE IMPACTED PEM WETLANDS IN ACCORDANCE WITH PLAN SHEET ES-0.05 THAT CALLS FOR ERNST CONSERVATION SEED MIX NO. ERNMX-122 FACW MEADOW MIX. PLANT DURING THE RECOMMENDED PLANTING SEASON.
5. TEMPORARY OR PERMANENT REVEGETATION IS NOT NECESSARY IN AREAS OF STANDING WATER.
6. NO SOIL AMENDMENTS, LIME, FERTILIZER, OR BINDING AGENTS ARE TO BE USED IN WETLAND AREAS.
7. PSS IMPACTED WETLAND AREAS WHERE NOTED ON PLAN SHEETS WILL BE PLANTED WITH SHRUB SPECIES IN ACCORDANCE WITH ES-0.05. PLANT DURING THE RECOMMENDED PLANTING SEASON.
8. PSS IMPACTED WETLAND AREAS WHERE THE ROOT SYSTEM WAS NOT REMOVED (E.G., MATTED OVER) DO NOT REQUIRE REPLANTING. PLANT DURING THE RECOMMENDED PLANTING SEASON.
9. PFO IMPACTED WETLANDS AREAS WHERE NOTED ON PLAN SHEETS FOR RESTORATION WILL BE PLANTED WITH THE TREE SPECIES IN ACCORDANCE WITH ES-0.05.
10. PSS AND PFO RESTORATION AREAS WILL BE PROTECTED WITH "NO-MOW" SIGNS.
11. REFER TO THE PROJECT'S IMPACT AVOIDANCE, MINIMIZATION, AND MITIGATION PROCEDURES FOR MORE SPECIFICS ON WETLAND RESTORATION IN GENERAL AND SPECIFICS REGARDING PSS AND PFO RESTORATION EFFORTS.

TYPICAL WETLAND RESTORATION

SCALE: NOT TO SCALE

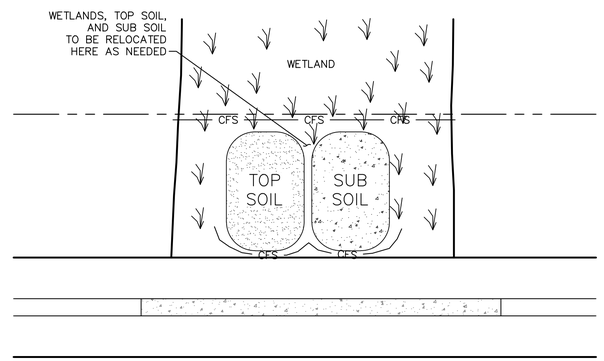


NOTES:

1. LOCATION OF TRENCH AND TRAVEL LANE WILL VARY BASED ON PROPOSED PIPE LOCATIONS.
2. STOCKPILE LOCATION PLACED UPSLOPE OF TRENCH TO DIVERT OFF-SITE DRAINAGE AWAY FROM RIGHT-OF-WAY.
3. TOPSOIL CAN BE PLACED WITH DITCH SPOIL IF PROPERLY SEGREGATED.
4. COMPOST FILTER SOCK TO BE INSTALLED PARALLEL TO EXISTING CONTOURS.
5. TOPSOIL TO BE REPLACED TO PRECONSTRUCTION DEPTH (TO BE FIELD VERIFIED).

RIGHT-OF-WAY DETAIL

NOT TO SCALE

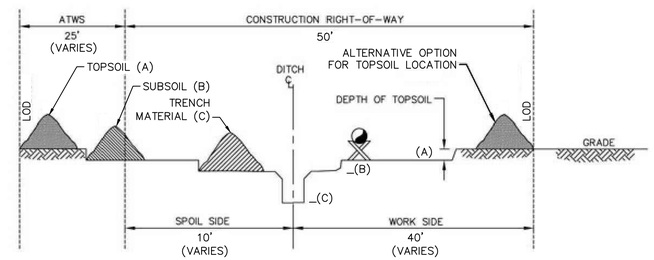


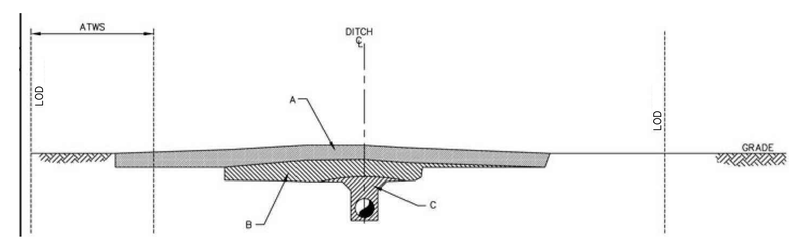
NOTE:

PROVIDE PHYSICAL SEPARATION BENEATH SPOIL PILE AND WETLAND SOIL TO ENSURE FULL REMOVAL AND TO MINIMIZE IMPACTS.

SPOIL STOCKPILE CONTAINMENT – WETLANDS

NOT TO SCALE



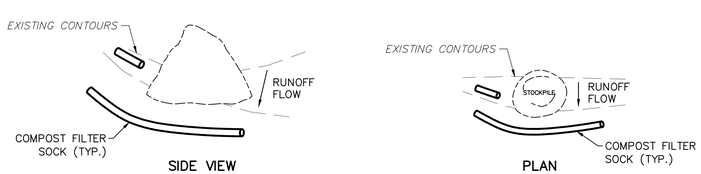


SPOIL STOCKPILE CONTAINMENT – TRIPLE DITCH

NOT TO SCALE

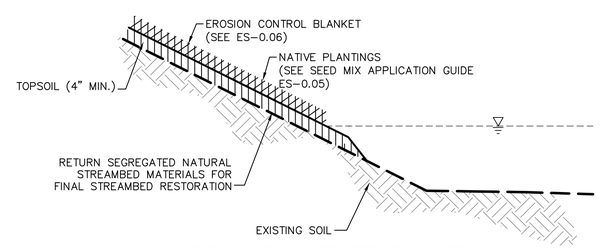
NOTES:

1. TRIPLE DITCH METHOD WILL BE USED TO SEGREGATE PROBLEM SOILS SUCH AS SALINE OR SODIC SOILS, IDENTIFIED STREAM CROSSINGS, AND/OR AS OTHERWISE DIRECTED.
2. ENSURE THE EXCAVATED SOILS ARE IN SEPARATE STOCKPILES WITH VISUAL SEPARATION OF AT LEAST 2' BETWEEN PILES.
3. EXCAVATED SOILS ARE TO BE PLACED BACK IN THE SEQUENCE IN WHICH WERE REMOVED.



SPOIL STOCKPILE CONTAINMENT – UPLANDS

NOT TO SCALE



TYPICAL BANK RESTORATION DETAIL

NOT TO SCALE

TETRA TECH
www.tetratech.com
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
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REVISIONS

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2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ROBERT F. SIMCIK ENGINEER 5/16/17

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 2

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

DATE:	2/6/2017
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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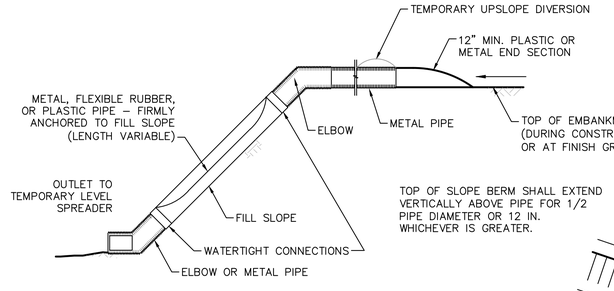
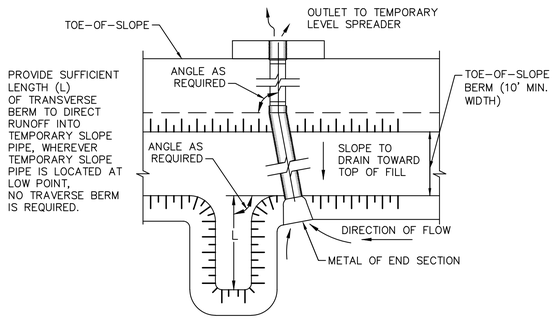
ES-0.09

SHEET 0.09 OF 102





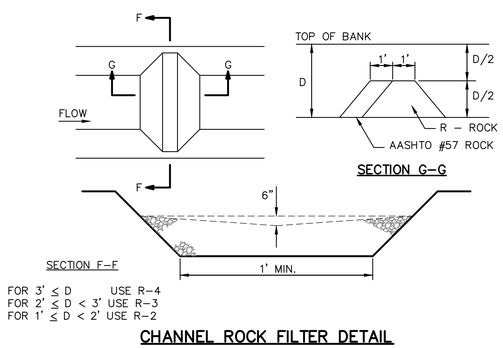
MINIMUM DIMENSIONS FOR TEMPORARY SLOPE PIPES		
DRAINAGE AREA (ACRES)	MINIMUM PIPE DIAMETER (IN.)	MINIMUM BERM HEIGHT (IN.)
<2	12	24
2–4	15	27
4–5	18	30

* TEMPORARY SLOPE PIPES SHOULD BE INSPECTED ON A WEEKLY BASIS AND AFTER EACH RUNOFF EVENT. ANY ACCUMULATED SEDIMENT SHOULD BE REMOVED FROM THE ENTRANCE. DAMAGED PIPE SHOULD BE REPAIRED OR REPLACED. NEEDED REPAIRS SHOULD BE INITIATED IMMEDIATELY AFTER THE INSPECTION.

NOTES:

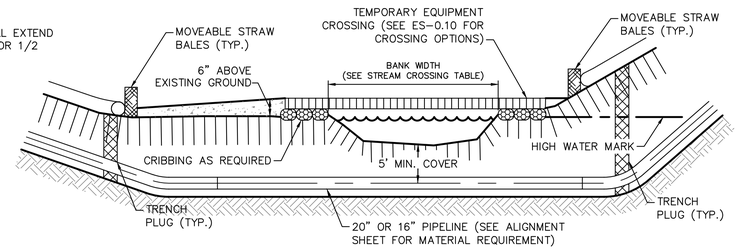
1. THE MAXIMUM DISTANCE BETWEEN ANCHOR STAKES SHALL BE 10 FEET.
2. TRANSVERSE BERM SHALL BE USED WHENEVER TEMPORARY SLOPE PIPE IS NOT LOCATED AT LOW POINT.
3. SLOPE PIPES SHALL BE INSPECTED WEEKLY AND AFTER EACH RUNOFF EVENT. ANY ACCUMULATED SEDIMENT SHALL BE REMOVED FROM THE INLET IMMEDIATELY.
4. DAMAGED PIPE SECTIONS SHALL BE REPLACED WITHIN 24 HOURS. LEAKING CONNECTIONS SHALL BE REPAIRED IMMEDIATELY.

TEMPORARY SLOPE PIPE DETAIL
NOT TO SCALE

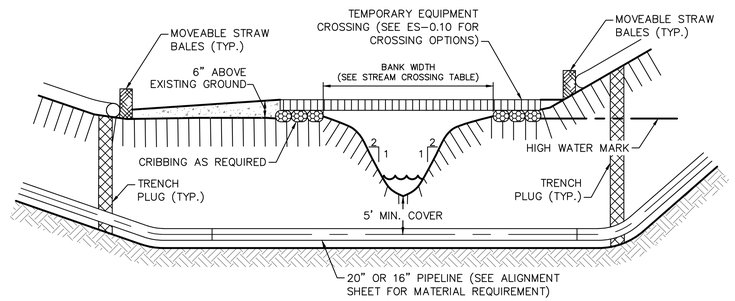


FOR 3' ≤ D USE R-4
FOR 2' ≤ D < 3' USE R-3
FOR 1' ≤ D < 2' USE R-2

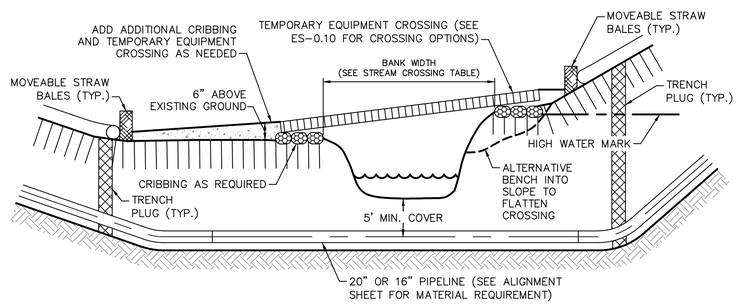
CHANNEL ROCK FILTER DETAIL
NOT TO SCALE



TYPICAL FLAT STREAM CROSSING



TYPICAL STEEP BANK STREAM CROSSING

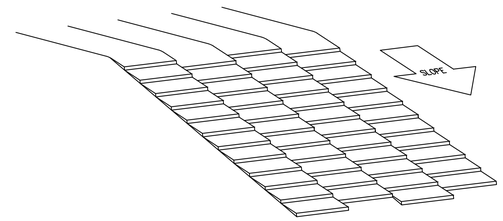


TYPICAL SLOPED STREAM CROSSING

NOTES:

1. SEE SITE SPECIFIC PLAN DRAWINGS FOR SITE SPECIFIC STREAM CROSSING DETAILS WHERE INDICATED.
2. STREAM CROSSING TECHNIQUE TO BE DETERMINED IN THE FIELD BY THE ENVIRONMENTAL INSPECTOR IN CONSULTATION WITH THE CONTRACTOR BASED UPON FIELD CONDITIONS.
3. SEE STREAM CROSSING TABLE FOR BANK WIDTHS.
4. SEE STEEP BANK STABILIZATION DETAIL WHEN BANK SLOPES ARE GREATER THAN 2H:1V.
5. SEE RIP-RAP BANK STABILIZATION DETAIL WHEN BANK SLOPE IS 2H:1V OR FLATTER.
6. SEE PLAN DRAWING FOR TRENCH PLUG LOCATIONS.

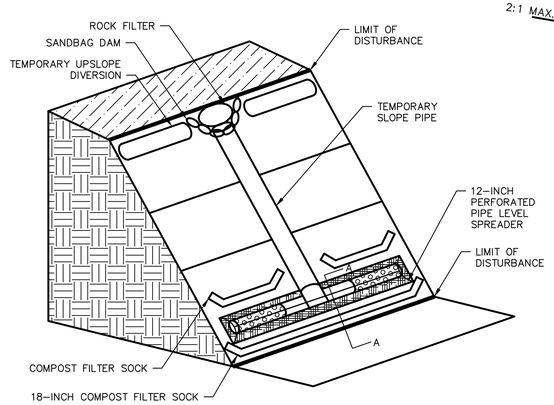
TYPICAL STREAM CROSSING DETAILS
NOT TO SCALE

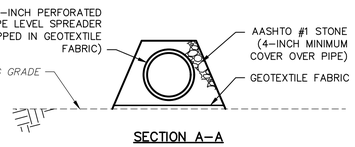


NOTES:

1. DOZER TREADS CREATE GROOVES PERPENDICULAR TO SLOPE.

SURFACE ROUGHENING DETAIL
NOT TO SCALE



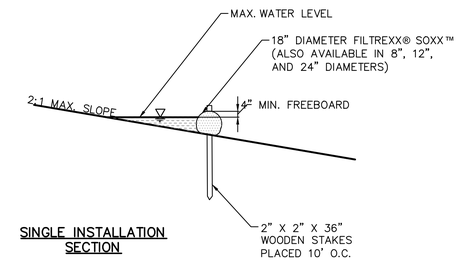


SECTION A–A

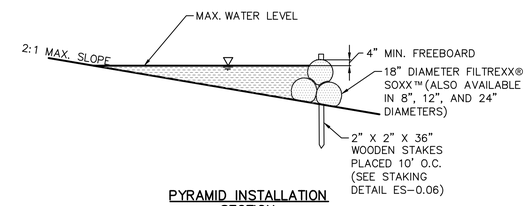
NOTES:

1. LEVEL SPREADER PIPES TO BE 12-INCH JM EAGLE EAGLE CORR PE PERFORATED PIPE (OR APPROVED EQUAL) AND SHALL BE CAPPED AT BOTH ENDS.
2. LEVEL SPREADER TO BE INSTALLED PARALLEL TO CONTOURS AT LEVEL ELEVATION.
3. PERFORATED PIPE TO BE UNDERLAIN AND WRAPPED WITH GEOTEXTILE FABRIC AND COVERED WITH AASHTO NO. 1 STONE. MINIMUM STONE COVER SHALL BE 4-INCHES OVER PERFORATED PIPE.
4. ALL LEVEL SPREADER STONE WILL BE REMOVED AND DISBTURBED AREA TO BE RESTORED IN ACCORDANCE WITH E&S PLAN.
5. LEVEL SPREADERS TO BE INSTALLED AT ALL TEMPORARY SLOPE PIPE DISCHARGES AT LOW POINTS OF DIVERSION BERM.
6. LEVEL SPREADERS TO BE INSPECTED WEEKLY OR AFTER MEASURABLE RAINFALL EVENT AND SHALL BE MAINTAINED IN GOOD CONDITION AT ALL TIMES.

TEMPORARY LEVEL SPREADER DETAIL
NOT TO SCALE

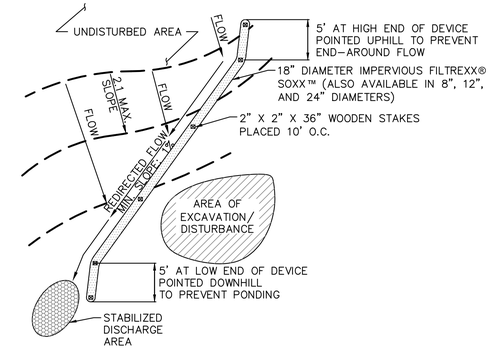


SINGLE INSTALLATION SECTION



PYRAMID INSTALLATION SECTION

FILTREXX® RUNOFF DIVERSION SECTIONS
NO SCALE



NOTES:

1. REMOVE SEDIMENT FROM THE UPSLOPE SIDE OF THE SOXX™ WHEN ACCUMULATION HAS REACHED ½ OF EFFECTIVE HEIGHT OF SOXX™.
2. SLOPES GREATER THAN 5% MAY REQUIRE ADDITIONAL STABILIZATION PRACTICES.
3. SOXX™ MAY BE SEEDED AT THE TIME OF INSTALLATION.
4. ALTERNATE COMPOST FILTER SOCK MAY BE SUBSTITUTED FOR FILTREXX® SOXX™ WITH PRIOR APPROVAL FROM THE ENGINEER.

TEMPORARY UPSLOPE DIVERSION BERM FOR FILTREXX® RUNOFF DIVERSION
NOT TO SCALE

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PITTSBURGH, PA 15220
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REVISIONS

NO.	BY	DATE	REMARKS
1	RS	3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS
2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ROBERT F. SIMCIK ENGINEER 2/8/17

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 2

1–20" & 1–16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

DATE:	2/6/2017
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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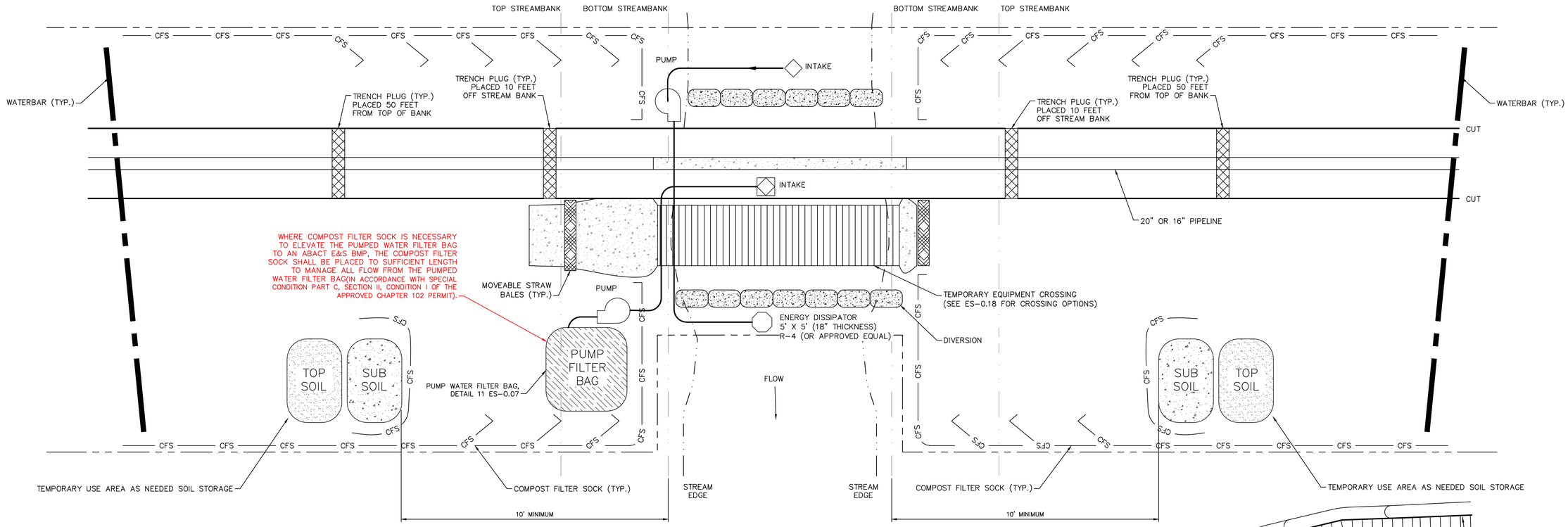
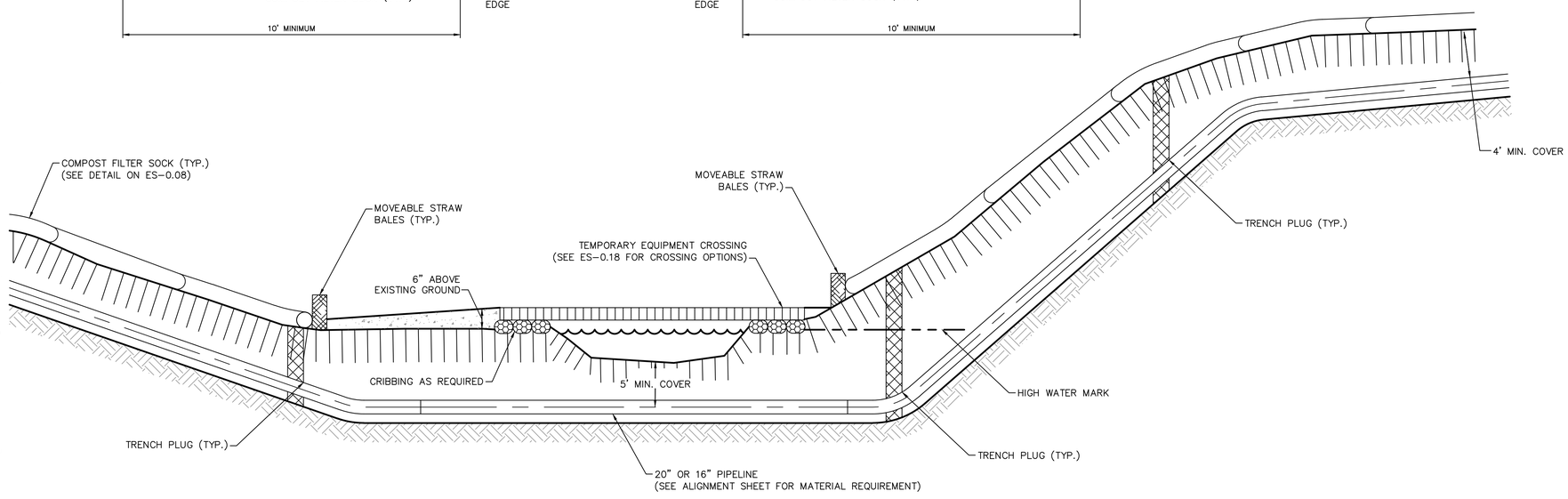
ES–0.10
SHEET 0.10 OF 102



NOTES:

1. SEE PLAN SHEETS FOR FLOODWAY AND FLOODPLAIN LOCATIONS AND FOR REFERENCE TO SITE-SPECIRIC STREAM CROSSING DRAWINGS.
2. CONSTRUCT WATERBODY CROSSINGS AS PERPENDICULAR TO THE AXIS OF THE WATERBODY CHANNEL AS ENGINEERING AND ROUTING CONDITIONS ALLOW.
3. SETUP PUMP AND HOSE AS SHOWN, OR USE OTHER PRACTICAL ALTERNATIVES. PUMP SHOULD HAVE TWICE THE PUMPING CAPACITY OF ANTICIPATED FLOW.
4. CONTRACTOR TO ENSURE A SUFFICIENT NUMBER OF ACTIVE AND BACKUP PUMPS TO MAINTAIN TWICE THE PUMPING CAPACITY OF ANTICIPATED FLOW ARE AVAILABLE AT THE SITE DURING THE INSTALLATION.
5. INSTALL UPSTREAM DAM, THEN DOWNSTREAM DAM. KEEP PUMP RUNNING TO MAINTAIN STREAM FLOW, DETAIL 13 ES-0.08.
6. BYPASS PUMP INTAKES SHALL BE SCREENED AND MAINTAINED A SUFFICIENT DISTANCE FROM THE STREAM BOTTOM TO PREVENT PUMPING OF CHANNEL BOTTOM MATERIALS AND AQUATIC LIFE.
7. AN ENERGY DISSIPATOR IS REQUIRED AT THE DISCHARGE OF THE BYPASS PUMPS.
8. WATERBARS ARE TO BE PLACED 50 FEET FROM TOP OF BANK EXCEPT AS NOTED ON SITE SPECIFIC PLAN DRAWINGS.
9. MARK THE TOP OF STREAMBANK WITH HIGH VISIBLE FLAGGING AND POST RESOURCE AND NO REFUELING SIGNS WITHIN 100 FEET OF TOP OF STREAMBANK;
10. HAZARDOUS OR POLLUTANT MATERIAL STORAGE AREAS SHALL BE LOCATED AT LEAST 100 FEET BACK FROM TOP OF STREAMBANK;
11. GRUBBING SHALL NOT TAKE PLACE WITHIN 50 FEET OF TOP OF BANK PRIOR TO STREAM INSTALLATION WITH THE EXCEPTION OF THE TRAVEL LANE UNTIL ALL MATERIALS REQUIRED TO COMPLETE CROSSING ARE ON SITE AND PIPE IS READY FOR INSTALLATION;
12. CONSTRUCT DAMS WITH SAND BAGS, JERSEY BARRIERS OR SIMILAR MATERIAL WITH AN IMPERVIOUS LINER EXTENDED TO THE STREAM BOTTOM AND SECURED WITH SANDBAGS (SEE ES-0.08) MAINTAINING AMBIENT DOWNSTREAM FLOW RATES;
13. NATURAL STREAM BED MATERIAL TO BE STRIPPED AND SEGREGATED FROM SUBSURFACE MATERIAL FOR FINAL STREAMBED RESTORATION. EXCAVATION PORTION OF NATIVE STREAM BEDS COMPRISED OF ROCK, COBBLE, OR GRAVEL ARE TO BE STRIPPED AND SEGREGATED AND USED DURING STREAM RESTORATION.
14. REMOVE ALL CONSTRUCTION MATERIAL AND STRUCTURES FROM THE WATERBODY AFTER CONSTRUCTION;
15. RESTORE STREAM CHANNELS AND BOTTOMS TO THEIR PRECONSTRUCTION CONTOURS OR BETTER, AND STABILIZING THE STREAM CHANNEL PRIOR TO REESTABLISHING FLOW.
16. ALL EXCESS EXCAVATED MATERIAL SHALL BE REMOVED FROM THE STREAM FLOODWAY PRIOR TO PERMANENTLY STABILIZING STREAM BANKS; AND,
17. ALL DISTURBED AREAS WITHIN 50 FEET OF TOP OF BANK AND 100 FEET IN SPECIAL PROTECTION WATERSHEDS SHOULD BE BLANKETED OR MATTED WITHIN 24 HOURS OF INITIAL DISTURBANCE FOR MINOR STREAMS OR 48 HOURS OF INITIAL DISTURBANCE FOR MAJOR STREAMS UNLESS OTHERWISE AUTHORIZED. APPROPRIATE STREAM BANK PROTECTION SHALL BE PROVIDED WITHIN THE CHANNEL.
18. KEEP LIME AND FERTILIZERS OUT OF STREAM.
19. TEMPORARY CROSSINGS WILL STAY IN PLACE FOR NO GREATER THAN ONE YEAR.



TYPICAL PIPELINE INSTALLATION STREAM CROSSING – PUMP BYPASS DETAIL

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ROBERT F. SIMCIK ENGINEER 044845-E 4/6/17

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

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CONSTRUCTION SPREAD 2

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CHECKED BY:	RS

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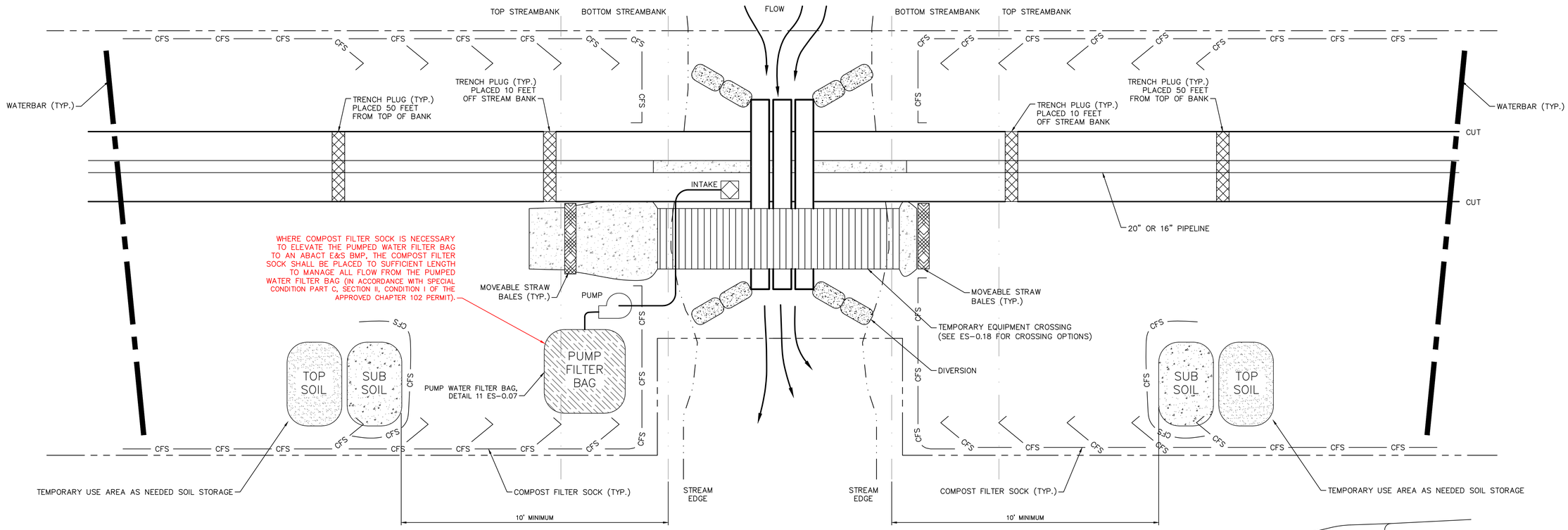
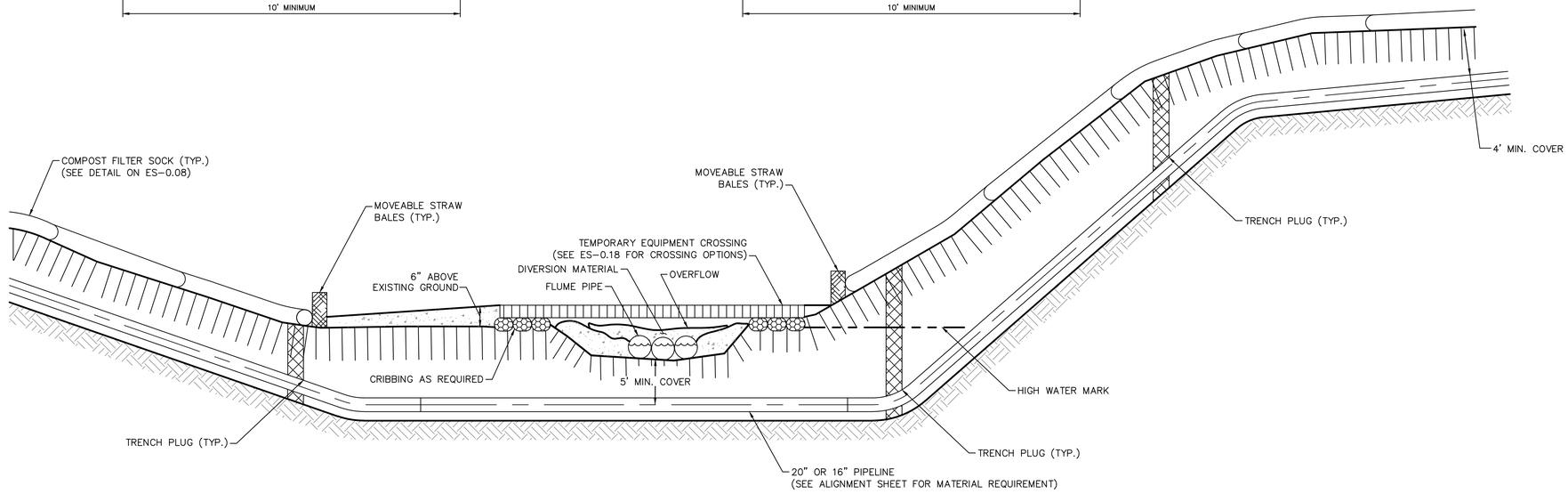
SHEET 0.11 OF 102



NOTES:

1. SEE PLAN SHEETS FOR FLOODWAY AND FLOODPLAIN LOCATIONS AND FOR REFERENCE TO SITE-SPECIFIC STREAM CORRING DRAWINGS.
2. THE FLUME SHOULD BE OF SUFFICIENT SIZE TO CONVEY NORMAL STREAM FLOW OVER THE OPEN TRENCH (MINIMUM SIZE OF 12 INCHES);
3. FLUME PIPE MUST BE ONE CONTINUOUS PIPE LONG ENOUGH TO ACCOUNT FOR THE POSSIBILITY OF THE TRENCH WIDENING UNEXPECTEDLY DURING THE EXCAVATION (DUE TO SLOUGHING);
4. FLUME SHALL BE INSTALLED PRIOR TO TRENCH EXCAVATION AT THAT LOCATION; AND,
5. AN EFFECTIVE SEAL MUST BE CREATED AROUND THE FLUME(S). ONCE IN PLACE, THE FLUMES ARE NOT REMOVED UNTIL THE PIPELINE HAS BEEN INSTALLED AND THE STREAMBED AND BANKS HAVE BEEN RESTORED.
6. WATERBARS ARE TO BE PLACED 50 FEET FROM TOP OF BANK EXCEPT AS NOTED ON SITE SPECIFIC PLAN DRAWINGS.
7. MARK THE TOP OF STREAMBANK WITH HIGH VISIBLE FLAGGING AND POST RESOURCE AND NO REFUELING SIGNS WITHIN 100 FEET OF TOP OF STREAMBANK;
8. HAZARDOUS OR POLLUTANT MATERIAL STORAGE AREAS SHALL BE LOCATED AT LEAST 100 FEET BACK FROM TOP OF STREAMBANK;
9. GRUBBING SHALL NOT TAKE PLACE WITHIN 50 FEET OF TOP OF BANK PRIOR TO STREAM INSTALLATION WITH THE EXCEPTION OF THE TRAVEL LANE UNTIL ALL MATERIALS REQUIRED TO COMPLETE CROSSING ARE ON SITE AND PIPE IS READY FOR INSTALLATION;
10. CONSTRUCT DAMS WITH SAND BAGS, JERSEY BARRIERS OR SIMILAR MATERIAL WITH AN IMPERVIOUS LINER EXTENDED TO THE STREAM BOTTOM AND SECURED WITH SANDBAGS (SEE ES-0.08) MAINTAINING AMBIENT DOWNSTREAM FLOW RATES;
11. NATURAL STREAM BED MATERIAL TO BE STRIPPED AND SEGREGATED FROM SUBSURFACE MATERIAL FOR FINAL STREAMBED RESTORATION. EXCAVATION PORTION OF NATIVE STREAM BEDS COMPRISED OF ROCK, COBBLE, OR GRAVEL ARE TO BE STRIPPED AND SEGREGATED AND USED DURING STREAM RESTORATION.
12. REMOVE ALL CONSTRUCTION MATERIAL AND STRUCTURES FROM THE WATERBODY AFTER CONSTRUCTION;
13. RESTORE STREAM CHANNELS AND BOTTOMS TO THEIR PRECONSTRUCTION CONTOURS OR BETTER, AND STABILIZING THE STREAM CHANNEL PRIOR TO REESTABLISHING FLOW.
14. ALL EXCESS EXCAVATED MATERIAL SHALL BE REMOVED FROM THE STREAM FLOODWAY PRIOR TO PERMANENTLY STABILIZING STREAM BANKS; AND,
15. ALL DISTURBED AREAS WITHIN 50 FEET OF TOP OF BANK AND 100 FEET IN SPECIAL PROTECTION WATERSHEDS SHOULD BE BLANKETED OR MATTED WITHIN 24 HOURS OF INITIAL DISTURBANCE FOR MINOR STREAMS OR 48 HOURS OF INITIAL DISTURBANCE FOR MAJOR STREAMS UNLESS OTHERWISE AUTHORIZED. APPROPRIATE STREAM BANK PROTECTION SHALL BE PROVIDED WITHIN THE CHANNEL.
16. KEEP LIME AND FERTILIZERS OUT OF STREAM.
17. TEMPORARY CROSSINGS WILL STAY IN PLACE FOR NO GREATER THAN ONE YEAR.



TYPICAL PIPELINE INSTALLATION STREAM CROSSING – DRY FLUME DETAIL

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SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 2

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
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DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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SHEET 0.12 OF 102

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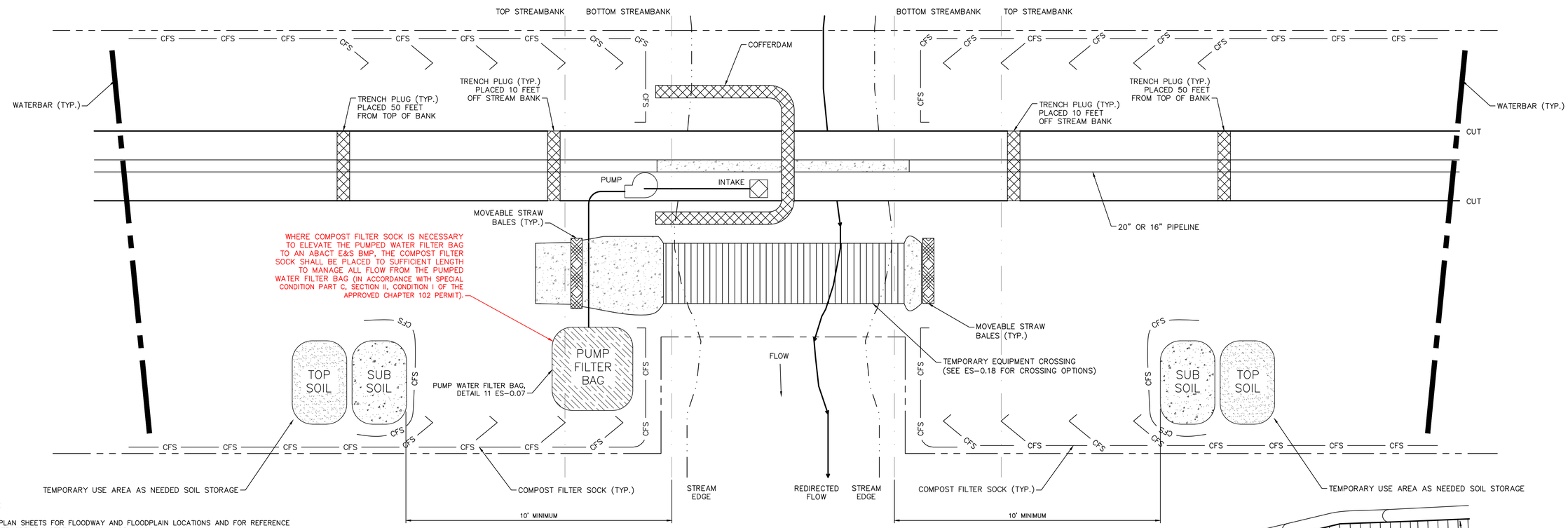
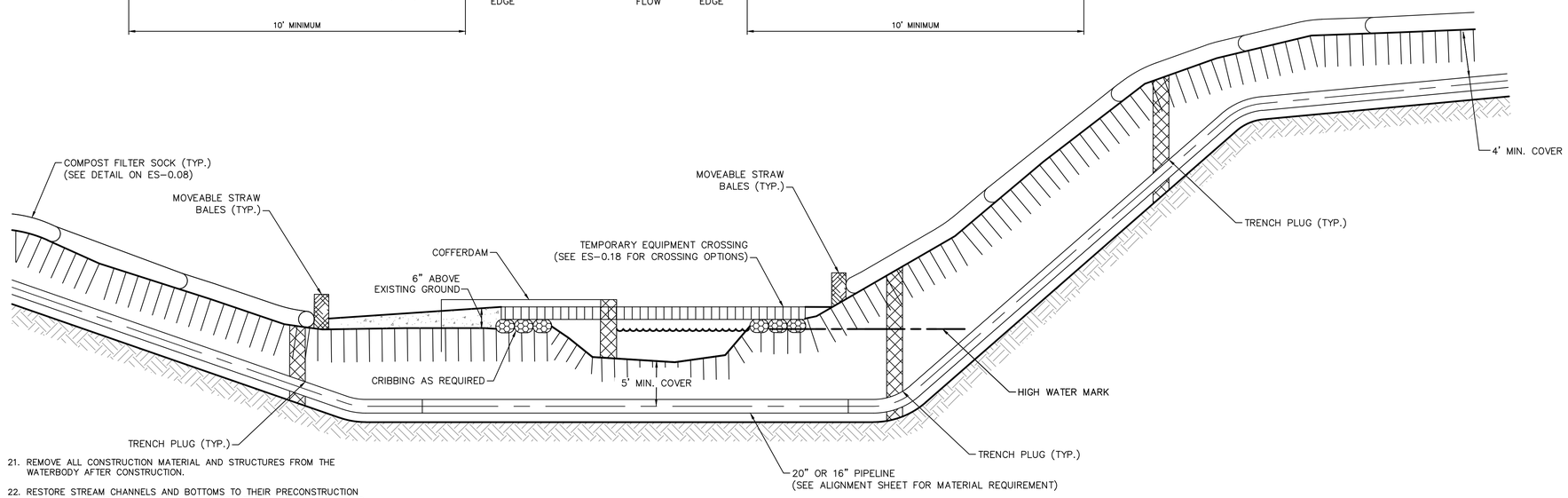


NOTES:

1. SEE PLAN SHEETS FOR FLOODWAY AND FLOODPLAIN LOCATIONS AND FOR REFERENCE TO SITE-SPECIRIC STREAM CROSSING DRAWINGS.
2. MAINTAIN ADEQUATE IN-STREAM PASSAGE OF WATER (MIN 1/3 THE DISTANCE OF THE CROSSING) AT ALL TIMES TO CONVEY NORMAL STREAM FLOW WITHOUT CREATING ACCELERATED BANK EROSION;
3. PREPARE STREAM BED FOR CONSTRUCTION OF COFFERDAM BY REMOVING LARGE BOULDERS AND OTHER OBJECTS THAT MAY PREVENT AN ADEQUATE DAM SEAL;
4. DRAW DOWN WATER WITHIN COFFERDAM STRUCTURE AND PUMP INTO WATERBODY;
5. PREPARE SMALL TRENCH OR BERM AROUND INTERIOR OF COFFERDAM AND LOCATE SUMP AS DEPICTED FOR CONTINUOUS PUMPING OF ANY ADDITIONAL WATER INFILTRATION INTO COFFERDAM STRUCTURE SPACE AND TRENCH. CONTINUED PUMPING DURING CONSTRUCTION ACTIVITIES SHALL BE DIRECTED TO A DEWATERING STRUCTURE.
6. INSTALL TIMBER MATS ALONG CONSTRUCTION TRAVEL LANE, IF REQUIRED.
7. EXCAVATE THE PIPELINE TRENCH AS NECESSARY,
8. DEWATER TRENCH TO ENSURE THAT IT IS SUITABLE FOR WORKER ENTRANCE TO COMPLETE A TIE-IN WELD. SHOULD THE TRENCH FAIL AND PROVE TO BE UNSAFE FOR WORKERS, DISCUSS OPTIONS WITH AGENCIES.
9. INSTALL CROSSING PIPE AND SANDBAGS OR PREFABRICATED CONCRETE WALL ADJACENT TO THE WELD CAP WHICH WILL FORM A BARRIER TO PREVENT MOVEMENT OF RE-INSTALLED TRENCH SPOIL WHILE THE EAST SIDE OF THE CROSSING IS CONSTRUCTED.
10. RETURN TRENCH SPOIL TO TRENCH AND COVER PIPELINE. RESTORE RIVER BED WITH SEGREGATED RIVER BED SEDIMENT AND ROCK MATERIAL.
11. PUMP RIVER WATER INTO COFFERDAM STRUCTURE AND ALLOW ALL SEDIMENTATION TO SETTLE.
12. DISASSEMBLE COFFERDAM STRUCTURE;
13. RESTORE RIVER BANK PRECONSTRUCTION CONTOURS TO A STABLE ANGLE OF REPOSE.
14. REPEAT STEPS ON OPPOSITE SIDE OF WATERBODY.
15. WATERBARS ARE TO BE PLACED 50 FEET FROM TOP OF BANK EXCEPT AS NOTED ON SITE SPECIFIC PLAN DRAWINGS.
16. MARK THE TOP OF STREAMBANK WITH HIGH VISIBLE FLAGGING AND POST RESOURCE AND NO REFUELING SIGNS WITHIN 100 FEET OF TOP OF STREAMBANK;
17. HAZARDOUS OR POLLUTANT MATERIAL STORAGE AREAS SHALL BE LOCATED AT LEAST 100 FEET BACK FROM TOP OF STREAMBANK;
18. GRUBBING SHALL NOT TAKE PLACE WITHIN 50 FEET OF TOP OF BANK PRIOR TO STREAM INSTALLATION WITH THE EXCEPTION OF THE TRAVEL LANE UNTIL ALL MATERIALS REQUIRED TO COMPLETE CROSSING ARE ON SITE AND PIPE IS READY FOR INSTALLATION;
19. CONSTRUCT DAMS WITH SAND BAGS, JERSEY BARRIERS OR SIMILAR MATERIAL WITH AN IMPERVIOUS LINER EXTENDED TO THE STREAM BOTTOM AND SECURED WITH SANDBAGS (SEE ES-0.08) MAINTAINING AMBIENT DOWNSTREAM FLOW RATES;
20. NATURAL STREAM BED MATERIAL TO BE STRIPPED AND SEGREGATED FROM SUBSURFACE MATERIAL FOR FINAL STREAMBED RESTORATION. EXCAVATION PORTION OF NATIVE STREAM BEDS COMPRISED OF ROCK, COBBLE, OR GRAVEL ARE TO BE STRIPPED AND SEGREGATED AND USED DURING STREAM RESTORATION.
21. REMOVE ALL CONSTRUCTION MATERIAL AND STRUCTURES FROM THE WATERBODY AFTER CONSTRUCTION.
22. RESTORE STREAM CHANNELS AND BOTTOMS TO THEIR PRECONSTRUCTION CONTOURS OR BETTER, AND STABILIZING THE STREAM CHANNEL PRIOR TO REESTABLISHING FLOW.
23. ALL EXCESS EXCAVATED MATERIAL SHALL BE REMOVED FROM THE STREAM FLOODWAY PRIOR TO PERMANENTLY STABILIZING STREAM BANKS; AND,
24. ALL DISTURBED AREAS WITHIN 50 FEET OF TOP OF BANK AND 100 FEET IN SPECIAL PROTECTION WATERSHEDS SHOULD BE BLANKETED OR MATTED WITHIN 24 HOURS OF INITIAL DISTURBANCE FOR MINOR STREAMS OR 48 HOURS OF INITIAL DISTURBANCE FOR MAJOR STREAMS UNLESS OTHERWISE AUTHORIZED. APPROPRIATE STREAM BANK PROTECTION SHALL BE PROVIDED WITHIN THE CHANNEL.
25. KEEP LIME AND FERTILIZER OUT OF STREAM.
26. TEMPORARY CROSSINGS WILL STAY IN PLACE FOR NO GREATER THAN ONE YEAR.



TYPICAL PIPELINE INSTALLATION STREAM CROSSING – COFFERDAM DETAIL

NOT TO SCALE

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ROBERT F. SIMCIK 4/17/17

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 2

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
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NOTES & DETAILS

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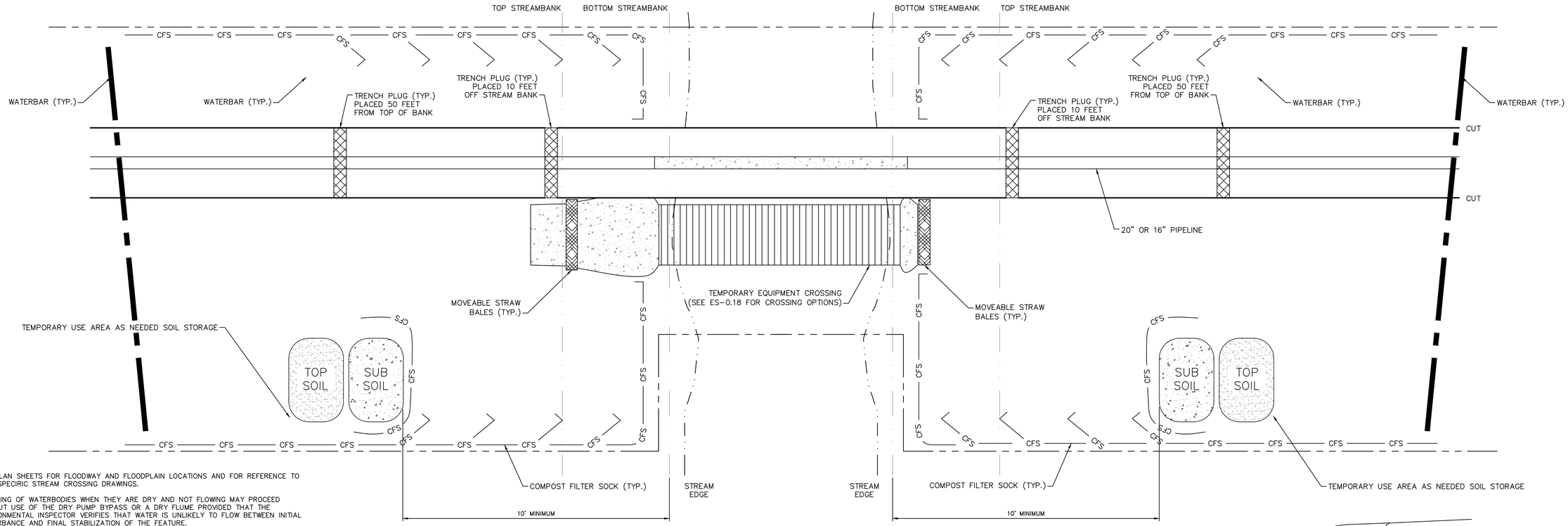

NOTES:

1. SEE PLAN SHEETS FOR FLOODWAY AND FLOODPLAIN LOCATIONS AND FOR REFERENCE TO SITE-SPECIRIC STREAM CROSSING DRAWINGS.
2. CROSSING OF WATERBODIES WHEN THEY ARE DRY AND NOT FLOWING MAY PROCEED WITHOUT USE OF THE DRY PUMP BYPASS OR A DRY FLUME PROVIDED THAT THE ENVIRONMENTAL INSPECTOR VERIFIES THAT WATER IS UNLIKELY TO FLOW BETWEEN INITIAL DISTURBANCE AND FINAL STABILIZATION OF THE FEATURE.
3. WORK ON THE CROSSING MUST BE CONTINUOUS AND THE CROSSING MUST BE ATTENDED AT ALL TIMES.
4. IN THE EVENT PERCEPTIBLE FLOW IS ANTICIPATED OR IF THE CREW IS NOT IN ATTENDANCE AT THE CROSSING ALL OF THE REQUIREMENTS FOR A PUMP BYPASS OR DRY FLUME MUST BE MET.
5. EQUIPMENT AND SUPPLIES TO IMPLEMENT DRY PUMP BYPASS OR DRY FLUME CROSSING WILL BE ON-SITE IF STREAM-FLOW OCCURS DURING IMPLEMENTATION.
6. OPEN CUT CROSSING METHOD IS ONLY PERMITTED DURING TIMES OF NO STREAM FLOW OR RUNOFF EXISTS. DO NOT EXCAVATE TRENCH IN STREAM UNTIL THE PIPE SEGMENT IS ASSEMBLED AND READY FOR LOWERING IN. TRENCH DEWATERING SHALL USE A FILTER BAG WHEREVER FEASIBLE, TO AVOID UNCONTROLLED DOWNSTREAM SEDIMENTATION. LIMIT LENGTH OF TIME TO COMPLETE AND RESTORE STREAM CROSSING TO THE MINIMUM PRACTICABLE, E.G., LESS THAN 24 HOURS. IF FLOW AND SUBSTRATE CONDITIONS ARE SUCH THAT USE OF THIS CROSSING METHOD WOULD RESULT IN SIGNIFICANT UNCONTROLLED SEDIMENT TRANSPORT TO DOWNSTREAM AREAS, CONSIDER USING A DRY PUMP BYPASS OR DRY FLUME METHOD INSTEAD OF OPEN CUT.
7. WATERBARS ARE TO BE PLACED 50 FEET FROM TOP OF BANK EXCEPT AS NOTED ON SITE SPECIFIC PLAN DRAWINGS.
8. MARK THE TOP OF STREAMBANK WITH HIGH VISIBLE FLAGGING AND POST RESOURCE AND NO REFUELING SIGNS WITHIN 100 FEET OF TOP OF STREAMBANK;
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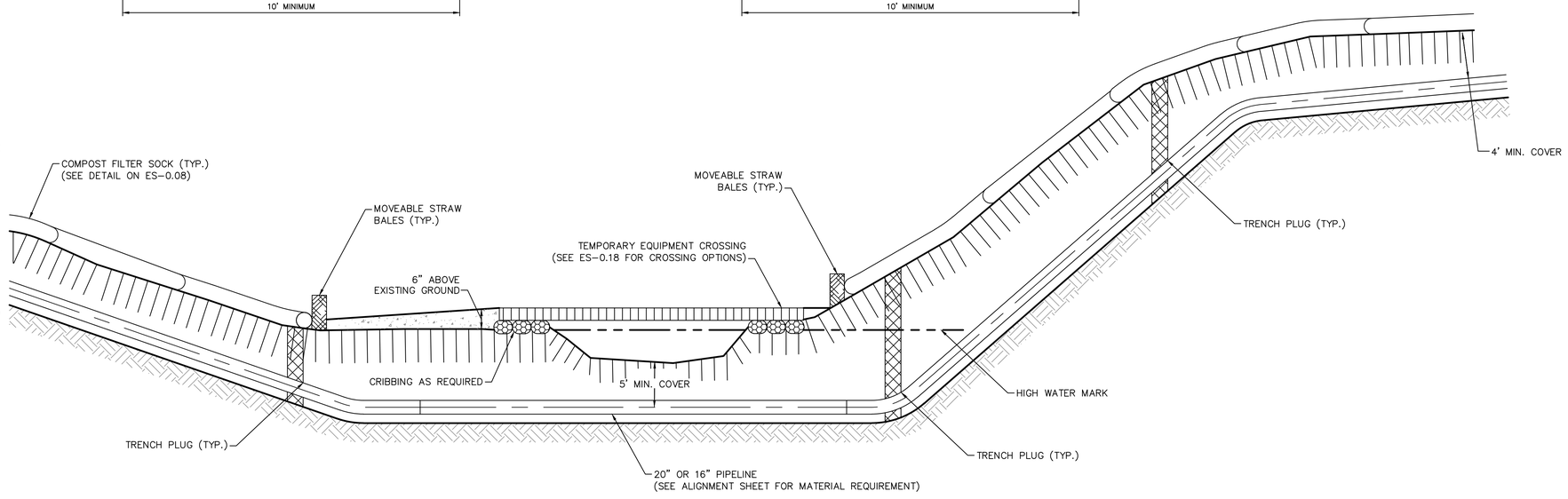

TYPICAL PIPELINE INSTALLATION STREAM CROSSING – DRY OPEN CUT DETAIL

NOT TO SCALE

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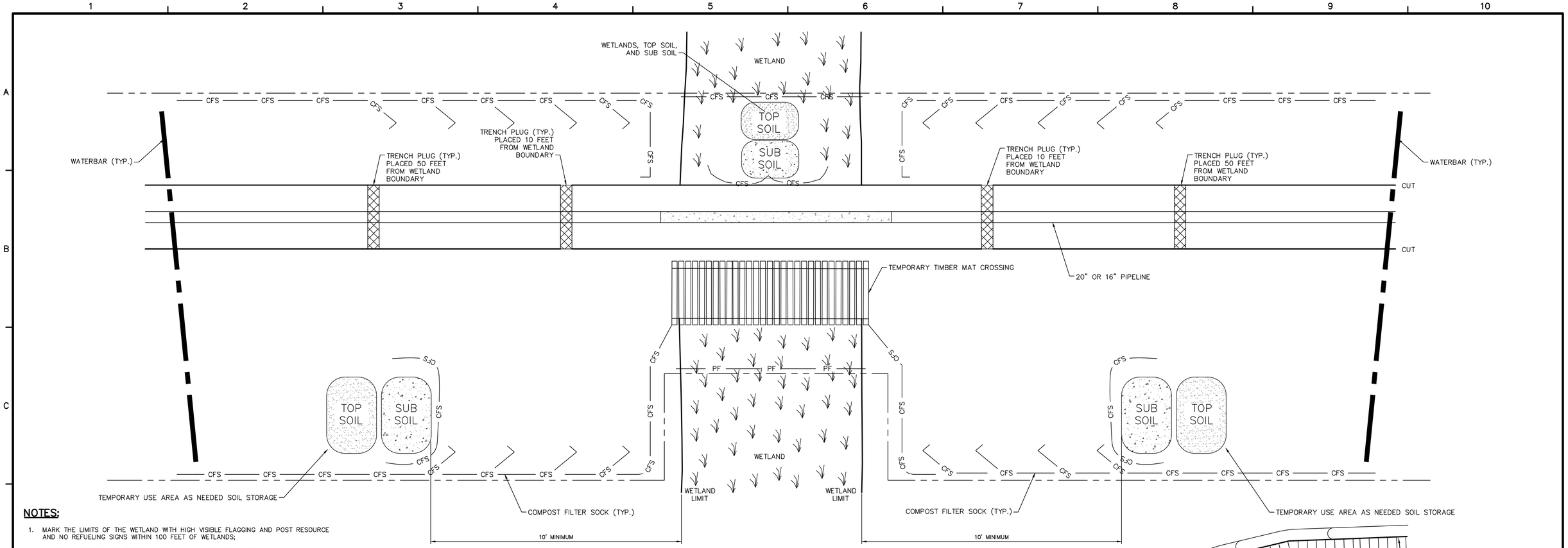
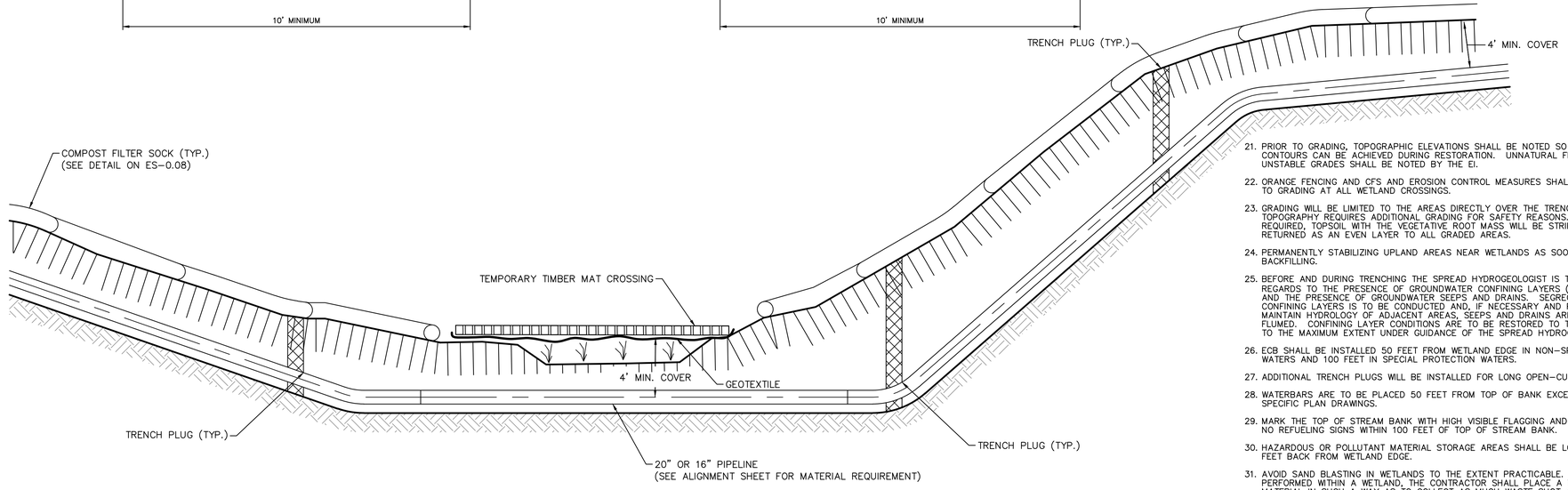


NOTES:

1. MARK THE LIMITS OF THE WETLAND WITH HIGH VISIBLE FLAGGING AND POST RESOURCE AND NO REFUELING SIGNS WITHIN 100 FEET OF WETLANDS;
2. ORANGE SAFETY FENCE BETWEEN LOD AND ADJACENT WETLANDS.
3. STABILIZE WETLAND TRAVEL LANE APPROACH.
4. SEE SITE-SPECIFIC DETAILS WHEN NOTED ON E&S PLAN SHEETS.
5. HAZARDOUS OR POLLUTANT MATERIAL STORAGE AREAS SHALL BE LOCATED AT LEAST 100 FEET BACK FROM THE WETLAND;
6. USE NO MORE THAN TWO LAYERS OF TIMBER RIPRAP TO STABILIZE THE CONSTRUCTION RIGHT-OF-WAY;
7. CUT VEGETATION OFF AT GROUND LEVEL LEAVING EXISTING ROOT SYSTEMS IN PLACE AND REMOVE IT FROM THE WETLAND FOR DISPOSAL;
8. LIMIT PULLING OF TREE STUMPS AND GRADING ACTIVITIES TO DIRECTLY OVER THE TRENCH LINE UNLESS SAFETY CONCERNS REQUIRE THE REMOVAL OF STUMPS FROM THE WORKING-SIDE OF THE CONSTRUCTION ROW;
9. SEGREGATE A MAXIMUM OF 12 INCHES OF TOPSOIL FROM THE AREA DISTURBED BY TRENCHING IN UNSATURATED WETLANDS.
10. INSTALL TEMPORARY TIMBER MATS ALONG TRAVEL LANE. EQUIPMENT WILL WORK FROM MATS;
11. ASSEMBLE PIPE IN UPLAND AREAS UNLESS WETLAND IS DRY ENOUGH TO ADEQUATELY SUPPORT SKIDS AND PIPE;
12. IF STREAMS ARE PRESENT IMPLEMENT DRY CROSSING METHODS.
13. RESTORATION ACTIVITIES WITHIN WETLANDS (SEE TYP WETLAND RESTORATION) SHALL BEGIN IMMEDIATELY AFTER BACKFILLING, WEATHER PERMITTING;
14. NO SOIL AMENDMENTS SUCH AS AGRICULTURAL LIME OR FERTILIZER WILL BE USED WITHIN THE WETLAND AREAS.
15. RESTORE WETLANDS TO THE ORIGINAL CONTOURS AND SURFACE FLOW.
16. BULLDOZERS WILL NOT BE USED FOR CLEARING. TREES AND BRUSH WILL BE CUT BY HAND AT GROUND LEVEL BY CHAIN SAWS OR LOW GROUND PRESSURE EQUIPMENT, OR WITH EQUIPMENT THAT DOES NOT CAUSE EXCESSIVE RUTTING OF TOPSOIL OR WITH EQUIPMENT SUPPORTED BY MATS (TIMBER MATS, HDPE COMPOSITE OR SIMILAR).
17. THE MINIMUM CLEARING NECESSARY TO SAFELY CONSTRUCT THE PIPELINE WILL BE DONE. MATS OR PADS MAY BE PLACED OVER TOP OF EXISTING VEGETATION, INCLUDING SHRUBS, WHERE POSSIBLE.
18. STUMPS WILL BE LEFT IN PLACE, EXCEPT ON THE TRENCH LINE OR UNLESS THE REMOVAL IS NECESSARY TO ENSURE WORKER SAFETY. STUMPS MAY BE GROUND TO A SUITABLE HEIGHT FOR SAFETY REASONS.
19. ALL CUT TIMBER AND BRUSH WILL BE REMOVED FROM WETLANDS. GRINDINGS WILL BE REMOVED AS MUCH AS PRACTICAL. DEBRIS AND STUMPS WILL NOT BE BURIED.
20. CONTRACTOR SHALL BE REQUIRED TO INSTALL COMPLETED MAT TRAVEL LANE FOR PIPELINE CONSTRUCTION DURING THE TIME CONTRACTOR'S CLEARING CREW 9DOES NOT MEAN TREE FELLING) IS PERFORMING ITS WORK.



TYPICAL PIPELINE INSTALLATION WETLAND CROSSING DETAIL

NOT TO SCALE

21. PRIOR TO GRADING, TOPOGRAPHIC ELEVATIONS SHALL BE NOTED SO THAT ORIGINAL CONTOURS CAN BE ACHIEVED DURING RESTORATION. UNNATURAL FEATURES AND UNSTABLE GRADES SHALL BE NOTED BY THE EI.
22. ORANGE FENCING AND CFS AND EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO GRADING AT ALL WETLAND CROSSINGS.
23. GRADING WILL BE LIMITED TO THE AREAS DIRECTLY OVER THE TRENCHLINE, EXCEPT WHERE TOPOGRAPHY REQUIRES ADDITIONAL GRADING FOR SAFETY REASONS. WHEN GRADING IS REQUIRED, TOPSOIL WITH THE VEGETATIVE ROOT MASS WILL BE STRIPPED, SEGREGATED AND RETURNED AS AN EVEN LAYER TO ALL GRADED AREAS.
24. PERMANENTLY STABILIZING UPLAND AREAS NEAR WETLANDS AS SOON AS POSSIBLE AFTER BACKFILLING.
25. BEFORE AND DURING TRENCHING THE SPREAD HYDROGEOLOGIST IS TO BE CONSULTED IN REGARDS TO THE PRESENCE OF GROUNDWATER CONFINING LAYERS (I.E., CLAY, FRAGIPAN) AND THE PRESENCE OF GROUNDWATER SEEPS AND DRAINS. SEGREGATION OF THE CONFINING LAYERS IS TO BE CONDUCTED AND, IF NECESSARY AND PRACTICABLE TO MAINTAIN HYDROLOGY OF ADJACENT AREAS, SEEPS AND DRAINS ARE TO BE TEMPORARILY FLUMED. CONFINING LAYER CONDITIONS ARE TO BE RESTORED TO THE ORIGINAL CONDITION TO THE MAXIMUM EXTENT UNDER GUIDANCE OF THE SPREAD HYDROGEOLOGIST.
26. ECB SHALL BE INSTALLED 50 FEET FROM WETLAND EDGE IN NON-SPECIAL PROTECTION WATERS AND 100 FEET IN SPECIAL PROTECTION WATERS.
27. ADDITIONAL TRENCH PLUGS WILL BE INSTALLED FOR LONG OPEN-CUT WETLAND CROSSINGS.
28. WATERBARS ARE TO BE PLACED 50 FEET FROM TOP OF BANK EXCEPT AS NOTED ON SITE SPECIFIC PLAN DRAWINGS.
29. MARK THE TOP OF STREAM BANK WITH HIGH VISIBLE FLAGGING AND POST RESOURCE AND NO REFUELING SIGNS WITHIN 100 FEET OF TOP OF STREAM BANK.
30. HAZARDOUS OR POLLUTANT MATERIAL STORAGE AREAS SHALL BE LOCATED AT LEAST 100 FEET BACK FROM WETLAND EDGE.
31. AVOID SAND BLASTING IN WETLANDS TO THE EXTENT PRACTICABLE. IF SANDBLASTING IS PERFORMED WITHIN A WETLAND, THE CONTRACTOR SHALL PLACE A TARP OR SUITABLE MATERIAL IN SUCH A WAY AS TO COLLECT AS MUCH WASTE SHOT AS POSSIBLE AND DISPOSE OF THE COLLECTED WASTE. THE CONTRACTOR SHALL CLEAN UP ALL VISIBLE DEPOSITS OF WASTES AND DISPOSE OF THE WASTE AT AN APPROVED DISPOSAL FACILITY.
32. ANY EXCESS FILL MATERIAL MUST BE REMOVED AND NOT SPREAD WITHIN THE WETLAND.
33. PLACE A MINIMUM OF ONE (1) TRENCH PLUG AT A MAXIMUM SPACING OF 100 FEET BETWEEN TRENCH PLUGS WITHIN A WETLAND. WETLAND CROSSINGS LESS THAN FIFTY (50) FEET DO NOT REQUIRE AN INTERNAL TRENCH PLUG (IN ACCORDANCE WITH SPECIAL CONDITIONS UNDER SECTION "MISCELLANEOUS", CONDITION fff OF THE APPROVED CHAPTER 105 PERMIT).

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REVISIONS

NO.	BY	DATE	REMARKS
1	RS	3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS
2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ROBERT F. SIMCIK 4/18/17

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT CONSTRUCTION SPREAD 2

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

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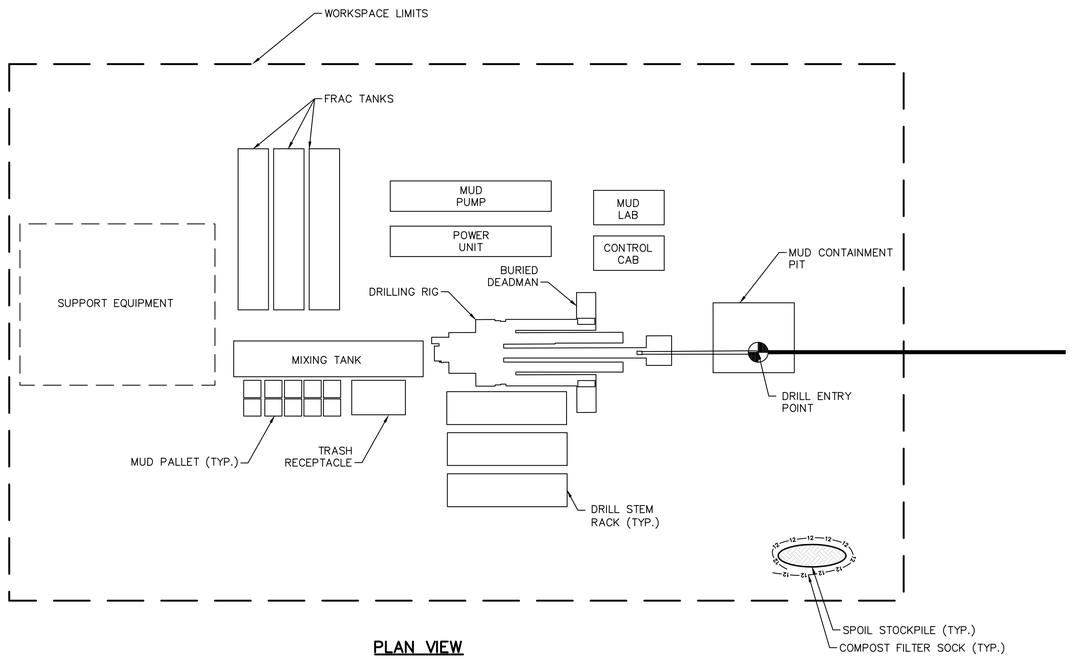
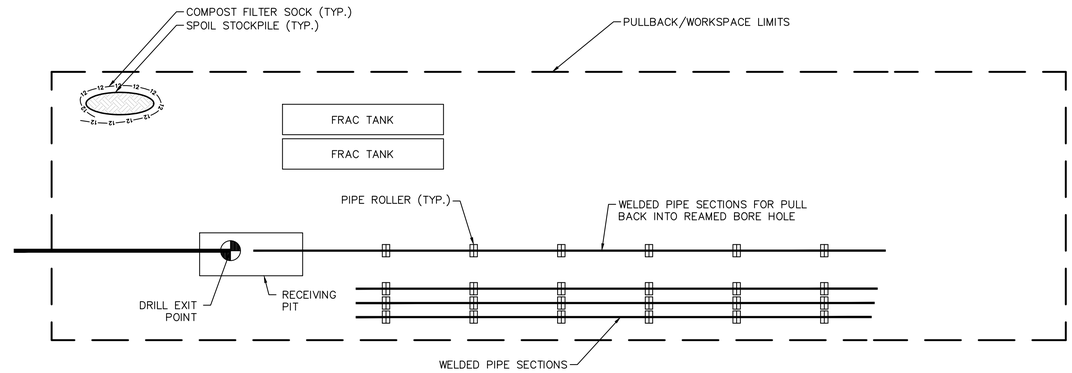
R:_Marcellus Shale Projects\Sunoco\5958 – Penn Pipeline Project\5 – Cambria\E&S\5958ES000.15.dwg PIT NICHOLE.NAJESKI 4/17/2017 12:50:41 PM



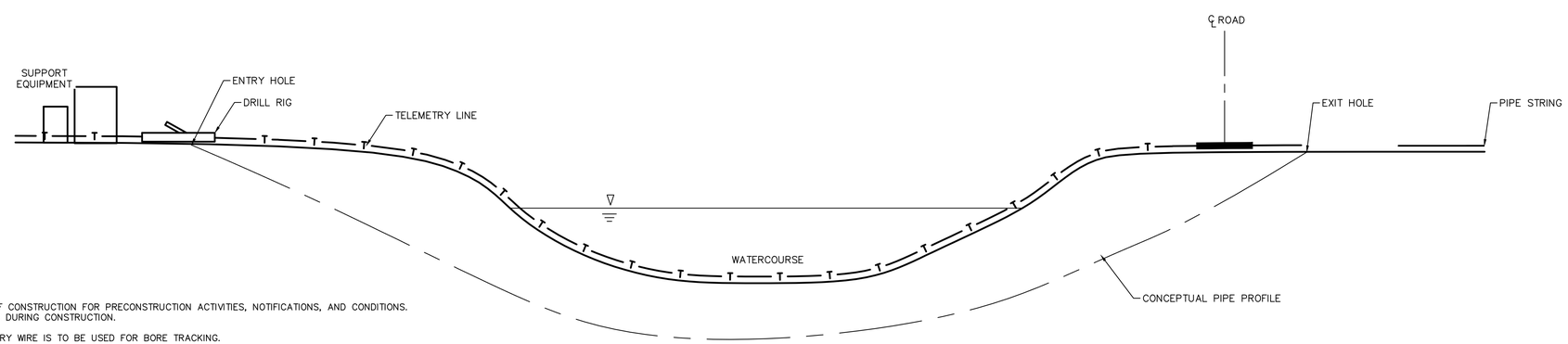
PLAN VIEW

ENTRY SIDE LAYOUT
NOT TO SCALE



PLAN VIEW

EXIT SIDE LAYOUT
NOT TO SCALE



PROFILE VIEW

TYPICAL HDD BORE LAYOUT
NOT TO SCALE

NOTES:

1. REVIEW INADVERTENT RETURN AND PROJECT PPC PLANS AHEAD OF CONSTRUCTION FOR PRECONSTRUCTION ACTIVITIES, NOTIFICATIONS, AND CONDITIONS. MAKE ALL APPROPRIATE NOTIFICATIONS. IMPLEMENT THESE PLANS DURING CONSTRUCTION.
2. REVIEW HDD FOR WRITTEN ATON PLAN AND IMPLEMENT IF TELEMETRY WIRE IS TO BE USED FOR BORE TRACKING.
3. SEE SITE PLANS FOR E&S CONTROLS.
4. LAYOUT WILL VARY ACCORDING TO AVAILABLE WORK SPACE AND FIELD CONDITIONS.
5. GRADE AND TOPSOIL WORKSPACES WHERE NECESSARY TO MAKE WORKSPACE AVAILABLE FOR PARKING, STAGING, AND OTHER USES WHEN NOT BEING USED FOR BORING.
6. HDD BENEATH WETLAND AND WATERBODIES WHERE INDICATED ON E&S PLAN SHEETS. SEE SITE-SPECIFIC DRAWINGS IF NOTED TO BE AVAILABLE.
7. INSTALL TEMPORARY TIMBER WETLAND MATS IF WORKSPACES ARE IN WETLANDS.
8. TEMPORARY WATERBAR TO BE INSTALLED AFTER CLEARING AND PRIOR TO TEMPORARY GRADING IF NEEDED FOR HDD INSTALLATION.
9. PERMANENT WATERBAR TO BE INSTALLED AFTER CLEARING AND PRIOR TO TEMPORARY GRADING IF NEEDED FOR HDD INSTALLATION AND REINSTALLED ONCE FINAL GRADING ESTABLISHED.
10. TELEMETRY WIRE WILL BE STRUNG FROM ENTRY TO EXIT POINTS.
11. INSTALL COMPOST FILTER SOCKS/SILT FENCE ALONG THE DOWN GRADIENT PERIMETERS OF THE HDD BORE PIT.
12. EXCAVATION OF THE DRILL ENTRY AND EXIT LOCATIONS WILL BE NECESSARY TO CONTAIN DRILLING FLUIDS DURING ALL PHASES OF INSTALLATION. THESE FLUIDS AND CUTTINGS MUST BE DISPOSED OF IN AN APPROVED MANNER PERIODICALLY OR AT THE COMPLETE CROSSING INSTALLATION.
13. THE CROSSING LENGTH AND CROSS SECTIONAL GEOMETRY IS DEPENDENT UPON THE PIPELINE DESIGN PARAMETERS, THE OBSTACLE CROSSED, AND THE SUBSURFACE CONDITIONS.

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2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
ROBERT F. SIMCIK
ENGINEER
075046-E
5/25/17

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 2

1–20" & 1–16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
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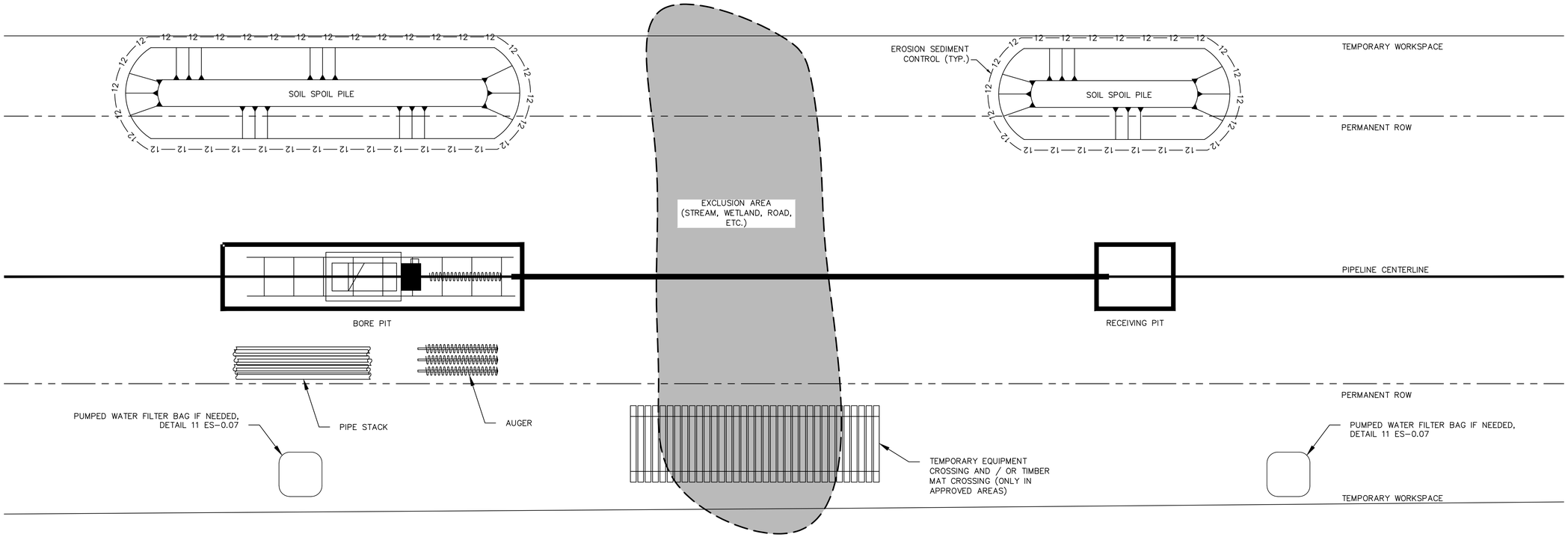
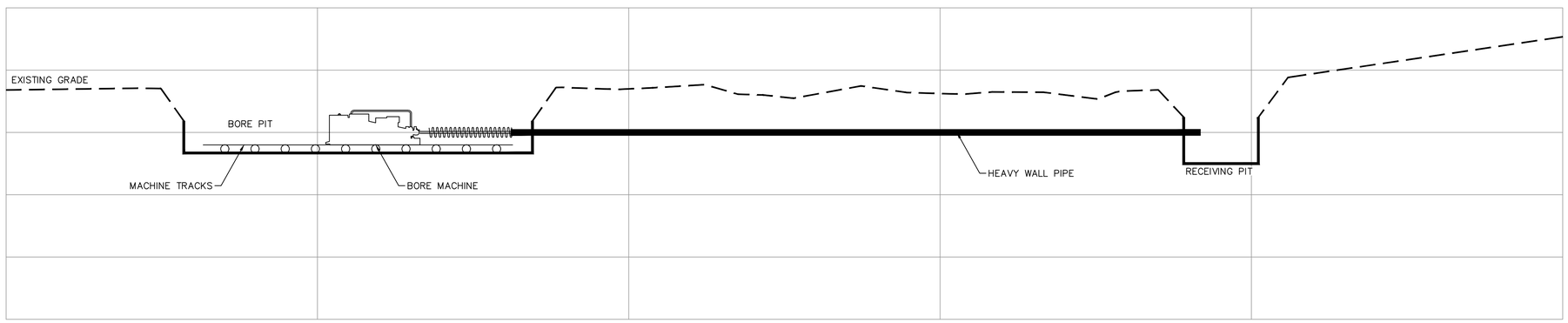


PLAN VIEW



PROFILE VIEW

TYPICAL CONVENTIONAL BORE CROSSING LAYOUT

NOT TO SCALE

NOTES:

1. LAYOUT WILL VARY ACCORDING TO AVAILABLE WORK SPACE AND FIELD CONDITIONS.
2. WORKSPACE AVAILABLE FOR PARKING, STAGING, AND OTHER USES WHEN NOT BEING USED FOR BORING.
2. INSTALL COMPOST FILTER SOCKS/SILT FENCE ALONG THE DOWN GRADIENT PERIMETERS OF THE BORE PITS. SEE SITE PLANS FOR E&S CONTROLS.
3. EXCAVATE BORE PITS IN ACCORDANCE WITH SITE-SPECIFIC PLANS AND SEGREGATE TOP SOIL IN ACCORDANCE WITH STANDARD E&SC PLAN NOTES. POSITION BORE PITS A MINIMUM OF 50 FEET FROM THE NEAREST TOP OF BANK, WHERE TECHNICALLY FEASIBLE.
4. THE CROSSING LENGTH IS DEPENDENT UPON THE OBSTACLE TO BE CROSSED, AND THE SURFACE AND SUBSURFACE CONDITIONS.

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COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ROBERT F. SIMCIK 075848-E 2/6/17

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 2

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
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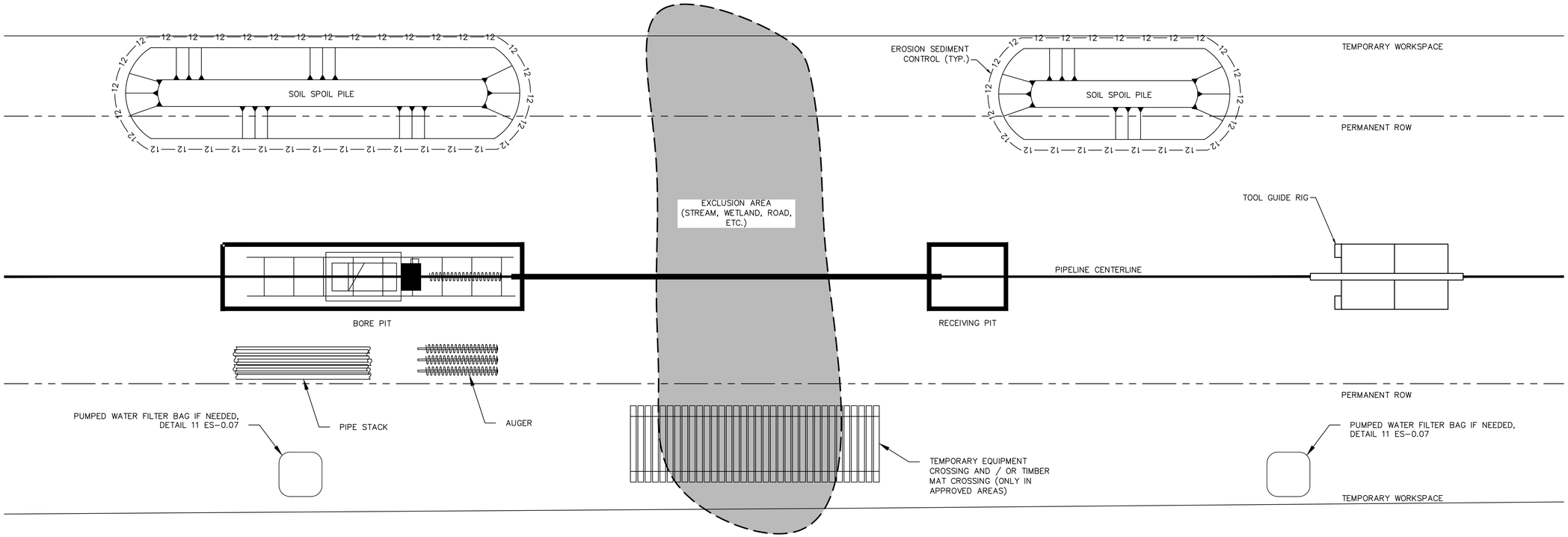
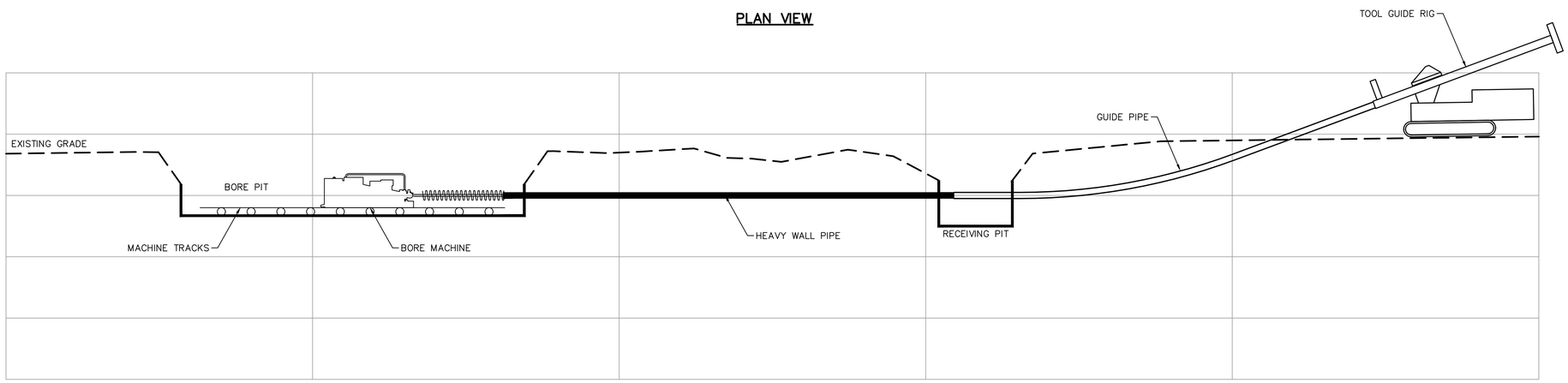


PLAN VIEW



PROFILE VIEW

TYPICAL GUIDED AUGER BORE CROSSING LAYOUT

NOT TO SCALE

NOTES:

1. LAYOUT WILL VARY ACCORDING TO AVAILABLE WORK SPACE AND FIELD CONDITIONS.
2. WORKSPACE AVAILABLE FOR PARKING, STAGING, AND OTHER USES WHEN NOT BEING USED FOR BORING.
2. INSTALL COMPOST FILTER SOCKS/SILT FENCE ALONG THE DOWN GRADIENT PERIMETERS OF THE BORE PITS. SEE SITE PLANS FOR E&S CONTROLS.
3. EXCAVATE BORE PITS IN ACCORDANCE WITH SITE-SPECIFIC PLANS AND SEGREGATE TOP SOIL IN ACCORDANCE WITH STANDARD E&SC PLAN NOTES. POSITION BORE PITS A MINIMUM OF 50 FEET FROM THE NEAREST TOP OF BANK, WHERE TECHNICALLY FEASIBLE.
4. THE CROSSING LENGTH IS DEPENDENT UPON THE OBSTACLE TO BE CROSSED, AND THE SURFACE AND SUBSURFACE CONDITIONS.

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2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD
3	RS	4/17/17	ADDITIONAL DETAIL ADDED FOR GUIDED BORE

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ROBERT F. SIMCIK 075442E-L 4/18/17

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 2

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
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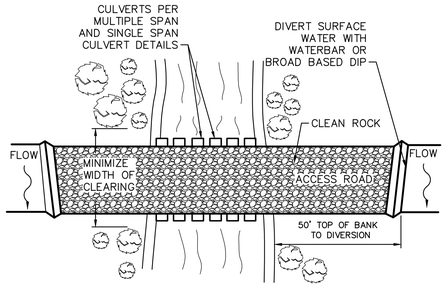


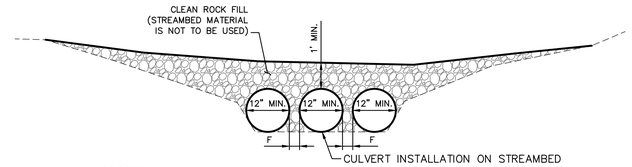
PLAN VIEW

NOTES:

1. WATERBARS AND BROAD-BASED DIPS SHALL DISCHARGE TO 18" CFS OR APPROVED SEDIMENT REMOVAL FACILITY.
2. CLEAN ROCK SHALL CONFORM TO CHAPTER 105 PERMITTING REQUIREMENTS.
3. FOLLOW PERMIT CONDITIONS REGARDING REMOVAL OF CROSSING.
4. ALTERNATIVELY, TIMBER MATS MAY BE USED TO FORM THE TRAVEL SURFACE.
5. PROVIDE 50' STABILIZED ACCESS TO CROSSING ON BOTH SIDES OF STREAM CHANNEL (SEE PLAN VIEW). THE STABILIZED APPROACH MAY CONSIST OF GRAVEL (AASHTO #1 OR EQUAL) OR TIMBER MATS.
6. PIPES SHALL EXTEND BEYOND THE TOE OF THE CROSSING SUPPORT.
7. RUNOFF FROM THE ROADWAY SHALL BE DIVERTED OFF THE ROADWAY AND INTO A SEDIMENT REMOVAL BMP BEFORE IT REACHES THE ROCK APPROACH TO THE CROSSING.
8. FOLLOW TROUT STREAM RESTRICTIONS SHOWN ON PLAN SHEETS.

TEMPORARY CULVERT STREAM CROSSING

NOT TO SCALE

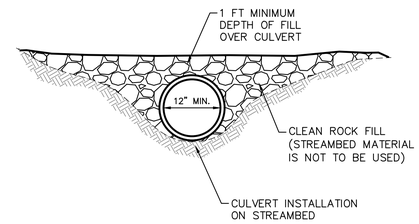


NOTE:

1. MULTIPLE PIPES AND MULTIPLE SPAN BRIDGES AND CULVERTS WHICH MAY TEND TO COLLECT DEBRIS, CONTRIBUTE TO THE FORMATION OF ICE JAMS AND INCREASE HEAD LOSSES SHALL BE AVOIDED TO THE MAXIMUM EXTENT PRACTICABLE. CROSSINGS OF LESS THAN 15 FEET SHALL BE BY ONE SPAN, EXCEPT WHERE CONDITIONS MAKE IT IMPRACTICAL TO AFFECT THE CROSSING WITHOUT MULTIPLE SPANS (SECTION 105.162).
2. REFER TO PADEP E&S MANUAL PAGES 39 AND 40 FOR DETAILS #3-13 (SINGLE SPAN CULVERT) AND #3-14 (MULTIPLE SPAN OUTLET) FOR ADDITIONAL INFORMATION.

MULTIPLE SPAN CULVERT

NOT TO SCALE



CROSS-SECTION VIEW

SINGLE SPAN CULVERT

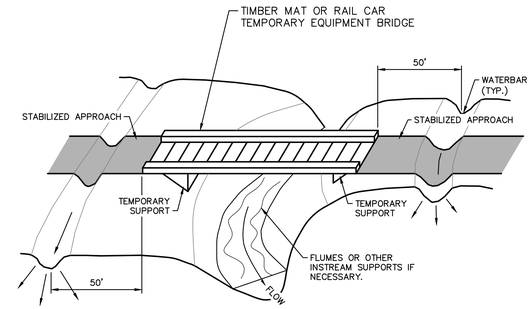
NOT TO SCALE

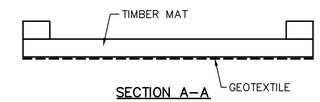
MAINTENANCE OF TEMPORARY EQUIPMENT CROSSING:

1. TEMPORARY STREAM CROSSING SHALL BE INSPECTED ON A DAILY BASIS.
2. DAMAGED CROSSINGS SHALL BE REPAIRED WITHIN 24 HOURS OF THE INSPECTION AND BEFORE ANY SUBSEQUENT USE.
3. SEDIMENT DEPOSITS ON THE CROSSING OR ITS APPROACHES SHALL BE REMOVED REGULARLY AND PLACED IN SOIL STOCKPILES.
4. FLOW THROUGH SHALL BE INSPECTED DAILY AND IMPEDANCES REMOVED WITHIN 24 HOURS.
5. AS SOON AS TEMPORARY CROSSING IS NO LONGER NEEDED, IT SHALL BE REMOVED. ALL MATERIALS SHALL BE DISPOSED OF PROPERLY AND AREAS STABILIZED. TEMPORARY EQUIPMENT CROSSINGS SHALL BE IN PLACE NO LONGER THAN 1 YEAR.

TEMPORARY EQUIPMENT CROSSING DETAILS (15 / 0.18)

NOT TO SCALE





SECTION A-A

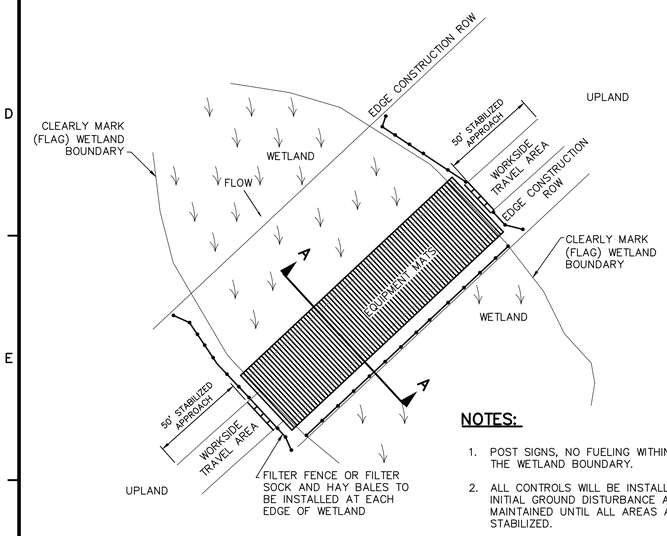
NOT TO SCALE

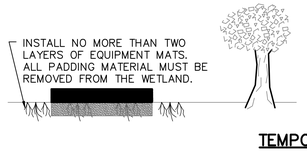
NOTES:

1. POST SIGNS; NO REFUELING WITHIN 100 FEET OF A STREAM.
2. APPROACHES TO CROSSINGS ARE NOT TO EXCEED 6" ABOVE ORIGINAL GRADE.
3. TIMBER MAT SPANS WITHOUT CENTER SUPPORT ARE LIMITED TO 15 FEET.
4. RAIL CAR SPANS WITHOUT CENTER SUPPORT ARE LIMITED TO 40 FEET.
5. GEOTEXTILE SHALL BE WOVEN WITH A MINIMUM GRAB TENSILE STRENGTH OF 200 POUNDS (MARV). ALTERNATES MUST BE APPROVED BY ENGINEER. WHERE SAFETY IS A CONCERN, GEOTEXTILE MAY BE REMOVED WITH PRIOR APPROVAL OF ENGINEER.
6. COMPOSITE MAT CAN BE SUBSTITUTED FOR TIMBER MATS.
7. CONSTRUCT AND MAINTAIN EQUIPMENT BRIDGES TO ALLOW UNRESTRICTED FLOW AND TO PREVENT SOIL FROM ENTERING THE WATERBODY.
8. WATERBARS AND BROAD-BASED DIPS SHALL DISCHARGE TO 18" CFS OR APPROVED SEDIMENT REMOVAL FACILITY.
9. FOLLOW PERMIT CONDITIONS REGARDING REMOVAL OF CROSSING.
10. PROVIDE 50' STABILIZED ACCESS TO CROSSING ON BOTH SIDES OF STREAM CHANNEL (SEE PLAN VIEW). THE STABILIZED APPROACH MAY CONSIST OF GRAVEL (AASHTO #1 OR EQUAL) OR TIMBER MATS.
11. RUNOFF FROM THE ROADWAY SHALL BE DIVERTED OFF THE ROADWAY AND INTO A SEDIMENT REMOVAL BMP BEFORE IT REACHES THE ROCK APPROACH TO THE CROSSING.
12. FOLLOW TROUT STREAM RESTRICTIONS SHOWN ON PLAN SHEETS.
13. ACCUMULATED SEDIMENT ON TIMBER MAT OR EQUIPMENT BRIDGE WILL BE REMOVED BY HAND AND PLACED IN SOIL STOCKPILES.

TEMPORARY EQUIPMENT BRIDGE STREAM CROSSING DETAIL

NOT TO SCALE



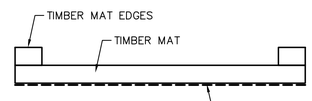


NOTES:

1. POST SIGNS, NO FUELING WITHIN 100' OF THE WETLAND BOUNDARY.
2. ALL CONTROLS WILL BE INSTALLED AFTER INITIAL GROUND DISTURBANCE AND MAINTAINED UNTIL ALL AREAS ARE STABILIZED.
3. LIMIT STUMP REMOVAL TO TRENCH LINE, UNLESS OTHER STUMPS CAUSE AN UNSAFE CONDITION.
4. RESTORE TO ORIGINAL CONTOUR AND DRAINAGE; RESTORE WETLAND MATERIAL.
5. RESTORE WETLAND IN ACCORDANCE WITH SHEET PLAN ES-0.09.

TEMPORARY TIMBER MAT WETLAND CROSSING (16 / 0.18)

NOT TO SCALE

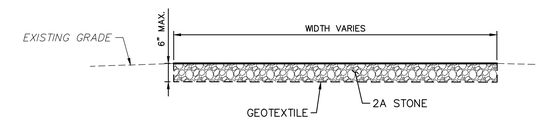


SECTION A-A

NOT TO SCALE

NOTE:

1. IF TIMBER MAT OR EQUIPMENT BRIDGE EDGES ARE NOT PROVIDED ON MAT TO CONTAIN SEDIMENT, INSTALL CFS IN SPECIAL PROTECTION WATERSHEDS OR SILT FENCE IN NON-SPECIAL PROTECTION WATERSHEDS TO PREVENT ANY SEDIMENT FROM THE EQUIPMENT CROSSING FROM ENTERING THE WETLAND.
2. GEOTEXTILE SHALL BE WOVEN WITH A MINIMUM GRAB TENSILE STRENGTH OF 200 POUNDS (MARV). ALTERNATES MUST BE APPROVED BY ENGINEER. WHERE SAFETY IS A CONCERN, GEOTEXTILE MAY BE REMOVED WITH PRIOR APPROVAL OF ENGINEER.
3. COMPOSITE MAT CAN BE SUBSTITUTED FOR TIMBER MATS.
4. ACCUMULATED SEDIMENT ON TIMBER MAT OR EQUIPMENT BRIDGE WILL BE REMOVED BY HAND AND PLACED IN SOIL STOCKPILES.



TYPICAL AGGREGATE ACCESS ROAD DETAIL

NOT TO SCALE

NOTES:

1. ENSURE RUNOFF FROM THE TRAVEL LANE SHALL BE DIVERTED OFF THE TRAVEL LANE INTO A SEDIMENT REMOVAL BMP BEFORE IT REACHES THE STABILIZED APPROACH.
2. GEOTEXTILE SHALL BE WOVEN WITH A MINIMUM GRAB TENSILE STRENGTH OF 200 POUNDS (MARV). ALTERNATES MUST BE APPROVED BY ENGINEER. WHERE SAFETY IS A CONCERN, GEOTEXTILE MAY BE REMOVED WITH PRIOR APPROVAL OF ENGINEER.

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www.tetratech.com
661 ANDERSEN DRIVE – FOSTER PLAZA 7
PITTSBURGH, PA 15220
T: (412) 921-7090 | F: (412) 921-4040

REVISIONS

NO.	BY	DATE	REMARKS
1	RS	3/28/17	INCORPORATED THE SPECIAL CONDITIONS SET FORTH IN DEP'S CHAPTER 102 AND CHAPTER 105 PERMITS
2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ROBERT F. SIMCIK LICENSE NO. PE082435-E 2/6/17

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 2

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

DATE:	2/6/2017
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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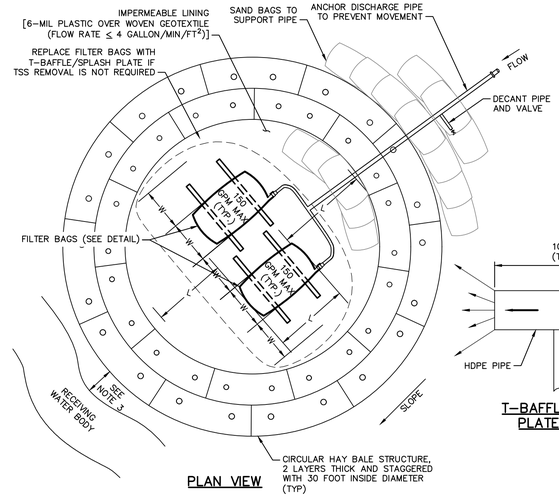
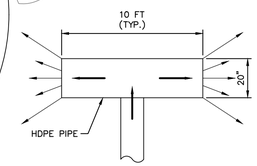
ES-0.18

SHEET 0.18 OF 102

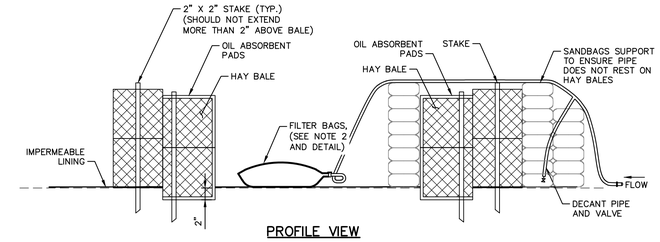
R:_Marcellus Shale Projects\Sunoco\5958 – Penn Pipeline Project\5 – Cambria\E&S\5958ES000.18.dwg PIT JAMES.SZPAK 11/28/2016 9:52:20 AM



PLAN VIEW



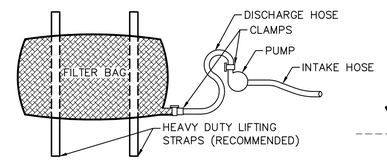
T-BAFFLE/SPLASH PLATE DETAIL



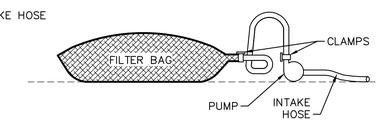
PROFILE VIEW

NOTES:

1. NOTICE OF INTENT MUST BE SUBMITTED AND NOTIFICATION OF PERMIT COVERAGE RECEIVED PRIOR TO DISCHARGING HYDROSTATIC TEST WATER.
2. HYDROSTATIC TEST WATER DISCHARGE STRUCTURE WILL BE LOCATED WITHIN THE PROJECT RIGHT-OF-WAY OR OTHER ESTABLISHED RIGHT-OF-WAY APPROVED BY SUNOCO AND LANDOWNER. INCREASE SIZE OF DISCHARGE STRUCTURE AND NUMBER OF FILTER BAGS TO MATCH REQUIRED DISCHARGE RATE AND TSS REMOVAL AS LONG AS REQUIRED LAND IS AVAILABLE. ADD ADDITIONAL SMALLER DISCHARGE STRUCTURES IF SPACE IS LIMITED. ELIMINATE FILTER BAG(S) IF TSS REMOVAL NOT REQUIRED AND REPLACE WITH T-BAFFLE/ SPLASH PLATE.
3. HYDROSTATIC WATER DISCHARGE STRUCTURE WILL BE LOCATED AT LEAST 100 FEET FROM THE EDGE OF A DELINEATED WETLAND, AND 50 FEET OR THE CHANNEL WIDTH, WHICHEVER IS GREATER, FROM THE TOP OF BANK OF A RECEIVING STREAM.
4. HYDROSTATIC WATER DISCHARGE STRUCTURE WILL BE LOCATED SUCH THAT IT DRAINS TO A WELL-VEGETATED AREA WITH SLOPES BETWEEN 1% AND 5% TOWARD THE RECEIVING WATERBODY.
5. HYDROSTATIC TEST WATER MUST BE SAMPLED AND ANALYZED TO CONFIRM COMPLIANCE WITH PARAMETERS IDENTIFIED IN PADEP PAG-10 GENERAL PERMIT FOR DISCHARGE FROM HYDROSTATIC TESTING OF TANKS AND PIPELINES AND THE APPROVED SAMPLING AND ANALYSIS PROGRAM FOR HYDROSTATIC TEST WATERS FOR PPP IN PENNSYLVANIA.
6. THE DISCHARGE RATE TO THE STRUCTURE SHOULD BE LIMITED TO THE LOWEST POSSIBLE RATE TO MINIMIZE ANY POTENTIAL IMPACT ON AQUATIC LIFE AND TO REDUCE THE POTENTIAL FOR EROSION (E.G., 150 GPM).
7. IF MUNICIPAL WATER IS USED FOR TESTING, HOLD THE WATER IN THE PIPE FOR AT LEAST 24 HOURS PRIOR TO DISCHARGE TO MEET TOTAL RESIDUAL CHLORINE LIMITS.
8. IMPLEMENT ADDITIONAL EROSION AND SEDIMENT CONTROLS AS REQUIRED IN PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION EROSION AND SEDIMENT CONTROL PROGRAM MANUAL, TECHNICAL GUIDANCE NUMBER 363-2134-008, MARCH 2012.
9. DO NOT DISCHARGE HYDROSTATIC TEST WATER TO EV OR HQ WATERS.
10. DO NOT DISCHARGE HYDROSTATIC TEST WATER TO TROUT STOCKED STREAMS FROM MARCH 1 TO JUNE 15. THE LISTING OF TROUT STOCKED STREAMS CAN BE FOUND ON THE PENNSYLVANIA FISH AND BOAT COMMISSION'S WEBSITE: WWW.FISH.STATE.PA.US.
11. A PREPAREDNESS, PREVENTION, AND CONTINGENCY (PPC) PLAN MUST BE DEVELOPED IN ACCORDANCE WITH PA DEP'S "GUIDELINES FOR THE DEVELOPMENT AND IMPLEMENTATION OF ENVIRONMENTAL EMERGENCY RESPONSE PLANS" (DEP ID 400-2200-001) AND ITS NPDES-SPECIFIC ADDENDUM. THE PPC PLAN MUST BE MAINTAINED ON-SITE AND BE MADE AVAILABLE UPON REQUEST.
12. WHERE COMPOST FILTER SOCK IS NECESSARY TO ELEVATE THE PUMPED WATER FILTER BAG TO AN ABACT E&S BMP, THE COMPOST FILTER SOCK SHALL BE PLACED TO SUFFICIENT LENGTH TO MANAGE ALL FLOW FROM THE PUMPED WATER FILTER BAG (IN ACCORDANCE WITH SPECIAL CONDITION PART C, SECTION II, CONDITION I OF THE APPROVED CHAPTER 102 PERMIT).



PLAN VIEW



ELEVATION VIEW

NOTE:

LOW VOLUME FILTER BAGS SHALL BE MADE FROM NON-WOVEN GEOTEXTILE MATERIAL SEWN WITH HIGH STRENGTH, DOUBLE STITCHED "J" TYPE SEAMS. THEY SHALL BE CAPABLE OF TRAPPING PARTICLES LARGER THAN 150 MICRONS. HIGH VOLUME FILTER BAGS SHALL BE MADE FROM WOVEN GEOTEXTILES THAT MEET THE FOLLOWING STANDARDS:

PROPERTY	TEST METHOD	MINIMUM STANDARD
AVG. WIDE WIDTH STRENGTH	ASTM D-4884	60 LB/IN
GRAB TENSILE	ASTM D-4632	205 LB
PUNCTURE	ASTM D-4833	110 LB
MULLEN BURST	ASTM D-3786	350 PSI
UV RESISTANCE	ASTM D-4355	70%
AOS % RETAINED	ASTM D-3751	80 SIEVE

FILTER BAGS SHALL BE REPLACED WHEN THEY BECOME ½ FULL OF SEDIMENT. SPARE BAGS SHALL BE KEPT AVAILABLE FOR REPLACEMENT OF THOSE THAT HAVE FAILED OR ARE FILLED. BAGS SHALL BE PLACED ON STRAPS TO FACILITATE REMOVAL UNLESS BAGS COME WITH LIFTING STRAPS ALREADY ATTACHED.

THE PUMP DISCHARGE HOSE SHALL BE INSERTED INTO THE BAGS IN THE MANNER SPECIFIED BY THE MANUFACTURER AND SECURELY CLAMPED. A PIECE OF PVC PIPE IS RECOMMENDED FOR THIS PURPOSE.

FILTER BAGS SHALL BE INSPECTED DAILY. IF ANY PROBLEM IS DETECTED, PUMPING SHALL CEASE IMMEDIATELY AND NOT RESUME UNTIL THE PROBLEM IS CORRECTED.

FILTER BAG DETAIL USE IN HAY BALE DISCHARGE STRCTURE
NOT TO SCALE

NOTE:
DETAIL NOT REQUIRED IN CAMBRIA COUNTY.

HYDROSTATIC TESTING WATER DIRECT DISCHARGE DETAIL
NOT TO SCALE
17 / 0.19

DISCHARGE STRUCTURES TO BE USED FOR HYDROSTATIC TEST WATER
NOT TO SCALE
18 / 0.19

CAMBRIA COUNTY HDD TESTING DISCHARGE LOCATION INFORMATION

OUTFALL NO	LATITUDE			LONGITUDE			HDD NUMBER	ANTICIPATED DISCHARGE EVENTS				RECEIVING WATER NAME	CH. 93 EXISTING USE
	DEGREES	MINUTES	SECONDS	DEGREES	MINUTES	SECONDS		FLOW (GPM)	DURATION (HRS)	VOLUME (GAL)*	NO./YEAR		
53	40	24	58.36	-78	52	17.13	S2-0069	2,000	0.33	39,596	1	UNT TO HINCKSTON RUN	CWF
54	40	25	1.2	-78	52	35.44		2,000	0.33	39,596	1	UNT TO HINCKSTON RUN	CWF
55	40	24	57.37	-78	52	4.84	S2-0070	2,000	0.561	67,268	1	UNT TO HINCKSTON RUN	CWF
56	40	27	8.83	-78	41	29.42	S2-0080	2,000	0.493	59,173	1	UNT TO N BRANCH LITTLE CONEMAUGH RIVER	CWF
57	40	27	3.23	-78	36	31.73	S2-0090	2,000	0.397	47,691	1	LITTLE CONEMAUGH RIVER	CWF
58	40	26	52.92	-78	36	14.67		2,000	0.397	47,691	1	UNT TO LITTLE CONEMAUGH RIVER	CWF
59	40	27	4.76	-78	36	35.22		2,000	0.397	47,691	1	LITTLE CONEMAUGH RIVER	CWF
60	40	24	59.56	-78	34	14.45	S2-0100	2,000	0.418	50,164	1	UNT TO BEAR ROCK RUN	CWF

* VOLUME DISPLAYS MAXIMUM POSSIBLE DISCHARGE VOLUME FOR EACH DISCHARGE LOCATION. NOT ALL DISCHARGE LOCATIONS WILL BE USED

CAMBRIA COUNTY (SPREAD 2) HDD TESTING DISCHARGE LOCATION INFORMATION
NOT TO SCALE
19 / 0.19

CAMBRIA COUNTY MAINLINE TESTING DISCHARGE LOCATION INFORMATION

OUTFALL NO	LATITUDE			LONGITUDE			ANTICIPATED DISCHARGE EVENTS				DISCHARGE TYPE	RECEIVING WATER NAME	CH. 93 EXISTING USE
	DEGREES	MINUTES	SECONDS	DEGREES	MINUTES	SECONDS	FLOW (GPM)	DURATION (HRS)	VOLUME (GAL)	NO./YEAR			
65	40	24	56.68	-78	34	9.68	2,000	41.571	4,988,488	1	HAY BALE DISCHARGE	UNT TO BEAR ROCK RUN	CWF
66	40	25	51.59	-78	35	7.21	2,000	41.571	4,988,488	1	HAY BALE DISCHARGE	UNT TO BURGOON RUN	CWF

CAMBRIA COUNTY (SPREAD 2) MAINLINE TESTING DISCHARGE LOCATION INFORMATION
NOT TO SCALE
20 / 0.19

TETRA TECH
www.tetratech.com
661 ANDERSEN DRIVE – FOSTER PLAZA 7
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2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ROBERT F. SIMCIK 6/6/17

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 2

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

DATE:	2/6/2017
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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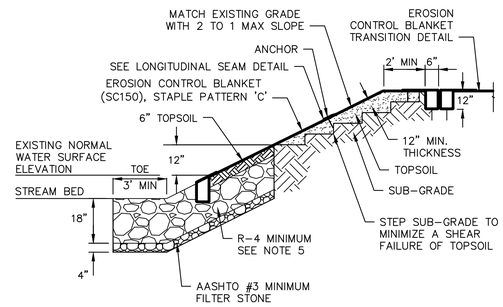
ES-0.19
SHEET 0.19 OF 102

STREAMBANK STABILIZATION TABLE

COUNTY	STREAM	SPECIAL PROTECTION WATER	NORMAL DEPTH (ft)	SLOPE (ft/ft)	VELOCITY (ft/sec)	SHEAR STRESS (lb/sf)	SHEAR STRESS LESS THAN 0.25?	RIP RAP REQUIRED	IF "RIP RAP" REQ'D, SIZE (TABLE 6.6)	THICKNESS (IN) OF RIP RAP (TABLE 6.6)	FILTER STONE TYPE
CAMBRIA	S-K27	NO	4	0.01	6.3	2.1	NO	YES	R-3 (1)	9	AASHTO #57
CAMBRIA	S-K29 (2)	NO	2	0.06	9.5	7.5	NO	YES	R-5	27	AASHTO #3
CAMBRIA	S-K30 (11)	NO	2	0.05	8.8	6.5	NO	YES	R-4	18	AASHTO #3
CAMBRIA	S-K31 (11)	NO	2	0.08	11.5	10.0	NO	YES	R-5	27	AASHTO #3
CAMBRIA	S-N21	YES	2	0.03	6.8	3.7	NO	YES	R-4	18	AASHTO #3
CAMBRIA	S-N49	YES	1	0.12	11.0	7.5	NO	YES	R-5	27	AASHTO #3
CAMBRIA	S-N50 (13)	YES	1	0.12	9.6	7.5	NO	YES	R-5	27	AASHTO #3
CAMBRIA	S-N50A(13)	YES	1	0.10	9.3	6.2	NO	YES	R-5	27	AASHTO #3
CAMBRIA	S-N51 (4)	YES	1.9	0.08	14.4	9.9	NO	YES	R-7	45	AASHTO #1
CAMBRIA & INDIANA	S-O74	YES	0.5	0.16	6.6	5.0	NO	YES	R-4	18	AASHTO #3
CAMBRIA	S-N63 (12)	NO	1	0.08	7.7	5.2	NO	YES	R-4	18	AASHTO #3
CAMBRIA	S-N62 (3)	NO	3	0.08	13.3	15.8	NO	YES	R-7	45	AASHTO #1
CAMBRIA	S-CC4 (8)	YES	6	0.02	12.5	8.5	NO	YES	R-6	36	AASHTO #1
CAMBRIA	S-CC5 (8)	YES	4	0.03	7.5	6.9	NO	YES	R-4	18	AASHTO #3
CAMBRIA	S-CC6 (8)	YES	6	0.04	11.2	13.4	NO	YES	R-5	27	AASHTO #3
CAMBRIA	S-CC7 (16)	YES	2.75	0.04	12.7	7.1	NO	YES	R-6	36	AASHTO #1
CAMBRIA	S-L92 (15)	NO	8	0.03	8.4	13.8	NO	YES	R-4	18	AASHTO #3
CAMBRIA	S-N10 (14)	NO	5	0.03	10.1	10.0	NO	YES	R-5	27	AASHTO #3
CAMBRIA	S-N45 (5)	YES	6	0.02	8.3	7.4	NO	YES	R-4	18	AASHTO #3
CAMBRIA	S-N46	YES	6	0.02	11.9	7.4	NO	YES	R-6	36	AASHTO #1
CAMBRIA	S-N53 (9)	YES	2.25	0.10	14.2	14.7	NO	YES	R-7	45	AASHTO #1
CAMBRIA	S-N54 (2)	YES	1	0.09	7.8	5.4	NO	YES	R-4	18	AASHTO #3
CAMBRIA	S-O31 (7)	YES	1	0.10	7.4	6.2	NO	YES	R-4	18	AASHTO #3
CAMBRIA	S-O37 (10)	YES	3	0.03	6.7	4.8	NO	YES	R-4	18	AASHTO #3
CAMBRIA	S-O45 (6)	YES	6	0.05	13.7	20.1	NO	YES	R-7	45	AASHTO #1
CAMBRIA	S-O30 (6)	YES	5.75	0.03	14.4	9.2	NO	YES	R-7	45	AASHTO #1
CAMBRIA	S-M90	NO									
CAMBRIA	S-N46	YES	2.91	0.0038	4.25	0.69	NO	YES	R-3 (1)	9	AASHTO #57
CAMBRIA	S-O59	YES	2.69	0.0116	7.36	1.95	NO	YES	R-4	18	AASHTO #3
CAMBRIA	S-O21	NO	1.85	0.0083	4.75	0.96	NO	YES	R-3 (1)	9	AASHTO #57
CAMBRIA	S-O17	NO	3.09	0.0053	5.33	1.02	NO	YES	R-3 (1)	9	AASHTO #57
CAMBRIA	S-N34	NO	4.22	0.026	13.76	6.85	NO	YES	R-7	45	AASHTO #1
CAMBRIA	S-N33	NO	1.63	0.035	8.27	3.56	NO	YES	R-4	18	AASHTO #3

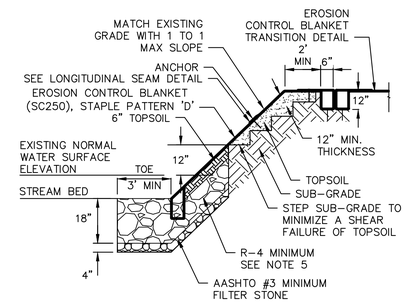
(1) R-4 IS MINIMUM RIPRAP SIZE TO BE USED. IF CALCULATIONS IDENTIFIED SMALLER STONE SIZE WILL BE INCREASED TO R-4
(2) NO SITE SPECIFIC DRAWING NEEDED, THIS IS AN EPHEMERAL STREAM AND ONLY PERENNIAL STREAMS QUALIFY
(3) SEE SITE SPECIFIC DRAWING WL-140
(4) SEE SITE SPECIFIC DRAWING WL-N30
(5) SEE SITE SPECIFIC DRAWING WL-N29
(6) SEE SITE SPECIFIC DRAWING WL-O37
(7) SEE SITE SPECIFIC DRAWING WL-O16
(8) SEE SITE SPECIFIC DRAWING WL-CC6
(9) SEE SITE SPECIFIC DRAWING WL-N33
(10) SEE SITE SPECIFIC DRAWING WL-O20
(11) SEE SITE SPECIFIC DRAWING S-K27
(12) SEE SITE SPECIFIC DRAWING WL-139
(13) SEE SITE SPECIFIC DRAWING S-N49
(14) SEE SITE SPECIFIC DRAWING WL-N4
(15) SEE SITE SPECIFIC DRAWING WL-L65
(16) SEE SITE SPECIFIC DRAWING WL-CC21



NOTES:

1. A SUITABLE WOVEN OR NON-WOVEN GEOTEXTILE UNDERLAYMENT MUST BE USED IN ACCORDANCE TO MANUFACTURER'S RECOMMENDATIONS.
2. REFER TO NORTH AMERICAN GREEN DETAILS.
3. MATTING WILL EXTEND FROM TOP OF BANK 50' PERPENDICULARLY AWAY FROM TOP OF BANK OR 100' IN HQ/EV WATERSHEDS.
4. NATURAL STREAM BED MATERIAL TO BE STRIPPED AND SEGREGATED FROM SUBSURFACE MATERIAL FOR FINAL STREAMBED RESTORATION.
5. WHERE NATURAL STONE IS REMOVED FROM THE STREAM CROSSING, NATURAL STONE SHALL BE INSTALLED AS TOP 6 INCHES OF RIPRAP.

RIP-RAP BANK STABILIZATION DETAIL
NOT TO SCALE



NOTES:

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5. WHERE NATURAL STONE IS REMOVED FROM THE STREAM CROSSING, NATURAL STONE SHALL BE INSTALLED AS TOP 6 INCHES OF RIPRAP.
6. FOR SLOPES GREATER THAN 1:1 REFER TO SITE SPECIFIC PLANS FOR APPROPRIATE CONTROLS.

STEEP BANK STABILIZATION DETAIL
NOT TO SCALE

TETRA TECH
www.tetratech.com
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PITTSBURGH, PA 15220
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2	RS	5/25/17	DRAWINGS PROVIDED TO FIELD
3	RS	9/27/18	REVISED STREAMBANK STABILIZATION TABLE

COMMONWEALTH OF PENNSYLVANIA REGISTERED PROFESSIONAL ENGINEER ROBERT F. SIMCIK 2/6/17

SUNOCO PIPELINE L.P.
SINKING SPRING, PENNSYLVANIA

PENNSYLVANIA PIPELINE PROJECT
CONSTRUCTION SPREAD 2

1-20" & 1-16" PROPOSED WELDED STEEL NATURAL GAS LIQUIDS PIPELINES

CAMBRIA COUNTY CONSERVATION DISTRICT
EROSION & SEDIMENT CONTROL &
SITE RESTORATION PLAN
NOTES & DETAILS

DATE:	2/6/2017
PROJECT NO.:	112C05958
DESIGNED BY:	JB
DRAWN BY:	BH
CHECKED BY:	RS

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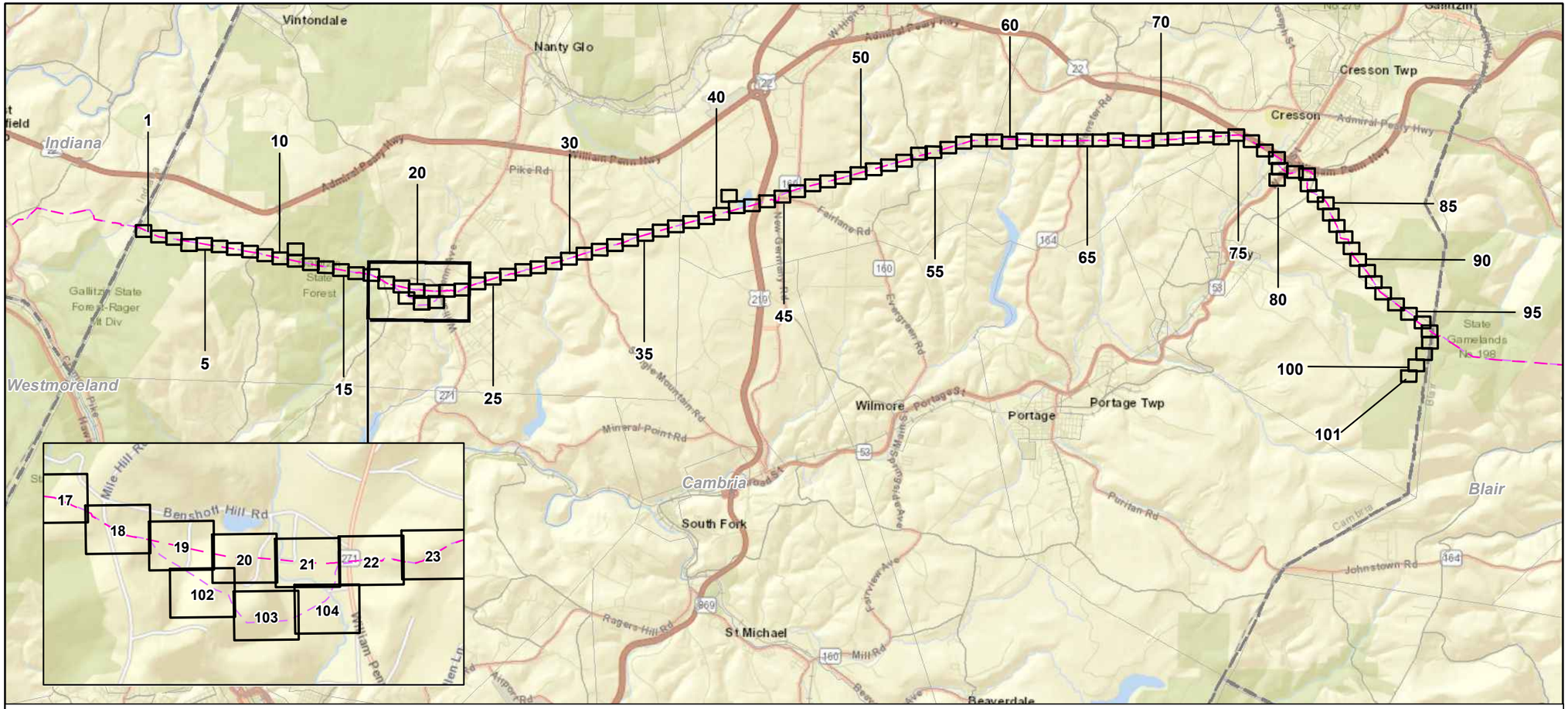
ES-0.20
SHEET 0.20 OF 102

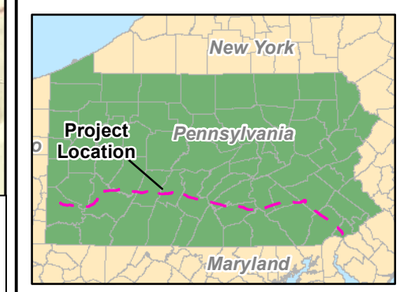
ATTACHMENT E

Updated Site Plan
Aquatic Resource Impact Table



Legend

- Sheet Boundary
- Municipal Boundary
- PPP 1
- PPP 2
- Roads
- County Boundary



N

0 0.5 1 2 3 4 Miles

1 inch = 10,000 feet

Mapset Legend

- Sheet Boundary
- Site Specific Drawing
- PPP 1
- PPP 2
- PPP 1, Bore
- PPP 1, HDD
- PPP 2, Bore
- PPP 2, HDD
- Pullback String
- Bore Pits
- Existing Block Valve
- New Block Valve
- Block Valve Setting LOD
- Permanent Easement (no surface disturbance)
- Permanent ROW
- Temporary ROW
- ATWS
- Permanent Access Road
- Temporary Access Road
- ROW - Travel LOD (Travel Lane)
- ROW - Travel and Clearing LOD (Clearing LOD)
- Station LOD
- Hay Bale Discharge (See E&S Plan, Att 12)
- Direct Discharge (See E&S Plan, Att 12)
- Water Source (See E&S Plan, Att 12)
- ME1 12" Pipeline
- 12" ME1 Permanent ROW
- 8" Centerline
- 8" Pipeline Maintenance Corridor
- Existing Buried Cable
- Existing Electric Line
- Existing Fiberoptic Cable
- Existing Gas Line
- Existing Phone Line
- Existing Sanitary Sewer
- Existing Septic System
- Existing Storm Sewer
- Existing TV Line
- Existing Utility (unknown)
- Existing Water Line
- Stream Photo
- PEM Photo
- PFO Photo
- PSS Photo
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Chapter 105 Floodway
- Waived Ch. 105 Floodway
- Ch. 106 Floodplain Fringe
- PEM Extension
- PFO Extension
- PSS Extension
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Pond
- Municipal Boundary
- Parcels
- Contours
- Roads

Site Plan Sheet Key for the Sunoco Pennsylvania Pipeline Project, Cambria County, PA.
Sheet 1 of 1

Prepared By:	Date:
TETRA TECH	01/2019

Base Map; ESRI ArcGIS Online, Roads from NRCS Geospatial Data Giveaway, 100-Year Floodplain from FEMA National Flood Hazard Layer, downloaded 8/2013.

Coordinate System: NAD 83 Stateplane, PA South, Feet

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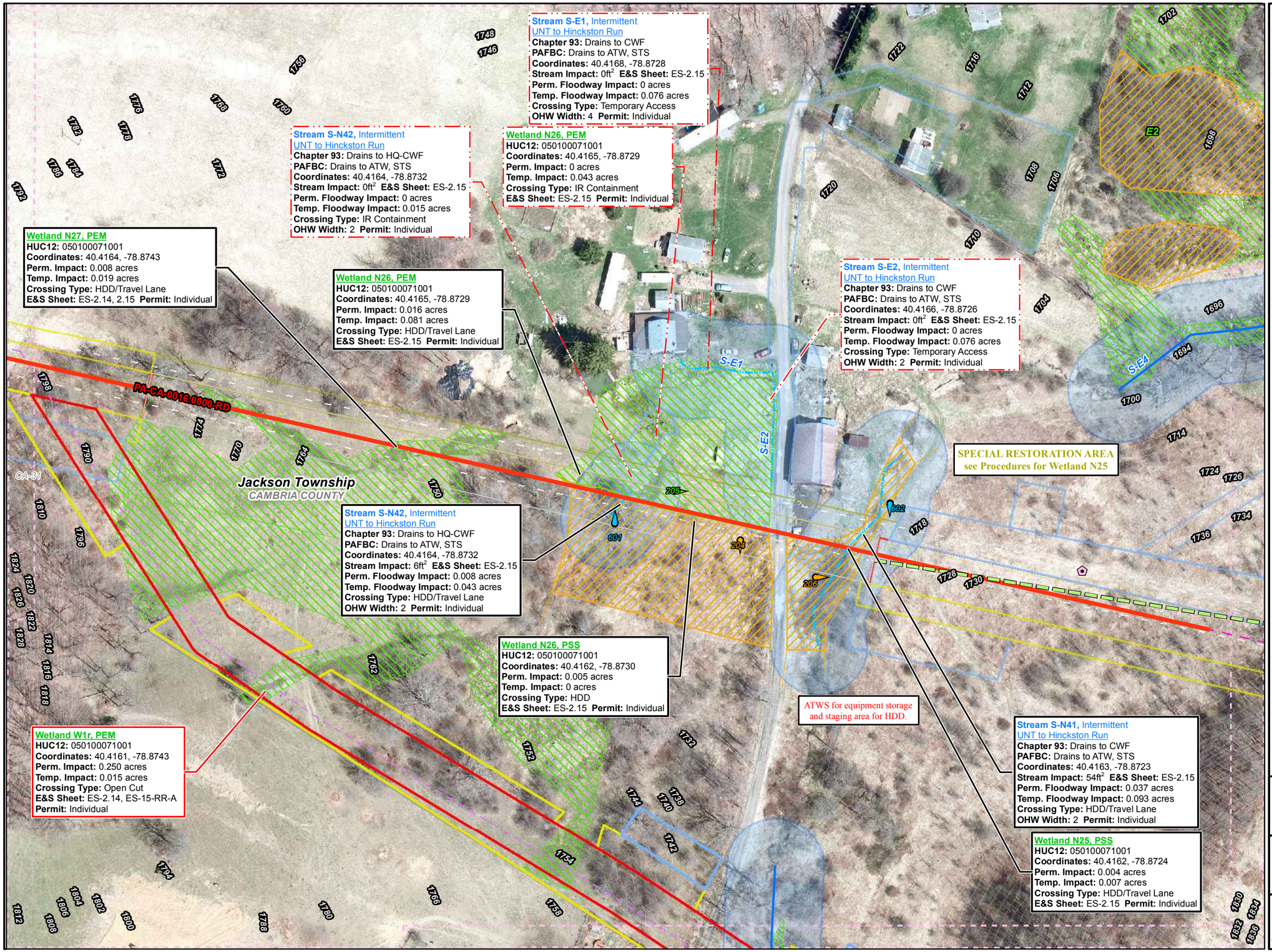
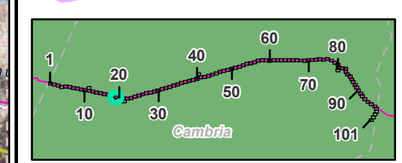


Legend

- Sheet Boundary
- PPP 1
- PPP 2
- PPP 1, Bore
- PPP 1, HDD
- PPP 2, Bore
- PPP 2, HDD
- Pullback String
- Permanent Easement (no surface disturbance)
- Permanent ROW
- Temporary ROW
- ATWS
- Permanent Access Road
- Temporary Access Road
- ROW-Travel LOD
- ROW-Travel and Clearing LOD
- Existing Block Valve
- New Block Valve
- Block Valve Setting LOD
- Station LOD
- Bore Pits
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Pond
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Chapter 105 Floodway
- Waived Floodway
- Ch. 106 Floodplain Fringe



N

0 25 50 100 150 200

1 inch = 100 feet

Site Plan for the Sunoco Pennsylvania Pipeline Project, Cambria County, PA.
Sheet 19 of 104

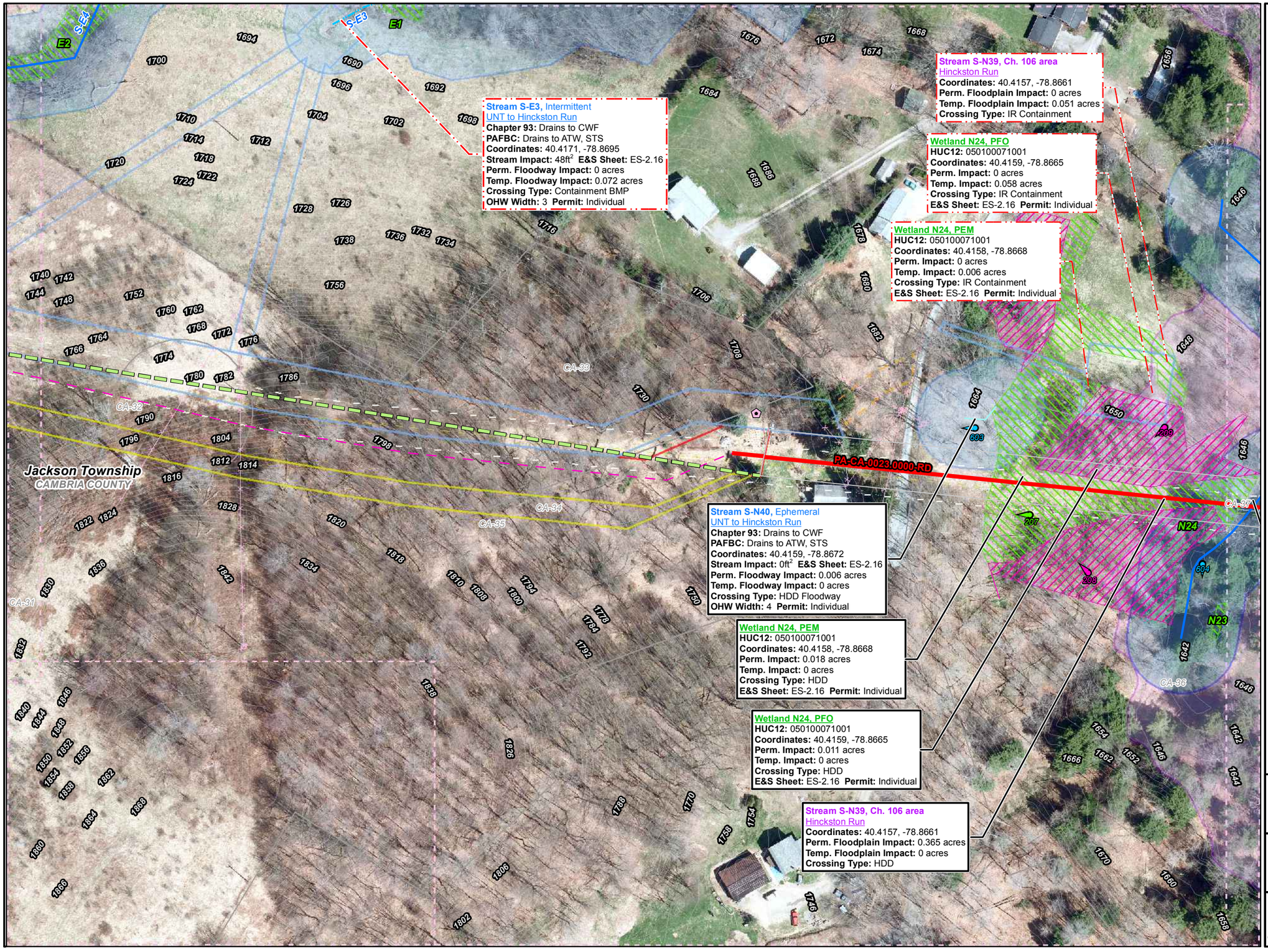
Prepared By: TETRA TECH

Date: 1/2019

Base Map; SPLP 2014-2016, Roads from NRCS Geo-spatial Data Giveaway, 100-Year Floodplain from FEMA NFHL, downloaded 9/2016. Aquatics, TT 2013-2018.

Coordinate System: NAD 83 Stateplane, PA South, Feet

P:\GIS\Projects\112\C5958-PPP\MXD\Permits\CambriaCountySitePlan_Rev13



Legend

- Sheet Boundary
- PPP 1
- PPP 2
- PPP 1, Bore
- PPP 1, HDD
- PPP 2, Bore
- PPP 2, HDD
- Pullback String
- Permanent Easement (no surface disturbance)
- Permanent ROW
- Temporary ROW
- ATWS
- Permanent Access Road
- Temporary Access Road
- ROW-Travel LOD
- ROW-Travel and Clearing LOD
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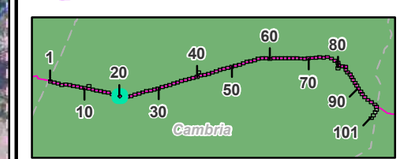
- Block Valve Setting LOD
- Station LOD
- Bore Pits
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Pond
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Chapter 105 Floodway
- Waived Floodway
- Ch. 106 Floodplain Fringe



N

0 25 50 100 150 200

1 inch = 100 feet

Site Plan for the Sunoco Pennsylvania Pipeline Project, Cambria County, PA.
Sheet 20 of 104

Prepared By: TETRA TECH

Date: 1/2019

Base Map; SPLP 2014-2016, Roads from NRCS Geo-spatial Data Giveaway, 100-Year Floodplain from FEMA NFHL, downloaded 9/2016. Aquatics, TT 2013-2018.

Coordinate System: NAD 83 Stateplane, PA South, Feet

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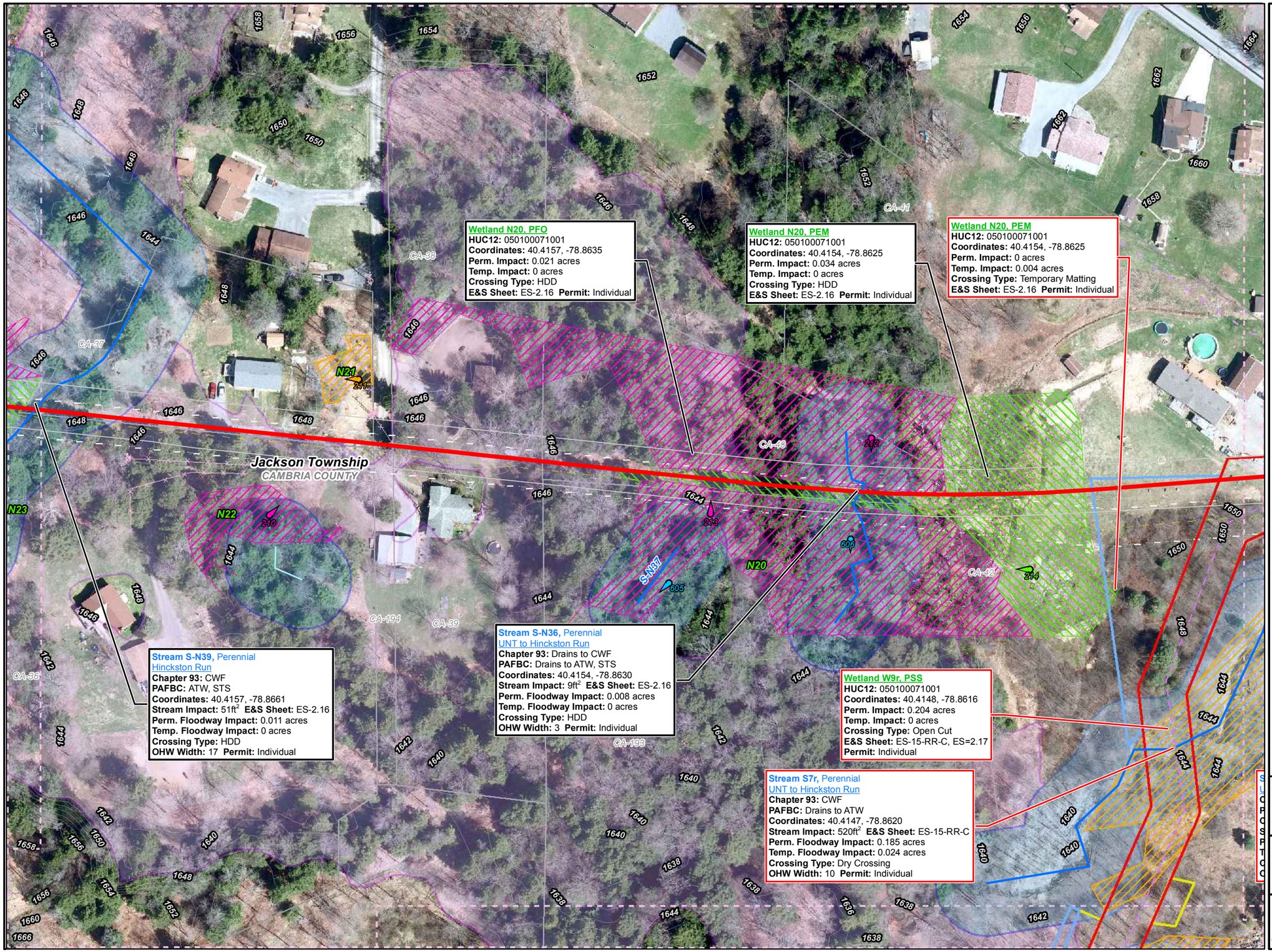

Legend

- Sheet Boundary
- PPP 1
- PPP 2
- PPP 1, Bore
- PPP 1, HDD
- PPP 2, Bore
- PPP 2, HDD
- Pullback String
- Permanent Easement (no surface disturbance)
- Permanent ROW
- Temporary ROW
- ATWS
- Permanent Access Road
- Temporary Access Road
- ROW-Travel LOD
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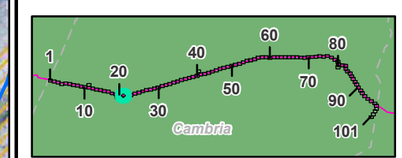
- Station LOD
- Bore Pits
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Pond
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Chapter 105 Floodway
- Waived Floodway
- Ch. 106 Floodplain Fringe



N

0 25 50 100 150 200

1 inch = 100 feet

Site Plan for the Sunoco Pennsylvania Pipeline Project, Cambria County, PA.
Sheet 21 of 104

Prepared By: TETRA TECH

Date: 1/2019

Base Map; SPLP 2014-2016, Roads from NRCS Geo-spatial Data Giveaway, 100-Year Floodplain from FEMA NFHL, downloaded 9/2016. Aquatics, TT 2013-2018.

Coordinate System: NAD 83 Stateplane, PA South, Feet

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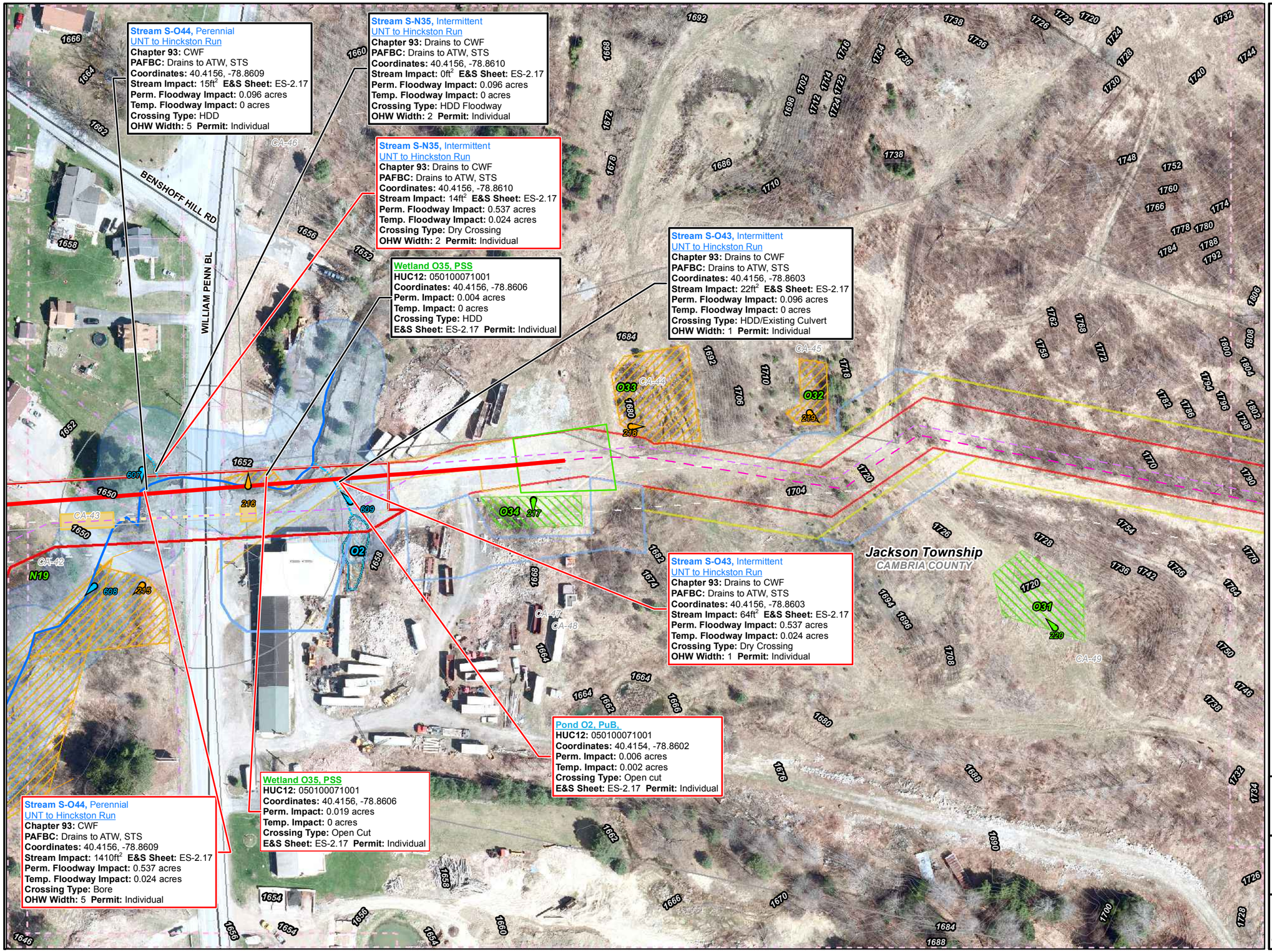

Legend

- Sheet Boundary
- PPP 1
- PPP 2
- PPP 1, Bore
- PPP 1, HDD
- PPP 2, Bore
- PPP 2, HDD
- Pullback String
- Permanent Easement (no surface disturbance)
- Permanent ROW
- Temporary ROW
- ATWS
- Permanent Access Road
- Temporary Access Road
- ROW-Travel LOD
- ROW-Travel and Clearing LOD
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- Station LOD
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- PEM Wetland
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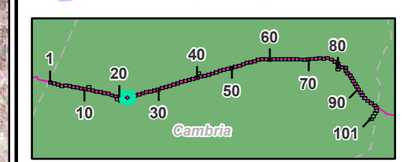
- PSS Wetland
- Pond
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Chapter 105 Floodway
- Waived Floodway
- Ch. 106 Floodplain Fringe



N

0 25 50 100 150 200

1 inch = 100 feet

Site Plan for the Sunoco Pennsylvania Pipeline Project, Cambria County, PA.
Sheet 22 of 104

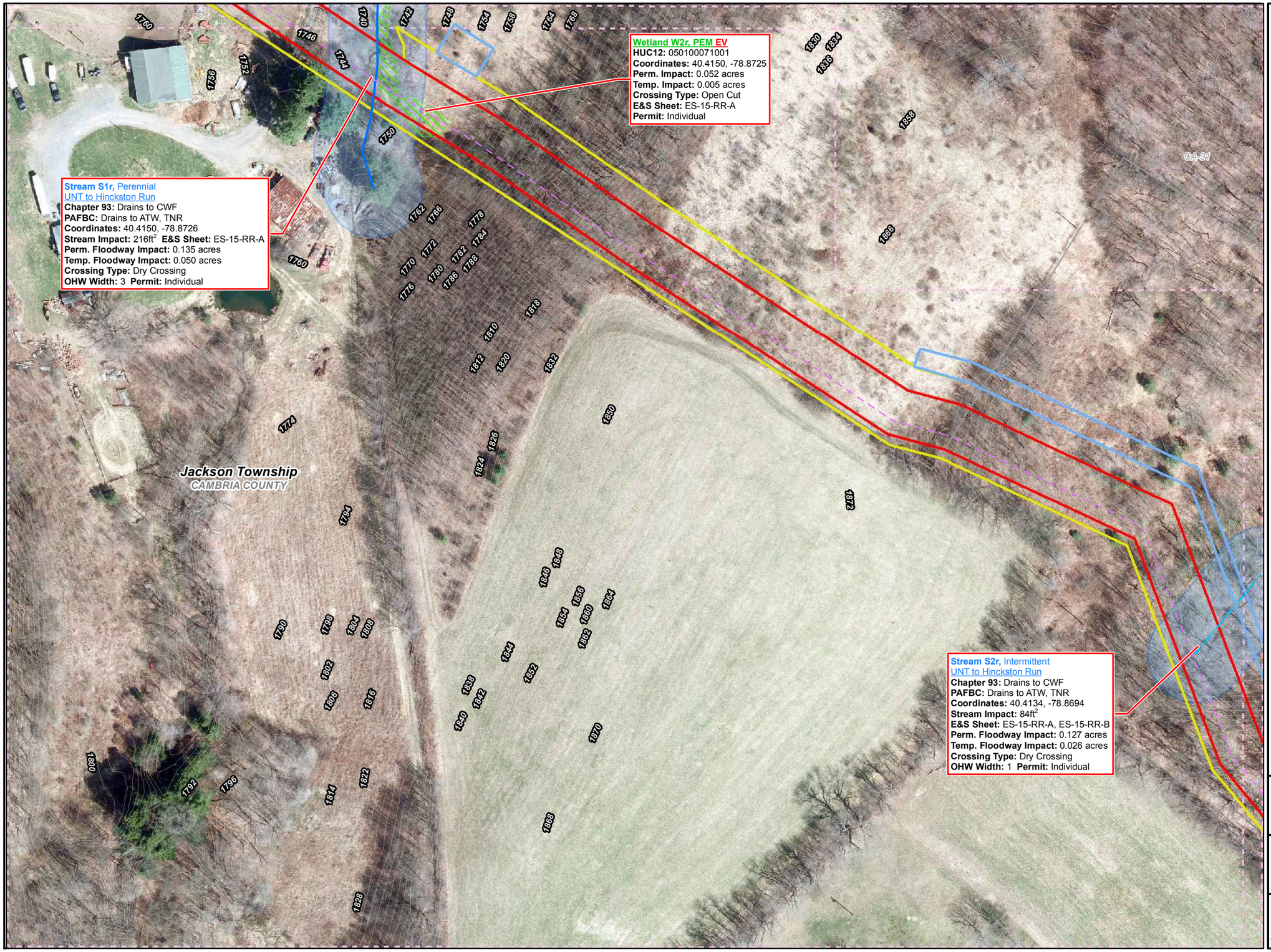
Prepared By: TETRA TECH

Date: 1/2019

Base Map; SPLP 2014-2016, Roads from NRCS Geo-spatial Data Giveaway, 100-Year Floodplain from FEMA NFHL, downloaded 9/2016. Aquatics, TT 2013-2018.

Coordinate System: NAD 83 Stateplane, PA South, Feet

P:GIS/Projects/112/C5958-PPP/MXD/Permits/CountyPermits/CambriaCountySitePlan_Rev13



Legend

- Sheet Boundary
- PPP 1
- PPP 2
- PPP 1, Bore
- PPP 1, HDD
- PPP 2, Bore
- PPP 2, HDD
- Pullback String
- Permanent Easement (no surface disturbance)
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- PSS Wetland
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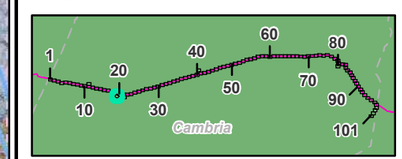
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Chapter 105 Floodway
- Waived Floodway
- Ch. 106 Floodplain Fringe



N

0 25 50 100 150 200

1 inch = 100 feet

Site Plan for the Sunoco Pennsylvania Pipeline Project, Cambria County, PA.
Sheet 102 of 104

Prepared By: TETRA TECH

Date: 1/2019

Base Map; SPLP 2014-2016, Roads from NRCS Geo-spatial Data Giveaway, 100-Year Floodplain from FEMA NFHL, downloaded 9/2016. Aquatics, TT 2013-2018.

Coordinate System: NAD 83 Stateplane, PA South, Feet

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Legend

- Sheet Boundary
- PPP 1
- PPP 2
- PPP 1, Bore
- PPP 1, HDD
- PPP 2, Bore
- PPP 2, HDD
- Pullback String
- Permanent Easement (no surface disturbance)
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- Temporary ROW
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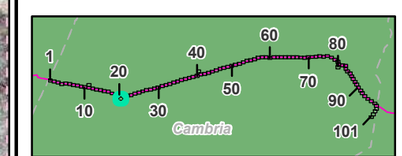
- PSS Wetland
- Pond
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Chapter 105 Floodway
- Waived Floodway
- Ch. 106 Floodplain Fringe



N

0 25 50 100 150 200

1 inch = 100 feet

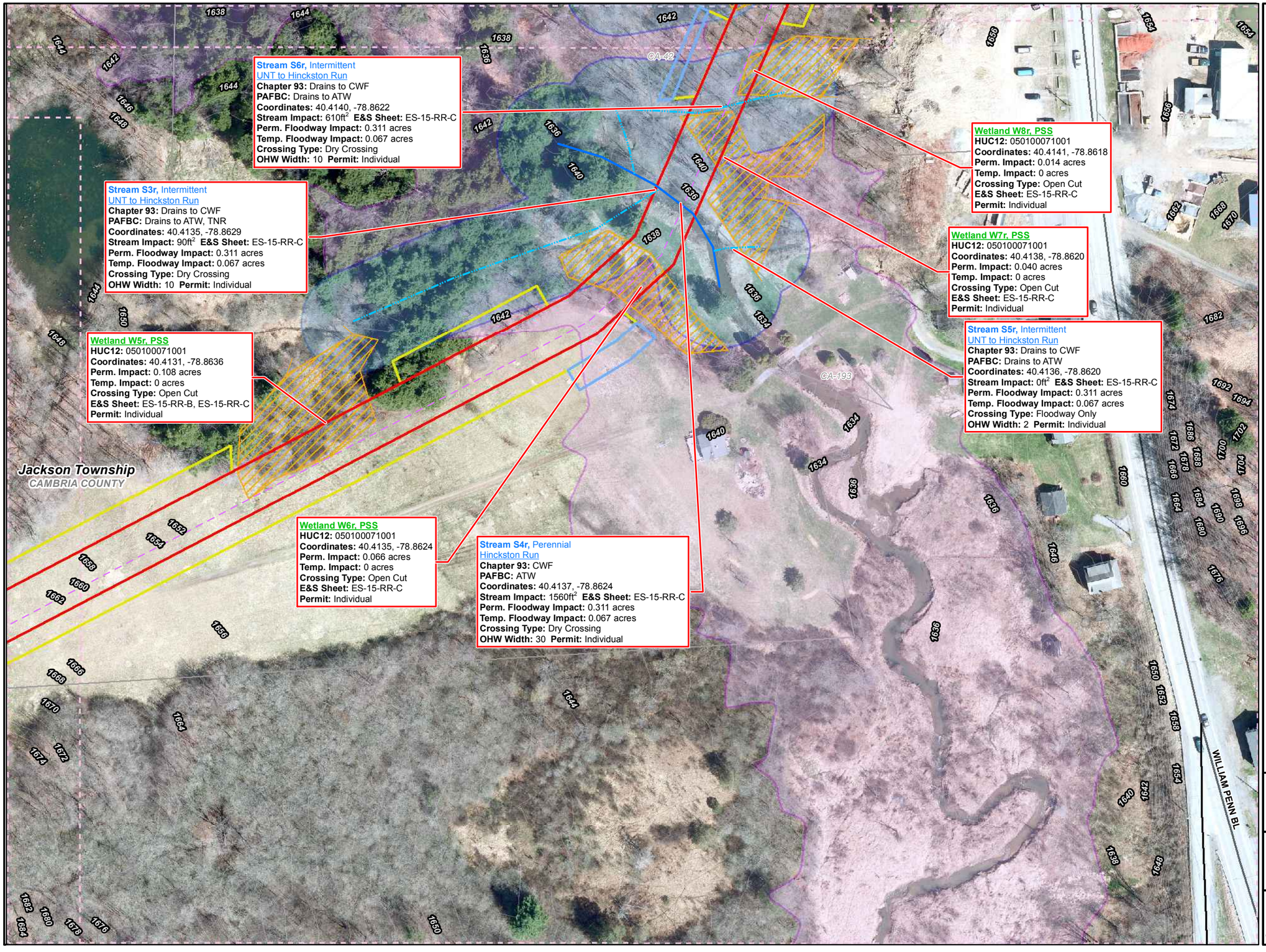
Site Plan for the Sunoco Pennsylvania Pipeline Project, Cambria County, PA.
Sheet 103 of 104

Prepared By:	Date:
TETRA TECH	1/2019

Base Map; SPLP 2014-2016, Roads from NRCS Geo-spatial Data Giveaway, 100-Year Floodplain from FEMA NFHL, downloaded 9/2016. Aquatics, TT 2013-2018.

Coordinate System: NAD 83 Stateplane, PA South, Feet

P:GIS/Projects/112/C5958-PPP/MXD/Permits/CountyPermits/CambriaCountySitePlan_Rev13



Legend

- Sheet Boundary
- PPP 1
- PPP 2
- PPP 1, Bore
- PPP 1, HDD
- PPP 2, Bore
- PPP 2, HDD
- Pullback String
- Permanent Easement (no surface disturbance)
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- Temporary ROW
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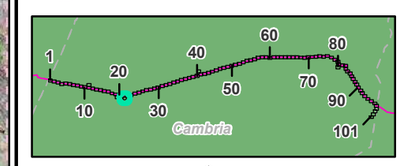
- Block Valve Setting LOD
- Station LOD
- Bore Pits
- PEM Wetland
- PFO Wetland
- PSS Wetland
- Pond
- Ephemeral Stream
- Intermittent Stream
- Perennial Stream
- Chapter 105 Floodway
- Waived Floodway
- Ch. 106 Floodplain Fringe



N

0 25 50 100 150 200

1 inch = 100 feet

Site Plan for the Sunoco Pennsylvania Pipeline Project, Cambria County, PA.
Sheet 104 of 104

Prepared By: TETRA TECH

Date: 1/2019

Base Map; SPLP 2014-2016, Roads from NRCS Geo-spatial Data Giveaway, 100-Year Floodplain from FEMA NFHL, downloaded 9/2016. Aquatics, TT 2013-2018.

Coordinate System: NAD 83 Stateplane, PA South, Feet

P:GIS/Projects/112IC5858-PPP/MXD/Permits/CountyPermits/CambriaCountySitePlan_Rev13

Aquatic Resource Impact Table

Applicant's Name / Client: Sunoco Pipeline LP

pennsylvania DEPARTMENT OF ENVIRONMENTAL PROTECTION

for Pennsylvania Chapter 105 Water Obstruction and Encroachment application/registration and US Army Corps of Engineers Section 404 application

INSTRUCTIONS:

Please begin to complete the Aquatic Resource Impact Table by including the Applicant's Name / Client (upper right of the page) for each page. Also, complete the Project / Site Name (upper left of the page) and the date of application/registration package submission (upper right, under Applicant's Name / Client). Then complete one row of data *for each* regulated (DEP Chapter 105 and Corps Section 404) structure or activity *and type of impact* for the proposed project based on the instructions for each column below; add additional worksheets if needed. Provide completed Aquatic Resource Impact Table with Chapter 105 Water Obsruction and Encroachment application/registration; **DO NOT submit instructions (page 1) for this table.**

Project / Permit Number	**DEP / Corps USE ONLY**
DEP Permit Number:	***leave blank***, it will be completed by DEP upon permit acknowledgement/issuance/verification.
Single and Complete Project Number:	***leave blank***, it will be completed by DEP/Corps upon permit acknowledgement/issuance/verification.
Crossing Number:	***leave blank***, it will be completed by DEP upon permit acknowledgement/issuance/verification.

Project Information	*provide the appropriate information based on the details on each impact for the project*
Structure / Activity Identifier:	provide a unique identifier for each regulated structure and/or activity being proposed, typically a name and number; this same unique identifier should be used in all aspect of the permit registration/application package.
Aquatic Resource:	indicate if the structure or activity is impacting a stream or wetland
Aquatic Resource Type:	select/provide the type of aquatic resource (based on wetland or stream) being impacted;
Stream:	select/provide the type of stream being impacted: perennial, intermittent, ephemeral stream or stream floodway
Wetland:	select/provide the type of wetland being impacted: PEM, PSS, PFO or POW wetland
Latitude (nad 83)**:**	provide the latitude of the aquatic resource impact in decimal degrees
Longitude (nad 83)**:**	provide the longitude of the aquatic resource impact in decimal degrees
Work proposed / impact type:	select/provide the type of work proposed to impact the resource; aerial, boring, excavation or fill
Waters Name:	provide the name of the stream or wetland (if available)
PA Code Chapter 93 Designation:	provide the Chapter 93 designation for the aquatic resource

Corps / 404 area	*provide the appropriate information based on the aquatic resource impact* ***within the Section 404 jurisdictional area****, list all impacts separately.*	
Corps Impact Type:	select/provide the type of aquatic resource impact; temporary, permanent or n/a; **indicate "n/a" if you are not proposing any work in, over, or under waters and/or wetlands**	
Stream Impact:	**WIDTH**	provide the linear feet, measuring from top of bank to top of bank, of transverse and/or full channel fill stream impacts; *indicate "n/a" if impact is to a wetland OR if "n/a" to Corps Impact Type*
	LENGTH	provide the linear feet, measuring down the center line of stream, of transverse and/or full channel fill stream impacts; *indicate "n/a" if impact is to a wetland OR if "n/a" to Corps Impact Type*
	AREA	provide the square feet area of direct and indirect/secondary stream impact; dewatering or fill placed in stream channel such as rip rap or fish habitat; *indicate "n/a" if impact is to a wetland OR if "n/a" indicated above to Corps Impact Type*
Wetland Impact:	**AREA**	provide the square feet area of impacts to wetlands; *indicate "n/a" if impact is to a stream OR if "n/a" to Corps Impact Type*

PADEP / 105 area	*provide the appropriate information based on the aquatic resource impact* ***within Chapter 105 jurisdictional area****, list all impacts separately.*	
PADEP Impact Type:	select/provide the type of aquatic resource impact; temporary or permanent.	
Floodway Impact:	**AREA**	provide the square feet area of direct and indirect/secondary 100-year floodway impact, inlcuding watercourse; indicate "n/a" if impact is to a wetland.
Wetland Impact:	**AREA**	provide the square feet area of impacts to wetlands; indicate "n/a" if impact is to a stream

Project / Site Name: Example Project **Date:** July 1, 2016

DEP / Corps use only			Project Information								Corps / 404					PADEP / 105		
PADEP Permit Number *leave blank*	**Single and Complete Project** *leave blank*	**Crossing Number** *leave blank*	**Structure / Activity** unique identifier	**Aquatic Resource** being impacted	**Aquatic Resource TYPE**	**Latitude** *dd nad83*	**Longitude** *dd nad83*	**Work Proposed / Impact Type**	**Waters Name**	**PA Code Chapter 93 Designation**	**Corps Impact TYPE** *temp / perm*	**Stream Impact WIDTH** linear feet	**Stream Impact LENGTH** linear feet	**Stream Impact AREA** sqare feet	**Wetland Impact AREA** square feet	**DEP Impact TYPE** *temp / perm*	**Floodway Impact AREA** square feet	**Wetland Impact AREA** square feet
			Stream 1	Stream	Perennial	41.7710519	-77.1526930	Excavation	UNT	CWF	Temp	6	110	713	N/A	Temp	2201	N/A
			Wetland 1	Wetland	Paulstine Emergent (	42.6895100	-76.1539500	Boring	WETLAND	OTHER	N/A	N/A	N/A	N/A	N/A	Perm	N/A	300
			Wetland 2	Wetland	Paulstine Emergent (	42.7026800	-76.1546200	Fill	WETLAND	OTHER	Perm	N/A	N/A	N/A	83	Perm	N/A	83

Aquatic Resource Impact Table

Applicant's Name / Client: Sunoco Pipeline LP

Project / Site Name: Pennsylvania Pipeline Project: Goldfinch Modification

Date: 1/17/2019

DEP / Corps use only			Project Information								Corps / 404					PADEP / 105		
PADEP Permit Number *leave blank*	Single and Complete Project *leave blank*	Crossing Number *leave blank*	Structure / Activity unique identifier	Aquatic Resource being impacted	Aquatic Resource TYPE	Latitude *dd nad83*	Longitude *dd nad83*	Work Proposed / Impact Type	Waters Name	PA Code Chapter 93 Designation	Corps Impact TYPE *temp / perm*	Stream Impact WIDTH linear feet	Stream Impact LENGTH linear feet	Stream Impact AREA square feet	Wetland Impact AREA square feet	DEP Impact TYPE *temp / perm*	Floodway Impact AREA square feet	Wetland Impact AREA square feet
			W1r	Wetland	Paulstine Emergent (PEM)	40.4161	-78.8743	Excavation	WETLAND	Other	Temp	N/A	N/A	N/A	10887	Perm	N/A	10887
			W1r	Wetland	Paulstine Emergent (PEM)	40.4161	-78.8743	Fill	WETLAND	Other	Temp	N/A	N/A	N/A	657	Temp	N/A	657
			W2r	Wetland	Paulstine Emergent (PEM)	40.415	-78.8725	Excavation	WETLAND	EV	Temp	N/A	N/A	N/A	2244	Perm	N/A	2244
			W2r	Wetland	Paulstine Emergent (PEM)	40.415	-78.8725	Fill	WETLAND	EV	Temp	N/A	N/A	N/A	217	Temp	N/A	217
			W3r	Wetland	Paulstine Emergent (PEM)	40.4124	-78.865	Excavation	WETLAND	Other	Temp	N/A	N/A	N/A	459	Perm	N/A	459
			W5r	Wetland	Palustrine Scrub Shrub (PSS)	40.4131	-78.8638	Excavation	WETLAND	Other	Temp	N/A	N/A	N/A	4695	Perm	N/A	4695
			W6r	Wetland	Palustrine Scrub Shrub (PSS)	40.4135	-78.8624	Excavation	WETLAND	Other	Temp	N/A	N/A	N/A	2881	Perm	N/A	2881
			W7r	Wetland	Palustrine Scrub Shrub (PSS)	40.4138	-78.862	Excavation	WETLAND	Other	Temp	N/A	N/A	N/A	1759	Perm	N/A	1759
			W8r	Wetland	Palustrine Scrub Shrub (PSS)	40.4141	-78.8618	Excavation	WETLAND	Other	Temp	N/A	N/A	N/A	599	Perm	N/A	599
			W9r	Wetland	Palustrine Scrub Shrub (PSS)	40.4148	-78.8618	Excavation	WETLAND	Other	Temp	N/A	N/A	N/A	8901	Perm	N/A	8901
			N20	Wetland	Paulstine Emergent (PEM)	40.4154	-78.8625	Fill	WETLAND	Other	Temp	N/A	N/A	N/A	195	Temp	N/A	195
			O35	Wetland	Palustrine Scrub Shrub (PSS)	40.4156	-78.8606	Excavation	WETLAND	Other	Temp	N/A	N/A	N/A	840	Perm	N/A	840
			S1r	Stream	Perennial	40.415	-78.8726	Excavation	UNT to Hinckston Run	Drains to CWF	Temp	3	58	174	N/A	Perm	5898	N/A
			S1r	Stream	Perennial	40.415	-78.8726	Excavation	UNT to Hinckston Run	Drains to CWF	Temp	3	14	42	N/A	Temp	2185	N/A
			S2r	Stream	Intermittent	40.4134	-78.8694	Excavation	UNT to Hinckston Run	Drains to CWF	Temp	1	38	38	N/A	Perm	5522	N/A
			S2r	Stream	Intermittent	40.4134	-78.8694	Fill	UNT to Hinckston Run	Drains to CWF	Temp	1	46	46	N/A	Temp	5488	N/A
			S3r	Stream	Intermittent	40.4135	-78.8629	Excavation	UNT to Hinckston Run	Drains to CWF	Temp	10	9	90	N/A	Perm	N/A	N/A
			S4r	Stream	Perennial	40.4137	-78.8624	Excavation	Hinckston Run	CWF	Temp	30	52	1560	N/A	Perm	N/A	N/A
			S6r	Stream	Intermittent	40.414	-78.8622	Excavation	UNT to Hinckston Run	Drains to CWF	Temp	10	61	610	N/A	Perm	N/A	N/A
			S7r	Stream	Perennial	40.4147	-78.862	Excavation	UNT to Hinckston Run	CWF	Temp	10	52	520	N/A	Perm	8067	N/A
			S7r	Stream	Perennial	40.4147	-78.862	Fill	UNT to Hinckston Run	CWF	Temp	N/A	N/A	N/A	N/A	Temp	1056	N/A
			S-N35	Stream	Intermittent	40.4156	-78.861	Excavation	UNT to Hinckston Run	Drains to CWF	Temp	2	7	14	N/A	Perm	N/A	N/A
			S-O43	Stream	Intermittent	40.4156	-78.8603	Excavation	UNT to Hinckston Run	Drains to CWF	Temp	1	64	64	N/A	Perm	N/A	N/A
			S-O44	Stream	Perennial	40.4156	-78.8609	Excavation	UNT to Hinckson Run	CWF	Temp	5	282	1410	N/A	Perm	N/A	N/A

Aquatic Resource Impact Table

Applicant's Name / Client: Sunoco Pipeline LP

			S3r, S4r, S5r, S6r Ch. 105 Area	Stream	Floodway	40.4137	-78.8624	Excavation	UNT to Hinckson Run; Hinckston Run; UNT to Hinckson Run; UNT to Hinckson Run	Drains to CWF; CWF; Drains to CWF; Drains to CWF	N/A	N/A	N/A	N/A	N/A	Perm	13555	N/A
			S3r, S4r, S5r, S6r Ch. 105 Area	Stream	Floodway	40.4137	-78.8624	Fill	UNT to Hinckson Run; Hinckston Run; UNT to Hinckson Run; UNT to Hinckson Run	Drains to CWF; CWF; Drains to CWF; Drains to CWF	N/A	N/A	N/A	N/A	N/A	Temp	2927	N/A
			S-O43, S-O44, S-N35 Ch 105 Area	Stream	Floodway	40.4156	-78.8609	Excavation	UNT to Hinckson Run; UNT to Hinckson Run; UNT to Hinckson Run	Drains to CWF; CWF; Drains to CWF	N/A	N/A	N/A	N/A	N/A	Perm	23404	N/A
			S-O43, S-O44, S-N35 Ch 105 Area	Stream	Floodway	40.4156	-78.8609	Fill	UNT to Hinckson Run; UNT to Hinckson Run; UNT to Hinckson Run	Drains to CWF; CWF; Drains to CWF	N/A	N/A	N/A	N/A	N/A	Temp	1036	N/A
			Pond O2	Wetland	Palustrine Open Water (POW)	40.4154	-78.8602	Excavation	WETLAND	Other	Temp	N/A	N/A	N/A	269	Perm	N/A	269
			Pond O2	Wetland	Palustrine Open Water (POW)	40.4154	-78.8602	Fill	WETLAND	Other	Temp	N/A	N/A	N/A	103	Temp	N/A	103

ATTACHMENT F

Proof of PHMC Coordination

Survey Detail

Main | Location | Administration | Links | WorkFlow Communication

WorkFlow Comments * Required Only For Return Action

Action By	Action	Action Date	Comment
Peltier, Robert	Submit	1/22/2019 2:47:42 PM	
Peltier, Robert	Submit	1/22/2019 2:48:02 PM	

Records: 1 - 2 of 2 - Pages: 1

Pennsylvania State Historic Preservation Office
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION

Negative Survey Form

(This form may be used if the Phase I guidelines have been followed and no cultural resources have been identified.)

1. Project Identification:

ER Number 2013-1862-042

Project Name &/or Agency Tracking #: Pennsylvania Pipeline Project

Agency: PADEP **Applicant:** Tetra Tech

Preparers Name and affiliation: Robert Peltier

Date Prepared: 01.17.19

Project Area County/Municipality (list all)

County	Municipality
Cambria County	Jackson Twp.

2. Project Setting: (check all that apply)

☐ urban/suburban; ☒ rural
☒ upland; ☐ floodplain/terrace (☐active; ☐stable terrace)

7.5" USGS Quadrangle(s) Name (list all):

Name	Date
Nanty-Glo, Vintondale	1981

Physiographic Zone(s)(list All. Use DCNR Map 13 compiled by W.D. Sevon, Fourth Edition, 2000.):

Physiographic Zone
Allegheny Mountain Section

Project Area Drainage(s), (list all) (Sub-basin and Watershed can be obtained from CRGIS):

Sub-basin	Watershed	Major Stream	Minor Stream
18	D	Conemaugh River	Hinckston Run

3. Basic Field Conditions:

(Text fields will expand as needed. Please be complete)

Area of APE / Project Area in hectares: 9.6 ha Hectares tested: 4.0 ha

General Description of APE / Project Area: Survey corridor approx 1680 m length and 60 m width

Type of Proposed Project / Impact: Pipeline Construction

Date of field investigation(s): Dec. 4th - 6th 2018

Description of Field Conditions including percentage of surface visibility:
Wooded slopes and open fields. Zero percent surface visibility. Cold with light snow cover.

4. Previously Recorded Archaeological Sites within APE / Project Area and not relocated by this project:

PASS Site Number	Reason not re-located

5. Survey Methodology: (check all that apply to the entire project; attach any supporting documents)

☐ PASS file Research ☐ Contacted Local Historical Association/Commission/Park/Etc.
☐ Informant Data ☐ Historic Records/Maps/Photos ☐ SCS Soil Maps
☐ Surface Survey ☐ Geomorphological Borings ☒ STPs
☐ Test Units ☐ Geomorphological Trenches ☐ Remote Sensing
Other: Pedestrian Walkover Survey

Professional Geomorphologist was ☐Present or ☒ Not Present During Field Investigations

Name: _____ Affiliation: _____

Formal Geomorphological Report Prepared: ☐ Yes ☒ No

6. Results: (Describe both the design and the results of every methodology checked in **5.** Include the size and condition of the area tested by each.)

No cultural resources identified. See details in paragraph below.

7. Statewide Pre-Contact Probability Model Analysis: (Use the model from CRGIS to determine portions of the project area that were located within each sensitivity tier and list all testing methods used within each tier. If more than one method was used, estimate the percentage of the tier tested by each method. In the Sites Located section, include Isolated Finds for which a number is assigned.)

Sensitivity Tier	Area within this Tier	Percent of Total Project Area	Method(s) Used to test this tier (Use list from 5 above. Include % if multiple.)	Number of Sites Located
High	2242 sq. m.	2 %	Shovel Test 15m interval	0
Moderate	21508 sq. m.	22 %	Shovel Test 15m interval	0
Low	73223 sq. m.	76 %	Shovel Test 30m interval and Pedestrian Walkover Survey	0

8. Required Attachments:

☒ 7.5' USGS Quadrangle Map delineating APE / Project Area
☒ Project map showing testing strategy(ies)
☒ Testing strategy justification / predictive model
☒ Supporting photographs with descriptions of view and view direction
☐ Engineering / Project Plans if prepared
☐ Geomorphological Report if prepared
☒ Representative excavation profiles and descriptions

List all other attachments to this Negative Survey Form:

Attachment Type
Attachment A – Archaeological investigations Map
Attachment B – Project Location on USGS Map
Attachment C – Typical Soil Profile
Attachment D – Project Photographs

ER 2013-1862-042
GOLDFINCH REROUTE PROJECT DESCRIPTION AND SURVEY RESULTS
JACKSON TOWNSHIP, CAMBRIA COUNTY

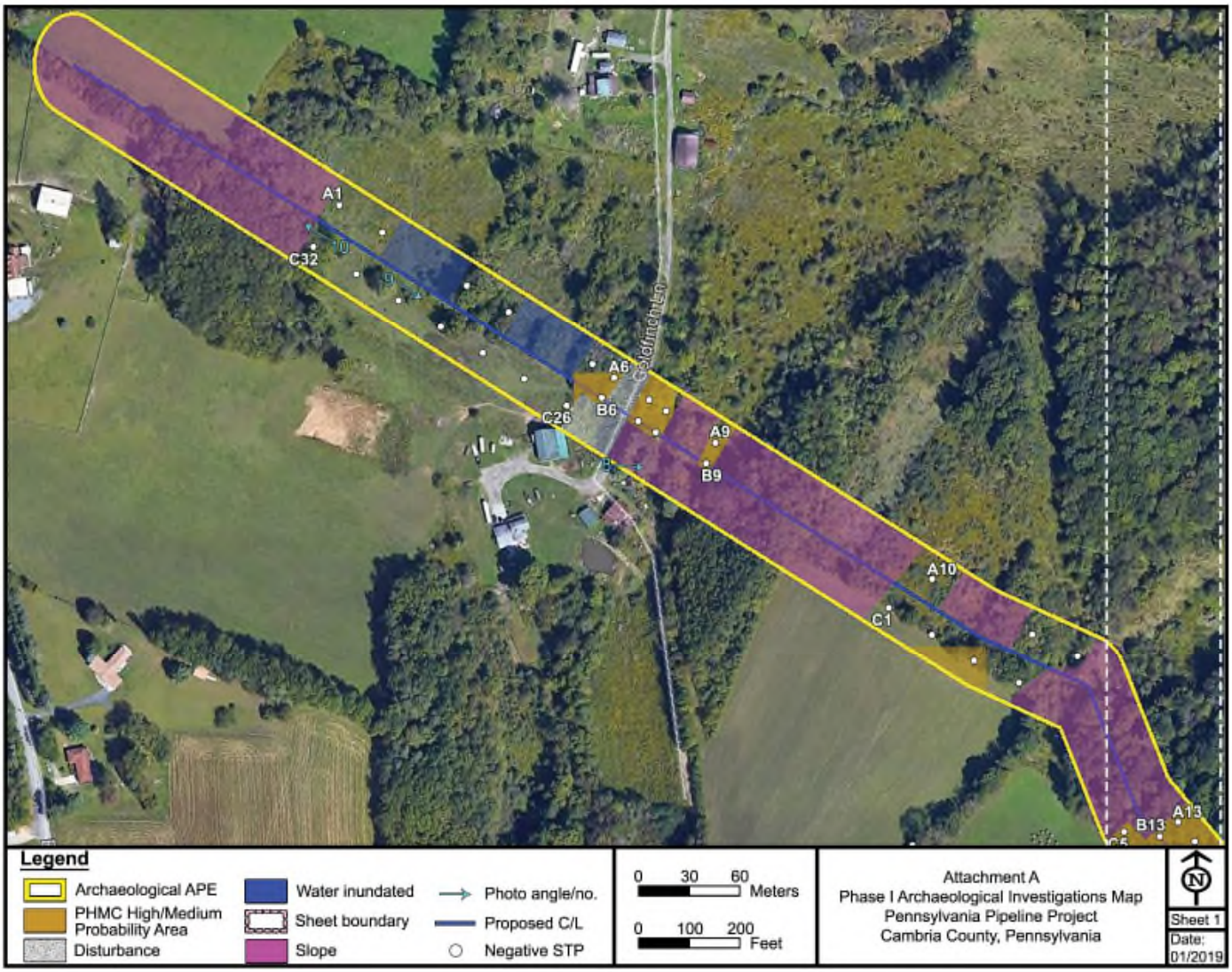
This modification is being requested for a change in installation method from a HDD to an open cut installation. The open cut will consist of approximately 1,680 meters (m) (5,510 feet [ft]) of trenching and pipeline installation across wooded uplands and fields as well as wetland areas and an open cut across Hinckston Run, Jackson Township, Cambria County.

An archaeological field survey was performed at the modification area between December 4 and 6, 2018. The area subject to archaeological survey measures 1,680 m (5,510 ft) in length and 60 m (200 ft) width, totaling approximately 9.6 hectares (23.7 acres). The new alignment crosses a series of upland fields and forests, and cuts through two wetland areas and crosses one unnamed stream and Hinckston Run. The Statewide Pre-Contact Probability Model was applied to the survey area. Those areas determined to have moderate to high potential of containing precontact sites were shovel tested at 15 m intervals while those with low probability were shovel tested at 30 m intervals. Shovel tested areas comprised approximately 42 percent of the total survey area. Areas of excessive slope and wetlands or disturbance were subject to pedestrian walkover survey only, which comprised of approximately 58 percent of the survey area. A total of 86 shovel tests were excavated across the survey area. Typical upland soil profiles consisted of a 10YR 4/4 dark yellowish brown silty loam Ap-horizon, 25 to 30 centimeters (cm) thick overlaying a 10YR 5/8 yellowish brown clayey loam B-horizon. Some shovel tests, particularly those close to wetlands, displayed three strata typically consisting of 10YR 3/2 very dark gray brown silty loam Ao-horizon, 10 cm thick, overlaying a 10YR 5/4 yellowish brown silty loam A-horizon to approximately 20 cm depth. Beneath, a hydric 10YR 5/8 yellowish brown silty clay loam B-horizon was encountered. Some of the low ground between Hinckston Run and the existing pipeline corridor at the eastern end of the reroute has been disturbed by efforts to drain the wetlands by cutting a series of channels draining into the creek. Spoil piles of soil were noted throughout the woods. Areas of excessive slope and wetlands were subject to pedestrian walkover survey.

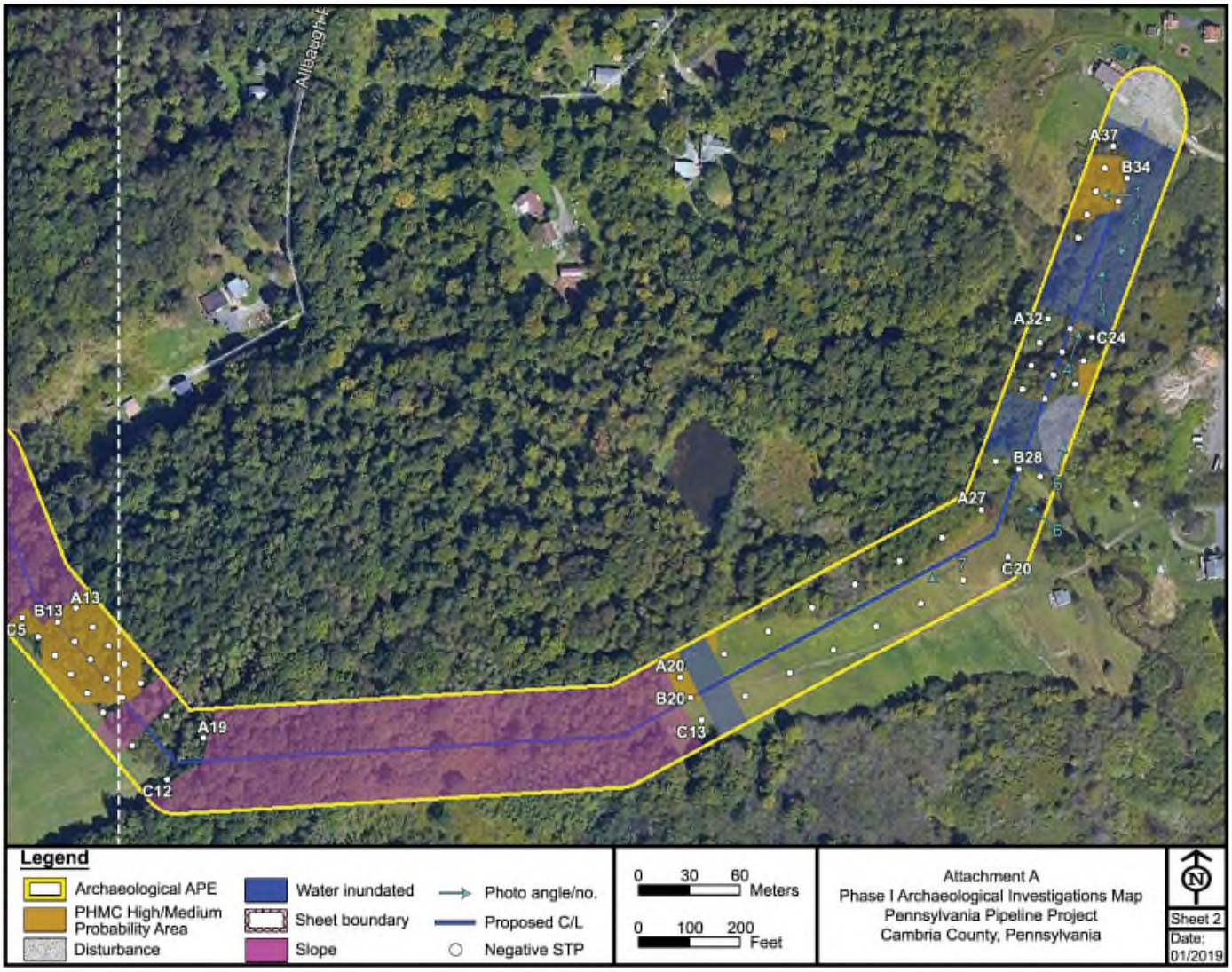
No cultural material was identified in the excavated shovel tests and nothing of cultural interest was identified during the pedestrian walkover survey. The proposed construction modification will have no adverse effects on any cultural resources.

Attachment A includes aerial mapping showing the results of the archaeological survey. Attachment B depicts the survey location on a USGS topographic map. Attachment C offers typical shovel test profiles encountered during the survey and Attachment D offers representative photographs of the project area.

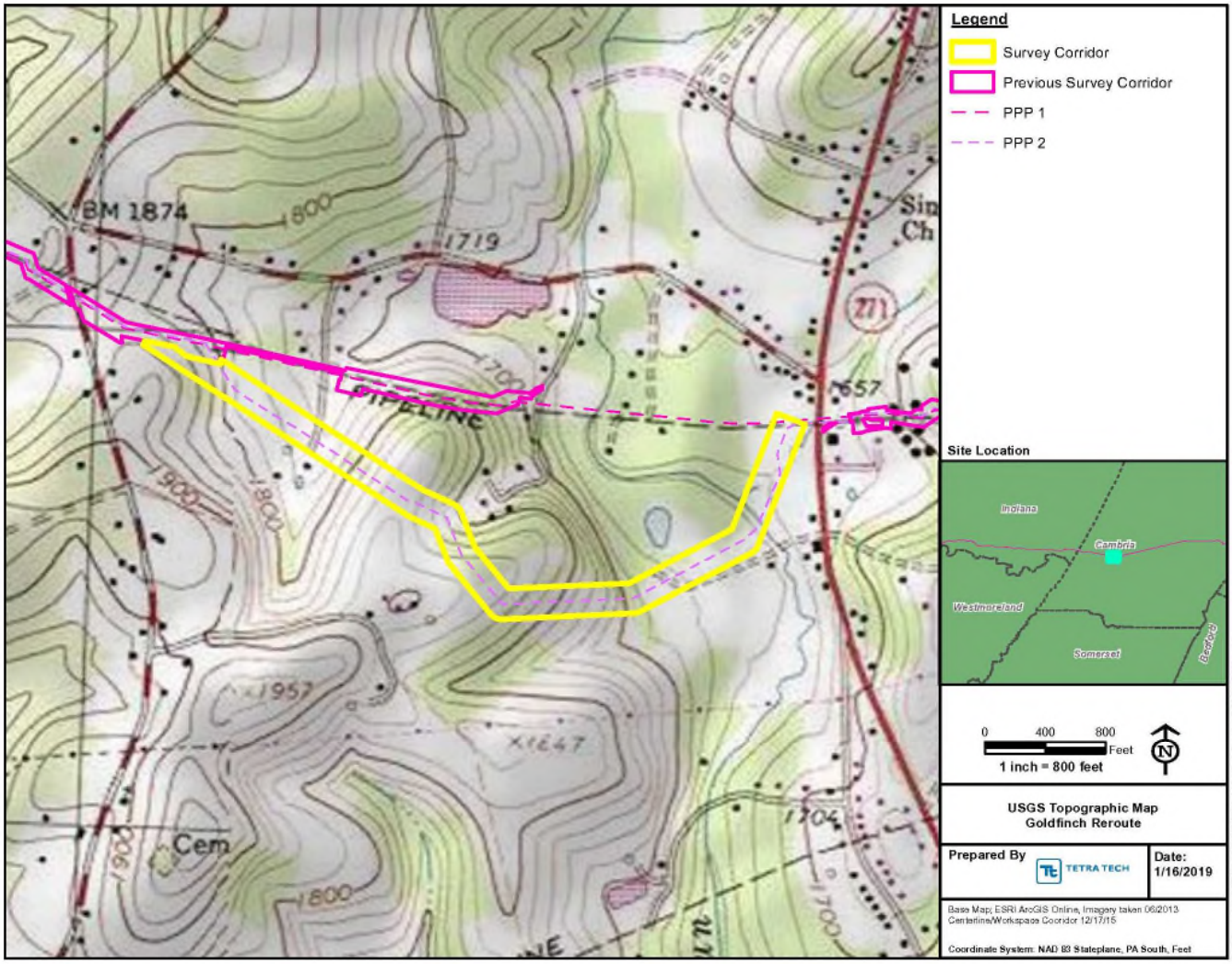
Attachment A: Archaeological Investigations. Map 1 of 2.



Attachment A: Archaeological Investigations. Map 2 of 2.

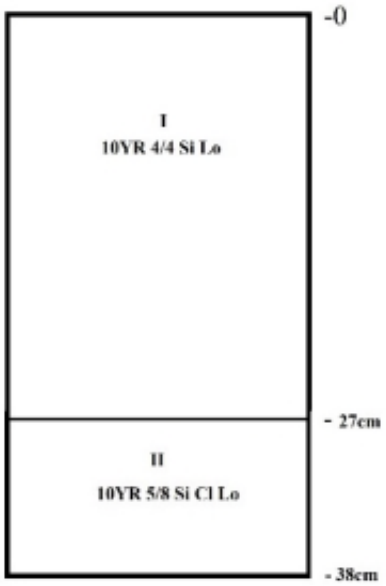


Attachment B: Project Location on USGS Topo Map

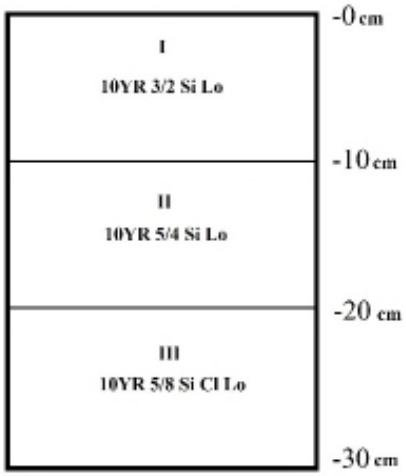


Attachment C: TYPICAL SHOVEL TEST PROFILES

Shovel Test C-27



Shovel Test A-13



Attachment D: PROJECT PHOTOGRAPHS

Photo 1: Moderate/High probability area adjacent to Hinckston Run. Area tested at 15-meter interval. Facing west.

Photo 2: Moderate/High probability area adjacent to Hinckston Run and wetlands. Area tested at 15-meter interval. Facing southwest.

Photo 3: Wooded Moderate/High probability area near Hinckston Run. Area tested at 15-meter interval. Facing north.

Photo 4: Disturbed and wet area with channelized drainages cut to dry the wetlands, adjacent to Hinckston Run. Facing north.

Photo 5: Disturbed wooded wetland area requiring no testing. Note push piles in background. Facing north.

Photo 6: Shovel tested terrace (15-meter interval) next to Hinckston Run. Facing northwest

Photo 7: Large open field tested at low probability (30-meter interval). Facing southwest.

Photo 8: Area not tested due to disturbed ground, deep fill, and modern junk and scrap. Facing northeast.

Photo 9: Moderate/High probability area (pasture) tested at 15-meter interval. Facing east.

Photo 10: Sloped hillside requiring no shovel testing at west end of reroute. Facing west.

ATTACHMENT G

PNDI Update
&
Agency Coordination

1. PROJECT INFORMATION

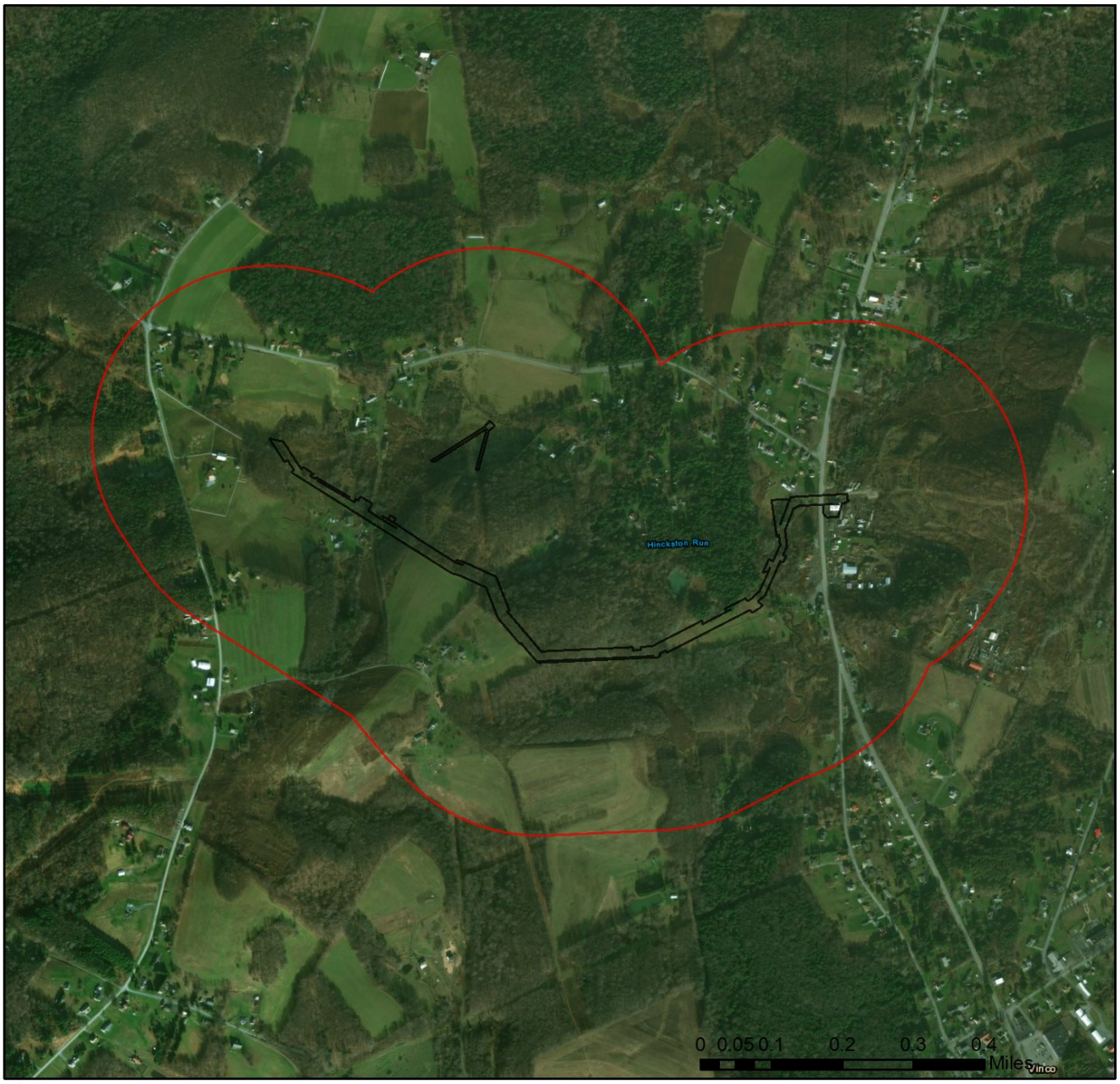
Project Name: **Mariner East 2 Goldfinch Reroute**
Date of Review: **1/17/2019 12:21:49 PM**
Project Category: **Energy Storage, Production, and Transfer, Energy Transfer, Pipeline (e.g., gas, oil) -- NEW (construction of new line in a new location)**
Project Area: **11.38 acres**
County(s): **Cambria**
Township/Municipality(s): **JACKSON**
ZIP Code: **15909**
Quadrangle Name(s): **NANTY GLO; VINTONDALE**
Watersheds HUC 8: **Conemaugh**
Watersheds HUC 12: **Hinckston Run-Conemaugh River**
Decimal Degrees: **40.412805, -78.863900**
Degrees Minutes Seconds: **40° 24' 46.997" N, 78° 51' 50.414" W**

2. SEARCH RESULTS

Agency	Results	Response
PA Game Commission	No Known Impact	No Further Review Required
PA Department of Conservation and Natural Resources	No Known Impact	No Further Review Required
PA Fish and Boat Commission	No Known Impact	No Further Review Required
U.S. Fish and Wildlife Service	No Known Impact	No Further Review Required

As summarized above, Pennsylvania Natural Diversity Inventory (PNDI) records indicate no known impacts to threatened and endangered species and/or special concern species and resources within the project area. Therefore, based on the information you provided, no further coordination is required with the jurisdictional agencies. This response does not reflect potential agency concerns regarding impacts to other ecological resources, such as wetlands.

Mariner East 2 Goldfinch Reroute

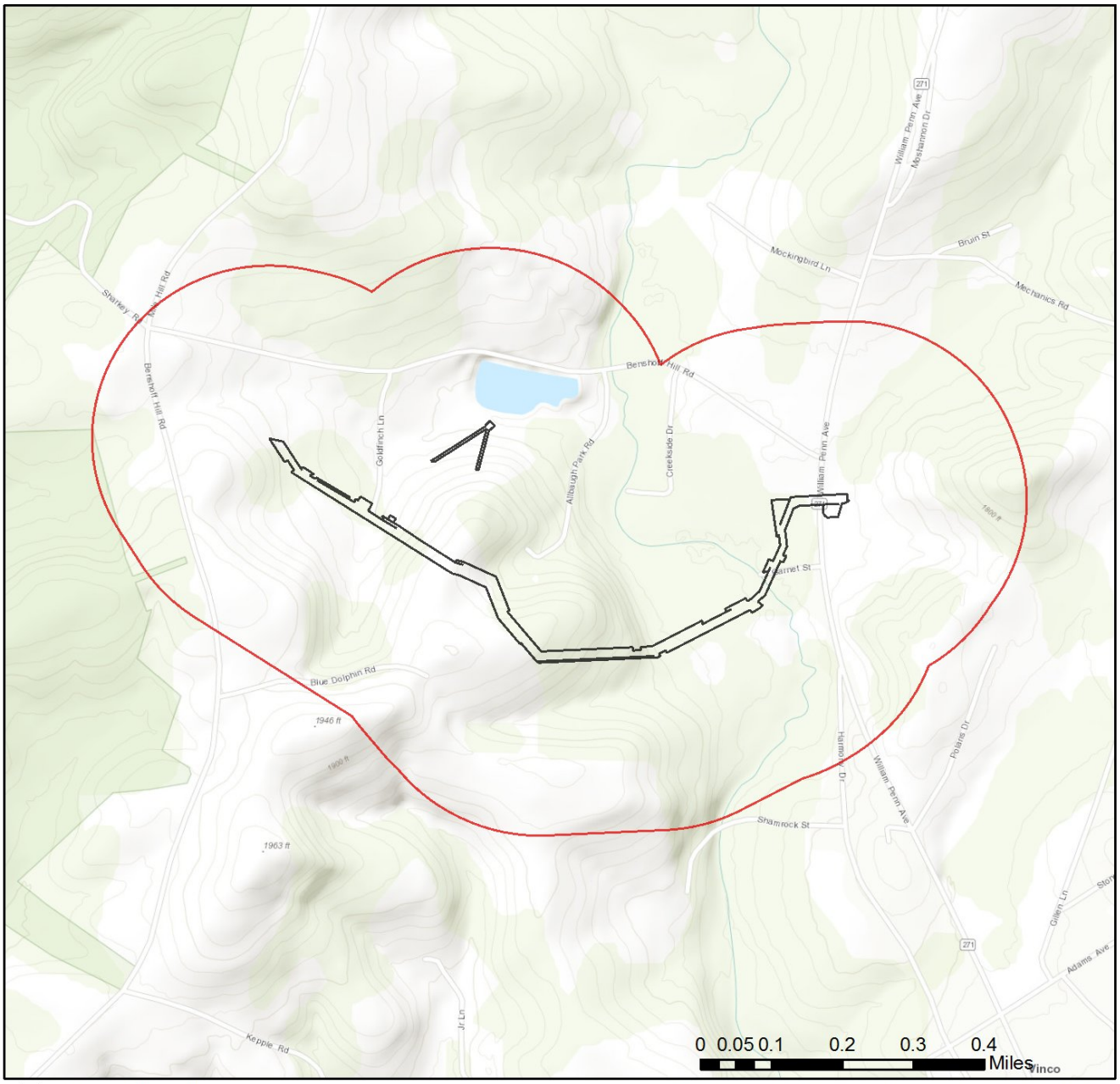


Project Boundary

Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community

Mariner East 2 Goldfinch Reroute



Project Boundary

Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS,

RESPONSE TO QUESTION(S) ASKED

Q1: The proposed project is in the range of the Indiana bat. Describe how the project will affect bat habitat (forests, woodlots and trees) and indicate what measures will be taken in consideration of this. Round acreages up to the nearest acre (e.g., 0.2 acres = 1 acre).
Your answer is: The project will affect 1 to 39 acres of forests, woodlots and trees.

Q2: Is tree removal, tree cutting or forest clearing of 40 acres or more necessary to implement all aspects of this project?
Your answer is: No

3. AGENCY COMMENTS

Regardless of whether a DEP permit is necessary for this proposed project, any potential impacts to threatened and endangered species and/or special concern species and resources must be resolved with the appropriate jurisdictional agency. In some cases, a permit or authorization from the jurisdictional agency may be needed if adverse impacts to these species and habitats cannot be avoided.

These agency determinations and responses are **valid for two years** (from the date of the review), and are based on the project information that was provided, including the exact project location; the project type, description, and features; and any responses to questions that were generated during this search. If any of the following change: 1) project location, 2) project size or configuration, 3) project type, or 4) responses to the questions that were asked during the online review, the results of this review are not valid, and the review must be searched again via the PNDI Environmental Review Tool and resubmitted to the jurisdictional agencies. The PNDI tool is a primary screening tool, and a desktop review may reveal more or fewer impacts than what is listed on this PNDI receipt. The jursidictional agencies **strongly advise against** conducting surveys for the species listed on the receipt prior to consultation with the agencies.

PA Game Commission
RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Department of Conservation and Natural Resources
RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

PA Fish and Boat Commission
RESPONSE:

No Impact is anticipated to threatened and endangered species and/or special concern species and resources.

U.S. Fish and Wildlife Service
RESPONSE:

No impacts to **federally** listed or proposed species are anticipated. Therefore, no further consultation/coordination under the Endangered Species Act (87 Stat. 884, as amended; 16 U.S.C. 1531 et seq. is required. Because no take of federally listed species is anticipated, none is authorized. This response does not reflect potential Fish and Wildlife Service concerns under the Fish and Wildlife Coordination Act or other authorities.

4. DEP INFORMATION

The Pa Department of Environmental Protection (DEP) requires that a signed copy of this receipt, along with any required documentation from jurisdictional agencies concerning resolution of potential impacts, be submitted with applications for permits requiring PNDI review. Two review options are available to permit applicants for handling PNDI coordination in conjunction with DEP's permit review process involving either T&E Species or species of special concern. Under sequential review, the permit applicant performs a PNDI screening and completes all coordination with the appropriate jurisdictional agencies prior to submitting the permit application. The applicant will include with its application, both a PNDI receipt and/or a clearance letter from the jurisdictional agency if the PNDI Receipt shows a Potential Impact to a species or the applicant chooses to obtain letters directly from the jurisdictional agencies. Under concurrent review, DEP, where feasible, will allow technical review of the permit to occur concurrently with the T&E species consultation with the jurisdictional agency. The applicant must still supply a copy of the PNDI Receipt with its permit application. The PNDI Receipt should also be submitted to the appropriate agency according to directions on the PNDI Receipt. The applicant and the jurisdictional agency will work together to resolve the potential impact(s). See the DEP PNDI policy at https://conservationexplorer.dcnr.pa.gov/content/resources.

5. ADDITIONAL INFORMATION

The PNDI environmental review website is a preliminary screening tool. There are often delays in updating species status classifications. Because the proposed status represents the best available information regarding the conservation status of the species, state jurisdictional agency staff give the proposed statuses at least the same consideration as the current legal status. If surveys or further information reveal that a threatened and endangered and/or special concern species and resources exist in your project area, contact the appropriate jurisdictional agency/agencies immediately to identify and resolve any impacts.

For a list of species known to occur in the county where your project is located, please see the species lists by county found on the PA Natural Heritage Program (PNHP) home page (www.naturalheritage.state.pa.us). Also note that the PNDI Environmental Review Tool only contains information about species occurrences that have actually been reported to the PNHP.

6. AGENCY CONTACT INFORMATION

PA Department of Conservation and Natural Resources
Bureau of Forestry, Ecological Services Section
400 Market Street, PO Box 8552
Harrisburg, PA 17105-8552
Email: RA-HeritageReview@pa.gov

U.S. Fish and Wildlife Service
Pennsylvania Field Office
Endangered Species Section
110 Radnor Rd; Suite 101
State College, PA 16801
NO Faxes Please

PA Fish and Boat Commission
Division of Environmental Services
595 E. Rolling Ridge Dr., Bellefonte, PA 16823
Email: RA-FBPACENOTIFY@pa.gov

PA Game Commission
Bureau of Wildlife Habitat Management
Division of Environmental Planning and Habitat Protection
2001 Elmerton Avenue, Harrisburg, PA 17110-9797
Email: RA-PGC_PNDI@pa.gov
NO Faxes Please

7. PROJECT CONTACT INFORMATION

Name: Elizabeth Norment
Company/Business Name: Tetra Tech
Address: 301 Ellicott St.
City, State, Zip: Buffalo, NY 14203
Phone: (716) 541-9225 Fax: (716) 849-9420
Email: elizabeth.norment@tetratech.com

8. CERTIFICATION

I certify that ALL of the project information contained in this receipt (including project location, project size/configuration, project type, answers to questions) is true, accurate and complete. In addition, if the project type, location, size or configuration changes, or if the answers to any questions that were asked during this online review change, I agree to re-do the online environmental review.

applicant/project proponent signature

01/18/2019
date

ATTACHMENT H

Application Fee Calculation

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
BUREAU OF WATERWAYS ENGINEERING AND WETLANDS

CHAPTER 105 FEE(S) CALCULATION WORKSHEET

Additional information can be found at 25 PA Code §105.13 (relating to regulated activities – information and fees), the General Permit Registration (3150-PM-BWEW0500), the Joint Permit Application (3150-PM-BWEW0036) and the Dam Permit Application (3140-PM-BWEW0001)

Federal, State, county or municipal agencies or municipal authorities: ☐ **EXEMPT from fees**

These entities are exempt from these fees. If the applicant falls into one of these categories, please check the box above and provide only the first page of this worksheet with the project application or registration.

ALL OTHERS:

1. Please place an "X" in the box next to all authorizations that apply to the project and complete the fee information below those authorization(s). Projects may require multiple authorizations and fees, further clarification and examples are included below and at the end of this document.
2. Total each authorization, Section, and Part. Part One is for Water Obstructions and Encroachment authorizations, Part Two is for Dam Safety authorizations.
3. Please provide this completed worksheet (page 1 and page 2 and/or page 3, as is appropriate to the project) and a check for the applicable fee(s) with the project application or registration. The check should be made payable to the "**Commonwealth of Pennsylvania Clean Water Fund**" OR "**_____ Conservation District Clean Water Fund**", whichever is the reviewing entity.

NOTES:

Per *25 PA Code §105.13(c)(2)(iii)* Disturbance review fees are calculated by individually adding all of the permanent and temporary impacts to waterways, floodways, floodplains and bodies of water including wetlands to the next highest tenth acre and multiplying the permanent and temporary impacts by the respective fees and then these amounts are added to the other applicable fees.

Entities proposing structures or activities to occupy a Submerged Lands of the Commonwealth must obtain a Submerged Lands License Agreement (SLLA) and pay the appropriate annual charge. The applicant will be contacted if this charge applies to the project.

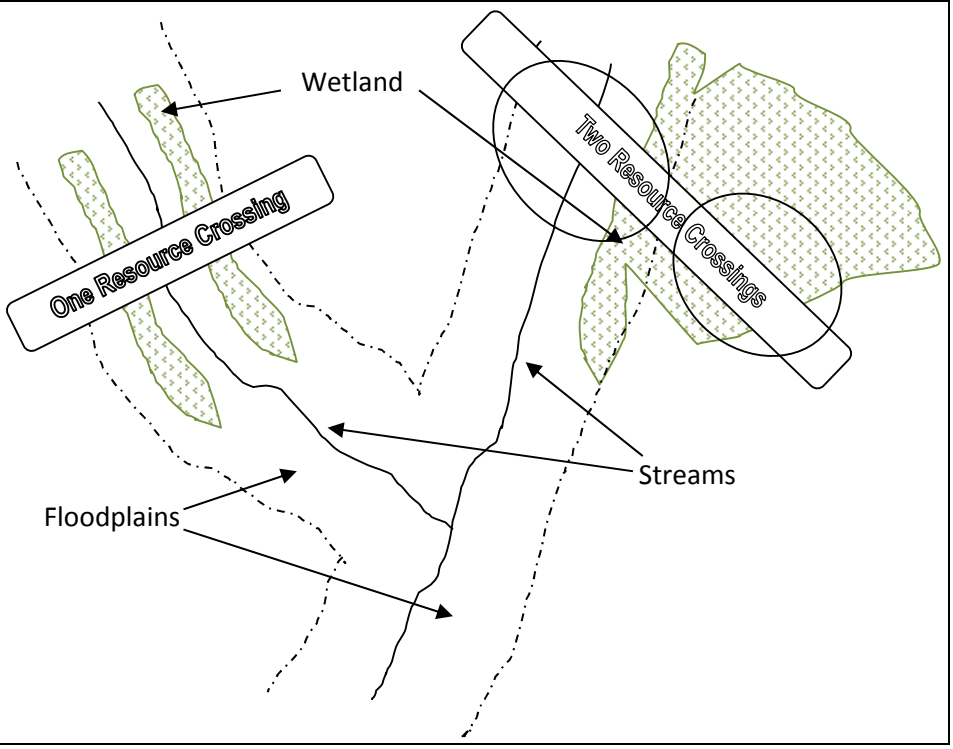
Floodway – The channel of the watercourse and portions of the adjoining floodplains which are reasonably required to carry and discharge the 100-year frequency flood. Unless otherwise specified, the boundary of the floodway is as indicated on maps and flood insurance studies provided by FEMA. In an area where no FEMA maps or studies have defined the boundary of the 100-year frequency floodway, it is assumed, absent evidence to the contrary, that the floodway extends from the stream to 50 feet from the top of the bank of the stream.

Wetland and Stream Clarification:

[1] In many instances, wetlands are located within the floodplain of a stream. These resources for the purposes of calculating disturbance fees are considered co-located or overlapping and the area of disturbance would only be used once.

[2] In the case of GP-5, GP-7 and GP-8 fees are charged per structure per resource crossing and the following also applies to the disturbance fees:

- A crossing of the stream and the floodplain with wetlands present within the floodplain is considered one resource crossing.
- When the crossing traverses a stream and the floodplain and a wetland that is located outside of the floodplain or a wetland that extends out beyond the floodplain, it is considered two resource crossings.



PART ONE: WATER OBSTRUCTIONS AND ENCROACHMENTS

SECTION A. APPLICATION FEES

☐ **WATER OBSTRUCTION AND ENCROACHMENT PERMIT** (Joint Permit Application)
Some activities or structures within a project may also qualify for an accumulation of General Permit fees, please mark the box above indicating an Individual Water Obstruction and Encroachment Permit AND the corresponding fee(s) in the General Permit section below those. Activities or structures not qualifying for a General Permit fee must include a disturbance fee.

☐ Administrative Filing Fee[1]			$ 1,750	+
☐ Temporary Disturbance ($400/0.1ac)	_____.____	acres x $4,000 =	$ _____	+
☐ Permanent Disturbance ($800/0.1ac)	_____.____	acres x $8,000 =	$ _____	= $ _____
		WO&E FEE subtotal (a)		$ _____

☐ **GENERAL PERMIT(S)** (select activity/structure(s) below, see page 4 for "#" explanation)
Some activities or structures within a project requiring an Individual Water Obstruction and Encroachment Permit may qualify for an accumulation of General Permit fees, please mark the corresponding fee(s) below but not the box above indicating a General Permit.

☐ GP-1 Fish Habitat Enhancement Structures			$ 50	= $ _____
☐ GP-2 Small Docks and Boat Launching Ramps	_____ (#) x		$ 175	= $ _____
☐ GP-3 Bank Rehabilitation, Bank Protection and Gravel Bar Removal	_____ (#) x		$ 250	= $ _____
☐ GP-4 Intake and Outfall Structures	_____ (#) x		$ 200	= $ _____
☐ GP-5 Utility Line Stream Crossings[2]	_____ (#) x	_____ (#) x	$ 250	= $ _____
☐ GP-6 Agricultural Crossings and Ramps	_____ (#) x		$ 50	= $ _____
☐ GP-7 Minor Road Crossings[2]	_____ (#) x		$ 350	= $ _____
☐ GP-8 Temporary Road Crossings[2]	_____ (#) x		$ 175	= $ _____
☐ GP-9 Agricultural Activities			$ 50	= $ _____
☐ GP-10 Abandoned Mine Reclamation			$ 500	= $ _____
☐ GP-11 Maintenance, Testing, Repair, Rehabilitation, or Replacement of Water Obstructions and Encroachments[1]			$ 750	+
☐ Temporary Disturbance ($400/0.1ac)	_____.____	acres x $4,000 =	$ _____	+
☐ Permanent Disturbance ($800/0.1ac)	_____.____	acres x $8,000 =	$ _____	= $ _____
☐ GP-15 Private Residential Construction in Wetlands[1]			$ 750	+
☐ Temporary Disturbance ($400/0.1ac)	_____.____	acres x $4,000 =	$ _____	+
☐ Permanent Disturbance ($800/0.1ac)	_____.____	acres x $8,000 =	$ _____	= $ _____
		GP(s) FEE subtotal (b)		$ _____

PART ONE: SECTION A. APPLICATION FEE(S) subtotal (a+b=c) $ _____

SECTION B. OTHER FEES

☐ Environmental Assessment for Waived Activities (§105.13(c)(2)(iv))			$ 500	$ _____
☒ Amendment to Water Obstruction and Encroachment Permit				
☒ Major Amendment[1]			$ 500	+
☒ Temporary Disturbance	0.4	acres x $4,000 =	$ 1,600	+ $ 2,100
☒ Permanent Disturbance	2.1	acres x $8,000 =	$ 16,800	= $ 18,900
☐ Minor Amendment			$ 250	$ _____

Transfer of Water Obstruction and Encroachment Permit *does not require submission of this form; see* *Application for Transfer of Permit / Submerged Lands License Agreement (3150-PM-BWEW-0016)*

PART ONE: SECTION B. OTHER FEE(S) subtotal (d) $ 18,900

PART ONE: FEE(S) TOTAL (c+d=e) $ 18,900

DEP USE ONLY			
FEE TOTAL:	_____	Permit / Authorization Number (s):	_____
Correct Amount:	_____	Check #: _____	_____
Check Amount:	_____	Payable to: _____	_____

PART TWO: DAM SAFETY (USE ONE FEE SHEET PER DAM)

SECTION A. APPLICATION FEES

☐ **DAM PERMIT APPLICATION – NEW DAM**

☐ Size A	☐ Hazard 1 $26,500	☐ Hazard 2 $26,500	☐ Hazard 3 $25,500	☐ Hazard 4 $23,500	$ _____
☐ Size B	☐ Hazard 1 $19,000	☐ Hazard 2 $19,000	☐ Hazard 3 $18,500	☐ Hazard 4 $17,000	$ _____
☐ Size C	☐ Hazard 1 $10,500	☐ Hazard 2 $10,500	☐ Hazard 3 $10,000	☐ Hazard 4 $ 8,000	$ _____

☐ **STAGED CONSTRUCTION**

NO. OF STAGES BEYOND INITIAL STAGE _____ X APPLICATION FEE _____ X 0.90 (90%) $ _____

☐ **DAM PERMIT APPLICATION – MODIFICATION OF DAM**

☐ Size A	☐ Hazard 1 $18,500	☐ Hazard 2 $18,500	☐ Hazard 3 $18,500	☐ Hazard 4 $18,000	$ _____
☐ Size B	☐ Hazard 1 $12,000	☐ Hazard 2 $12,000	☐ Hazard 3 $12,000	☐ Hazard 4 $11,500	$ _____
☐ Size C	☐ Hazard 1 $ 7,500	☐ Hazard 2 $ 7,500	☐ Hazard 3 $ 7,500	☐ Hazard 4 $ 7,500	$ _____

☐ **STAGED CONSTRUCTION**

NO. OF STAGES BEYOND INITIAL STAGE _____ X APPLICATION FEE _____ X 0.85 (85%) $ _____

☐ **DAM PERMIT APPLICATION – OPERATION & MAINTANANCE OF EXISTING DAM**

☐ Size A	☐ Hazard 1 $12,500	☐ Hazard 2 $12,500	☐ Hazard 3 $12,000	☐ Hazard 4 $10,000	$ _____
☐ Size B	☐ Hazard 1 $10,000	☐ Hazard 2 $10,000	☐ Hazard 3 $ 9,500	☐ Hazard 4 $ 8,500	$ _____
☐ Size C	☐ Hazard 1 $ 7,000	☐ Hazard 2 $ 7,000	☐ Hazard 3 $ 6,500	☐ Hazard 4 $ 6,000	$ _____

PART TWO: SECTION A. APPLICATION FEE(S) subtotal (a) $ _____

SECTION B. OTHER FEES

☐ Letter of Amendment or Authorization

☐ Major (≥$250,000)

☐ Size A $14,700 ☐ Size B $ 8,700 ☐ Size C $ 4,400 $ _____

☐ Minor (<$250,000)

☐ Size A $ 1,300 ☐ Size B $ 1,000 ☐ Size C $ 650 $ _____

☐ Major Dam Design Revision

☐ Size A $ 4,700 ☐ Size B $ 3,200 ☐ Size C $ 1,700 $ _____

☐ Environmental Assessment

☐ Environmental Assessment for Dam Removal (§105.12(a)(16)) $ 500 $ _____

☐ Non-Jurisdictional Dams $ 900 $ _____

☐ Letter of Amendment or Authorization

☐ Size A $ 1,400 ☐ Size B $ 1,000 ☐ Size C $ 900 $ _____

☐ Transfer of Dam Permit

☐ No Proof of Financial Responsibility $ 550 ☐ Proof of Financial Responsibility $300 $ _____

☐ Annual Registration

☐ Hazard 1 $ 1,500 ☐ Hazard 2 $ 1,500 ☐ Hazard 3 $ 800 $ _____

PART TWO: SECTION B. OTHER FEE(S) subtotal (b) $ _____

PART TWO: FEE(S) TOTAL (a+b=c) $ _____

DEP USE ONLY			
FEE TOTAL:	_____	Permit / Authorization Number (s):	_____
Correct Amount:	_____	Check #: _____	_____
Check amount:	_____	Payable to: _____	_____

ATTACHMENT I

Supplemental Joint Permit Application Information

- **Joint Application Form Landowner List**
- **General Information Form**
- **Act 14 Notifications**
- **Stormwater and Floodplain Management Analysis**

Supplemental Joint Application Form Landowner List

Adjacent Landowner List
Goldfinch Lane HDD Reorute
Major Permit Modification

Parcel ID No.	Landowner Names	Address
34-014. -123.000	TRANTHAM DANIEL ED & ROSE MARY	138 Goldfinch Lane Johnstown, PA 15909
34-014. -180.000	BUYNACK POLLY ANN & WHYSONG PEARL ET AL	Allbaugh Park Road Johnstown, PA 15909
34-014. -180.002	WHYSONG TERRY & PEARL	196 Allbaugh Park Rd. Johnstown, PA 15909
34-014. -103.000	GOLDEN ROD SPORTSMAN ASSN OF	216 Shamrock St. Johnstown, PA 15909
34-014. -141.000	LETIZIA JOHN L	Garnet St. Rear Johnstown, PA 15909
34-014. -142.000	LETIZIA JOHN L	140 Garnet St. Johnstown, PA 15909
34-044. -106.000	LETIZIA JOHN L	William Penn Ave Johnstown, PA 15909
34-044. -105.000	LETIZIA JOHN LOUIS	William Penn Ave Johnstown, PA 15910
34-044. -100.001	LETIZIA JOHN LOUIS	William Penn Ave Johnstown, PA 15909
34-044. -100.000	FARABAUGH MICHAEL P & BOBBI J	2837 William Penn Hwy Johnstown, PA 15909
34-014. -115.000	CPV FAIRVIEW LLC	2862 William Penn Ave Johnstown, PA 15909
34-014. -124.000	GRATA DAVID R & JOANNE C	217217 Goldfinch Lane Johnstown, PA 15909

Supplemental General Information Form

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION

GENERAL INFORMATION FORM – AUTHORIZATION APPLICATION

Before completing this General Information Form (GIF), read the step-by-step instructions provided in this application package. This version of the General Information Form (GIF) must be completed and returned with any program-specific application being submitted to the Department.

Related ID#s (If Known)		DEP USE ONLY
Client ID#	**APS ID#**	Date Received & General Notes
Site ID#	**Auth ID#**	
Facility ID#		

CLIENT INFORMATION

DEP Client ID#	**Client Type / Code** NPACO			
Organization Name or Registered Fictitious Name Sunoco Pipeline L.P.		**Employer ID#** (EIN) 23-3102656	**Dun & Bradstreet ID#** 11-339-2331	
Individual Last Name NA	**First Name**	**MI**	**Suffix**	**SSN**
Additional Individual Last Name NA	**First Name**	**MI**	**Suffix**	**SSN**
Mailing Address Line 1 525 Fritztown Road		**Mailing Address Line 2**		
Address Last Line – City Sinking Spring	**State** PA	**ZIP+4** 19608	**Country** USA	
Client Contact Last Name Gordon	**First Name** Matthew	**MI** L	**Suffix**	
Client Contact Title Senior Director		**Phone** 610-670-3284	**Ext**	
Email Address MLGordon@sunocologistics.com		**FAX**		

SITE INFORMATION

DEP Site ID#	**Site Name** Pennsylvania Pipeline Project - Goldfinch Lane HDD Reroute				
EPA ID# NA	**Estimated Number of Employees to be Present at Site** 0				
Description of Site Installation of an approximately 1.1 mile 16-inch natural gas liquid pipeline through Jackson Township in Cambria County in southwestern PA.					
County Name Cambria	**Municipality** Jackson Township	**City** ☐	**Boro** ☐	**Twp** ☒	**State**
County Name	**Municipality**	**City** ☐	**Boro** ☐	**Twp** ☐	**State**
Site Location Line 1 Refer to Attachment 8 (Location Map)		**Site Location Line 2**			
Site Location Last Line – City		**State**	**ZIP+4**		
Detailed Written Directions to Site The proposed Project site begins approximately 0.1 mile to east of Mile Hill Road and 0.1 mile south of Benshoff Mill Road heading southeast for approximately 0.57 mile; then head northeast towards for approximately 0.43-mile towards the intersection of Benshoff Hill Road and William Penn Avenue (at the edge of a private driveway approximately 0.07 mile northwest of the Garnet Street/William Penn Avenue intersection).					
Site Contact Last Name Gordon	**First Name** Matthew	**MI** L	**Suffix**		
Site Contact Title Senior Director		**Site Contact Firm**			

Mailing Address Line 1	Mailing Address Line 2
525 Fritztown Road	

Mailing Address Last Line – City	State	ZIP+4
Sinking Spring	PA	19608

Phone	Ext	FAX	Email Address
610-670-3284			

NAICS Codes (Two- & Three-Digit Codes – List All That Apply)	6-Digit Code (Optional)
23	493190

Client to Site Relationship

FACILITY INFORMATION

Modification of Existing Facility

		Yes	No
1.	**Will this project modify an existing facility, system, or activity?**	☐	☐
2.	**Will this project involve an addition to an existing facility, system, or activity?**	☐	☐

If "Yes", check all relevant facility types and provide DEP facility identification numbers below.

	Facility Type	DEP Fac ID#		Facility Type	DEP Fac ID#
☐	Air Emission Plant		☐	Industrial Minerals Mining Operation	
☐	Beneficial Use (water)		☐	Laboratory Location	
☐	Blasting Operation		☐	Land Recycling Cleanup Location	
☐	Captive Hazardous Waste Operation		☐	Mine DrainageTrmt/LandRecyProjLocation	
☐	Coal Ash Beneficial Use Operation		☐	Municipal Waste Operation	
☐	Coal Mining Operation		☐	Oil & Gas Encroachment Location	
☐	Coal Pillar Location		☒	Oil & Gas Location	0
☐	Commercial Hazardous Waste Operation		☐	Oil & Gas Water Poll Control Facility	
☐	Dam Location		☐	Oil & Gas Wastewater Storage Impoundment	
☐	Deep Mine Safety Operation -Anthracite		☐	Public Water Supply System	
☐	Deep Mine Safety Operation -Bituminous		☐	Radiation Facility	
☐	Deep Mine Safety Operation -Ind Minerals		☐	Residual Waste Operation	
☐	Encroachment Location (water, wetland)		☐	Storage Tank Location	
☐	Erosion & Sediment Control Facility		☐	Water Pollution Control Facility	
☐	Explosive Storage Location		☐	Water Resource	
			☐	Other:	

Latitude/Longitude Point of Origin	Latitude			Longitude		
	Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
Enters County at	78	52	31	40	25	0.5

Horizontal Accuracy Measure	Feet NA --or-- Meters
Horizontal Reference Datum Code	☐ North American Datum of 1927 ☒ North American Datum of 1983 ☐ World Geodetic System of 1984
Horizontal Collection Method Code	SURVY, GPSDF, GISR
Reference Point Code	CTROD
Altitude	Feet NA --or-- Meters
Altitude Datum Name	☐ The National Geodetic Vertical Datum of 1929 ☐ The North American Vertical Datum of 1988 (NAVD88)
Altitude (Vertical) Location Datum Collection Method Code	
Geometric Type Code	POINT
Data Collection Date	2018 and 2019
Source Map Scale Number	NA Inch(es) = Feet
--or--	Centimeter(s) = Meters

PROJECT INFORMATION

Project Name

Pennsylvania Pipeline Project - Goldfinch Lane HDD Reroute

Project Description

SPLP proposes a Major Modification to the Pennsylvania Pipeline Project within Jackson Township, Cambria County. The modification is for the 16-inch pipeline and includes an approximately 1.1 mile reroute and the elimination of the Horizontal Directional Drill S2-0069-Goldfinch Lane. The reroute will increase the LOD by 10.83 acres and contains several new wetland and stream crossings. The pipeline will be installed using open cut methodology and a conventional bore crossing under Route 271.

Project Consultant Last Name	First Name	MI	Suffix
Schaeffer	Brad		

Project Consultant Title	Consulting Firm
Environmental Project Manager	Tetra Tech, Inc.

Mailing Address Line 1	Mailing Address Line 2
301 Ellicott Street	

Address Last Line – City	State	ZIP+4
	Buffalo	14203

Phone	Ext	FAX	Email Address
716-849-9419	9227	716-849-9420	

Time Schedules	Project Milestone (Optional)

1.	**Have you informed the surrounding community and addressed any concerns prior to submitting the application to the Department?**	☒	Yes	☐	No
2.	**Is your project funded by state or federal grants?**	☐	Yes	☒	No

Note: If "Yes", specify what aspect of the project is related to the grant and provide the grant source, contact person and grant expiration date.
Aspect of Project Related to Grant
Grant Source: _____
Grant Contact Person: _____
Grant Expiration Date: _____

3.	**Is this application for an authorization on Appendix A of the Land Use Policy? (For referenced list, see Appendix A of the Land Use Policy attached to GIF instructions)**	☒	Yes	☐	No

Note: If "No" to Question 3, the application is not subject to the Land Use Policy.
If "Yes" to Question 3, the application is subject to this policy and the Applicant should answer the additional questions in the **Land Use Information** section.

LAND USE INFORMATION

Note: Applicants are encouraged to submit copies of local land use approvals or other evidence of compliance with local comprehensive plans and zoning ordinances.

1.	**Is there an adopted county or multi-county comprehensive plan?**	☒	Yes	☐	No
2.	**Is there an adopted municipal or multi-municipal comprehensive plan?**	☒	Yes	☐	No
3.	**Is there an adopted county-wide zoning ordinance, municipal zoning ordinance or joint municipal zoning ordinance?**	☒	Yes	☐	No

Note: If the Applicant answers "No" to either Questions 1, 2 or 3, the provisions of the PA MPC are not applicable and the Applicant does not need to respond to questions 4 and 5 below.
If the Applicant answers "Yes" to questions 1, 2 and 3, the Applicant should respond to questions 4 and 5 below.

4.	**Does the proposed project meet the provisions of the zoning ordinance or does the proposed project have zoning approval?** If zoning approval has been received, attach documentation.	☒	Yes	☐	No
5.	**Have you attached Municipal and County Land Use Letters for the project?**	☐	Yes	☒	No

COORDINATION INFORMATION

Note: The PA Historical and Museum Commission must be notified of proposed projects in accordance with DEP Technical Guidance Document 012-0700-001 and the accompanying Cultural Resource Notice Form.

If the activity will be a mining project (i.e., mining of coal or industrial minerals, coal refuse disposal and/or the operation of a coal or industrial minerals preparation/processing facility), respond to questions 1.0 through 2.5 below.

If the activity will not be a mining project, skip questions 1.0 through 2.5 and begin with question 3.0.

1.0	**Is this a coal mining project?** If "Yes", respond to 1.1-1.6. If "No", skip to Question 2.0.	☐	Yes	☒	No
1.1	**Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be equal to or greater than 200 tons/day?**	☐	Yes	☐	No
1.2	**Will this coal mining project involve coal preparation/ processing activities in which the total amount of coal prepared/processed will be greater than 50,000 tons/year?**	☐	Yes	☐	No
1.3	**Will this coal mining project involve coal preparation/ processing activities in which thermal coal dryers or pneumatic coal cleaners will be used?**	☐	Yes	☐	No
1.4	**For this coal mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?**	☐	Yes	☐	No
1.5	**Will this coal mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?**	☐	Yes	☐	No
1.6	**Will this coal mining project involve underground coal mining to be conducted within 500 feet of an oil or gas well?**	☐	Yes	☐	No
2.0	**Is this a non-coal (industrial minerals) mining project?** If "Yes", respond to 2.1-2.6. If "No", skip to Question 3.0.	☐	Yes	☒	No
2.1	**Will this non-coal (industrial minerals) mining project involve the crushing and screening of non-coal minerals other than sand and gravel?**	☐	Yes	☐	No
2.2	**Will this non-coal (industrial minerals) mining project involve the crushing and/or screening of sand and gravel with the exception of wet sand and gravel operations (screening only) and dry sand and gravel operations with a capacity of less than 150 tons/hour of unconsolidated materials?**	☐	Yes	☐	No
2.3	**Will this non-coal (industrial minerals) mining project involve the construction, operation and/or modification of a portable non-metallic (i.e., non-coal) minerals processing plant under the authority of the General Permit for Portable Non-metallic Mineral Processing Plants (i.e., BAQ-PGPA/GP-3)?**	☐	Yes	☐	No
2.4	**For this non-coal (industrial minerals) mining project, will sewage treatment facilities be constructed and treated waste water discharged to surface waters?**	☐	Yes	☐	No
2.5	**Will this non-coal (industrial minerals) mining project involve the construction of a permanent impoundment meeting one or more of the following criteria: (1) a contributory drainage area exceeding 100 acres; (2) a depth of water measured by the upstream toe of the dam at maximum storage elevation exceeding 15 feet; (3) an impounding capacity at maximum storage elevation exceeding 50 acre-feet?**	☐	Yes	☐	No

3.0	**Will your project, activity, or authorization have anything to do with a well related to oil or gas production, have construction within 200 feet of, affect an oil or gas well, involve the waste from such a well, or string power lines above an oil or gas well?** If "Yes", respond to 3.1-3.3. If "No", skip to Question 4.0.	☐	Yes	☒	No
3.1	**Does the oil- or gas-related project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water (including wetlands)?**	☐	Yes	☐	No
3.2	**Will the oil- or gas-related project involve discharge of industrial wastewater or stormwater to a dry swale, surface water, ground water or an existing sanitary sewer system or storm water system?** If "Yes", discuss in *Project Description*.	☐	Yes	☐	No
3.3	**Will the oil- or gas-related project involve the construction and operation of industrial waste treatment facilities?**	☐	Yes	☐	No
4.0	**Will the project involve a construction activity that results in earth disturbance?** If "Yes", specify the total disturbed acreage. **4.0.1 Total Disturbed Acreage** 10.83 acres	☒	Yes	☐	No
5.0	**Does the project involve any of the following?** If "Yes", respond to 5.1-5.3. If "No", skip to Question 6.0.	☒	Yes	☐	No
5.1	**Water Obstruction and Encroachment Projects – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a watercourse, floodway or body of water?**	☒	Yes	☐	No
5.2	**Wetland Impacts – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a wetland?**	☒	Yes	☐	No
5.3	**Floodplain Projects by the commonwealth, a Political Subdivision of the commonwealth or a Public Utility – Does the project involve any of the following: placement of fill, excavation within or placement of a structure, located in, along, across or projecting into a floodplain?**	☒	Yes	☐	No
6.0	**Will the project involve discharge of stormwater or wastewater from an industrial activity to a dry swale, surface water, ground water or an existing sanitary sewer system or separate storm water system?**	☐	Yes	☒	No
7.0	**Will the project involve the construction and operation of industrial waste treatment facilities?**	☐	Yes	☒	No
8.0	**Will the project involve construction of sewage treatment facilities, sanitary sewers, or sewage pumping stations?** If "Yes", indicate estimated proposed flow (gal/day). Also, discuss the sanitary sewer pipe sizes and the number of pumping stations/treatment facilities/name of downstream sewage facilities in the *Project Description*, where applicable. **8.0.1 Estimated Proposed Flow (gal/day)**	☐	Yes	☒	No
9.0	**Will the project involve the subdivision of land, or the generation of 800 gpd or more of sewage on an existing parcel of land or the generation of an additional 400 gpd of sewage on an already-developed parcel, or the generation of 800 gpd or more of industrial wastewater that would be discharged to an existing sanitary sewer system?**	☐	Yes	☒	No
	9.0.1 Was Act 537 sewage facilities planning submitted and approved by DEP? If "Yes" attach the approval letter. Approval required prior to 105/NPDES approval.	☐	Yes	☒	No
10.0	**Is this project for the beneficial use of biosolids for land application within Pennsylvania?** If "Yes" indicate how much (i.e. gallons or dry tons per year). **10.0.1 Gallons Per Year (residential septage)** _____ **10.0.2 Dry Tons Per Year (biosolids)**	☐	Yes	☒	No
11.0	**Does the project involve construction, modification or removal of a dam?** If "Yes", identify the dam. **11.0.1 Dam Name**	☐	Yes	☒	No

12.0	**Will the project interfere with the flow from, or otherwise impact, a dam?** If "Yes", identify the dam.	☐	Yes	☒	No
	12.0.1 Dam Name				
13.0	**Will the project involve operations (excluding during the construction period) that produce air emissions (i.e., NOX, VOC, etc.)?** If "Yes", identify each type of emission followed by the amount of that emission.	☐	Yes	☒	No
	13.0.1 Enter all types & amounts of emissions; separate each set with semicolons. NA				
14.0	**Does the project include the construction or modification of a drinking water supply to serve 15 or more connections or 25 or more people, at least 60 days out of the year?** If "Yes", check all proposed sub-facilities.	☐	Yes	☒	No
	14.0.1 Number of Persons Served				
	14.0.2 Number of Employee/Guests				
	14.0.3 Number of Connections				
	14.0.4 Sub-Fac: Distribution System	☐	Yes	☐	No
	14.0.5 Sub-Fac: Water Treatment Plant	☐	Yes	☐	No
	14.0.6 Sub-Fac: Source	☐	Yes	☐	No
	14.0.7 Sub-Fac: Pump Station	☐	Yes	☐	No
	14.0.8 Sub Fac: Transmission Main	☐	Yes	☐	No
	14.0.9 Sub-Fac: Storage Facility	☐	Yes	☐	No
15.0	**Will your project include infiltration of storm water or waste water to ground water within one-half mile of a public water supply well, spring or infiltration gallery?**	☐	Yes	☒	No
16.0	**Is your project to be served by an existing public water supply?** If "Yes", indicate name of supplier and attach letter from supplier stating that it will serve the project.	☒	Yes	☐	No
	16.0.1 Supplier's Name Jackson Township Water Authority Ebensburg Borough Highridge Water Authority				
	16.0.2 Letter of Approval from Supplier is Attached	☐	Yes	☒	No
17.0	**Will this project involve a new or increased drinking water withdrawal from a stream or other water body?** If "Yes", should reference both Water Supply and Watershed Management.	☐	Yes	☒	No
	17.0.1 Stream Name				
18.0	**Will the construction or operation of this project involve treatment, storage, reuse, or disposal of waste?** If "Yes", indicate what type (i.e., hazardous, municipal (including infectious & chemotherapeutic), residual) and the amount to be treated, stored, re-used or disposed.	☒	Yes	☐	No
	18.0.1 Type & Amount Non-hazardous/Construction related C&D waste will be disposed; Amount unknown				
19.0	**Will your project involve the removal of coal, minerals, etc. as part of any earth disturbance activities?**	☐	Yes	☒	No
20.0	**Does your project involve installation of a field constructed underground storage tank?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit.	☐	Yes	☒	No
	20.0.1 Enter all substances & capacity of each; separate each set with semicolons.				
21.0	**Does your project involve installation of an aboveground storage tank greater than 21,000 gallons capacity at an existing facility?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit.	☐	Yes	☒	No
	21.0.1 Enter all substances & capacity of each; separate each set with semicolons.				

22.0	**Does your project involve installation of a tank greater than 1,100 gallons which will contain a highly hazardous substance as defined in DEP's Regulated Substances List, 2570-BK-DEP2724?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **22.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No
23.0	**Does your project involve installation of a storage tank at a new facility with a total AST capacity greater than 21,000 gallons?** If "Yes", list each Substance & its Capacity. **Note:** Applicant may need a Storage Tank Site Specific Installation Permit. **23.0.1 Enter all substances & capacity of each; separate each set with semicolons.**	☐	Yes	☒	No
24.0	**Will the intended activity involve the use of a radiation source?**	☐	Yes	☒	No

CERTIFICATION

I certify that I have the authority to submit this application on behalf of the applicant named herein and that the information provided in this application is true and correct to the best of my knowledge and information.

Type or Print Name Matthew Gordon

	Senior Director	2-1-2019
Signature	**Title**	**Date**

Supplemental Act 14 Notifications

TETRA TECH

PITT-01-19-036

January 30, 2019

Project Number 212C-PB-00387

Executive Director of Planning Commission
Cambria County
401 Candlelight Drive, Suite 215
Ebensburg, PA 15931

Reference: Sunoco Pipeline, L.P. (SPLP)
Pennsylvania Pipeline Project
Major Modification I

To Whom It May Concern:

This municipal notice, under the requirements of Acts 14, 67, 68, and 127, is to inform you that our client, Sunoco Pipeline, L.P. (SPLP), is applying for coverage under the Erosion and Sediment Control General Permit (ESCGP-3) for Earth Disturbance Associated with Oil and Gas Exploration, Production, Processing or Treatment Operations or Transmission Facilities and for coverage under Chapter 105 Joint Permit for Water Obstruction and Encroachment.

Project Name: Pennsylvania Pipeline Project

Applicant Name: Sunoco Pipeline, L.P.
535 Fritztown Road
Sinking Spring, PA 19608

Project Description: Sunoco Pipeline, L.P. (SPLP) proposes a Major Modification to the Pennsylviana Pipeline Project within Jackson Township, Cambria County. The modification is for the 16-inch pipeline and includes a reroute and the elimination of Horizontal Direction Drills under Goldfinch Lane and William Penn Avenue. The reroute will increase the limits-of-disturbance by 10.83 acres and contains 9 new stream crossings and 10 new wetland crossings. The pipeline will be installed using open cut methodolgy and a convetional bore under Route 271.

Site Location: The modification area is located west of the PPP crossing of Route 271 in Jackson Township, Cambria County.

Enclosed is a copy of the Notice of Intent (NOI) application for an ESCGP-3, General Information Form (GIF) for the Wetlands and Waterways permit application, and Location map of the proposed major modification route. Please submit any comments concerning this project within 30 days from date of receipt of this letter to:

Pennsylvania Department of Environmental Protection (PA DEP)
400 Waterfront Drive
Pittsburgh, Pennsylvania 15222
Phone: (412) 442-4000

Tetra Tech
661 Andersen Drive, Pittsburgh, PA 15220-2700
Tel 412.921.7090 Fax 412.921.4040 www.tetratech.com

Should you have questions regarding this correspondence, please do not hesitate to contact me at 412.921.8163 or via e-mail at Robert.Simcik@tetratech.com.

Sincerely,

Robert F. Simcik, P.E.
E&S Task Manager

RFS/clm

Enclosure: Site Location Maps; Notice of Intent; GIF

cc: File 212C-PB-00387

January 31,2019

Dear Customer:

The following is the proof-of-delivery for tracking number **774354655540**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	E.IMOFF	**Delivery location:**	401 CANDLELIGHT DRIVE EBENSBURG, PA 15931
Service type:	FedEx Priority Overnight	**Delivery date:**	Jan 31, 2019 11:00
Special Handling:	Deliver Weekday Adult Signature Required		

Shipping Information:

Tracking number:	774354655540	**Ship date:**	Jan 30, 2019
		Weight:	0.5 lbs/0.2 kg

Recipient:
Commissioners
Cambria County
401 Candlelight Drive
Suite 215
EBENSBURG, PA 15931 US
Reference
Purchase order number:

Shipper:
ADMIN OFFICE
Tetra Tech, Inc.
Foster Plaza Building 7
661 Andersen Drive, Suite 200
Pittsburgh, PA 15220 US
212IC-BF-00037.500
Carson/Morris

Thank you for choosing FedEx.

PITT-01-19-037

January 30, 2019

Project Number 212IC-PB-00387

Jackson Township
513 Pike Road
Johnstown, PA 15909

Reference: Sunoco Pipeline, L.P. (SPLP)
Pennsylvania Pipeline Project

To Whom It May Concern:

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400 Waterfront Drive
Pittsburgh, Pennsylvania 15222
Phone: (412) 442-4000

Should you have questions regarding this correspondence, please do not hesitate to contact me at 412.921.8163 or via e-mail at Robert.Simcik@tetratech.com.

Tetra Tech
661 Andersen Drive, Pittsburgh, PA 15220-2700
Tel 412.921.7090 Fax 412.921.4040 www.tetratech.com

Sincerely,

Robert F. Simcik, P.E.
E&S Task Manager

RFS/clm

Enclosure: Site Location Maps; Notice of Intent; GIF

cc: File 212IC-PB-00387

January 31,2019

Dear Customer:

The following is the proof-of-delivery for tracking number **774354689445**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	M.DAWN	**Delivery location:**	513 PIKE ROAD JOHNSTOWN, PA 15909
Service type:	FedEx Priority Overnight	**Delivery date:**	Jan 31, 2019 10:51
Special Handling:	Deliver Weekday Adult Signature Required		

Shipping Information:

Tracking number:	774354689445	**Ship date:**	Jan 30, 2019
		Weight:	0.5 lbs/0.2 kg

Recipient:
Supervisors
Jackson Township
513 Pike Road
JOHNSTOWN, PA 15909 US

Shipper:
ADMIN OFFICE
Tetra Tech, Inc.
Foster Plaza Building 7
661 Andersen Drive, Suite 200
Pittsburgh, PA 15220 US

Reference
212IC-BF-00037.500
Purchase order number:
Carson/Morris

Thank you for choosing FedEx.

Supplemental Stormwater and Floodplain Management Analysis

TETRA TECH

January 30, 2019

Bruce A. Baker, John A. Wallet, and Eric W. Dreikorn
Jackson Township Supervisors
Jackson Township Municipal Building
513 Pike Road
Johnstown, PA 15909

Reference: **Sunoco Pipeline L.P. – Pennsylvania Pipeline Project**
Goldfinch Lane/William Penn Avenue Reroute
Act 167 Stormwater/Floodplain Management Program Consistency Request-
UPDATED Project Workspaces

Dear Supervisors:

On behalf of Sunoco Pipeline, L.P., Tetra Tech, Inc. is writing to provide updated workspaces/floodplain maps associated with the Pennsylvania Pipeline Project's (PPP) Goldfinch Lane/William Penn Avenue Reroute (Project) in Jackson Township. This letter is being sent as part of a Major Modification Request to the PPP Chapter 105 Water Obstruction and Encroachment Permit Application and as part of Act 167 Stormwater/Floodplain Management Consistency requirements. The township previously provided a consistency letter for the PPP workspaces on December 29, 2015. We would like to request the Township's input again on the attached latest Project reroute in your township (updated workspaces are highlighted as additions and subtractions).

As shown, the Project reroute and changes to the workspace do not affect the Township's previous consistency determination. The Project ROW remains located within Jackson Township, which has adopted the Little Conemaugh River Watershed Act 167 Stormwater Management Plan stormwater management regulations. The Project will be designed, constructed, and operated in compliance with all applicable provisions of 25 Pennsylvania Code, Chapter 102 Regulations (Erosion and Sediment Control) and Post Construction Stormwater Management Best Management Practices including the implementation of Antidegradation Best Available Combination of Technologies (ABACT methods) where applicable, to maintain the designated use of receiving waters in the area and no increase in stormwater runoff, rate or volume would occur.

Consistent with the letter we previously sent, no aboveground facilities or new access roads are proposed in FEMA designated floodways or 100-year floodplains. The Project reroute (including newly proposed temporary and permanent workspaces) still cross designated FEMA Special Flood Hazard Areas Zone A and Zone AE; but some of these areas will still be crossed using horizontal directional drill techniques, reducing surface disturbance and potential Project impacts. Nonetheless, the entire pipeline will be buried and preconstruction contours and elevations will be restored following pipeline installation.

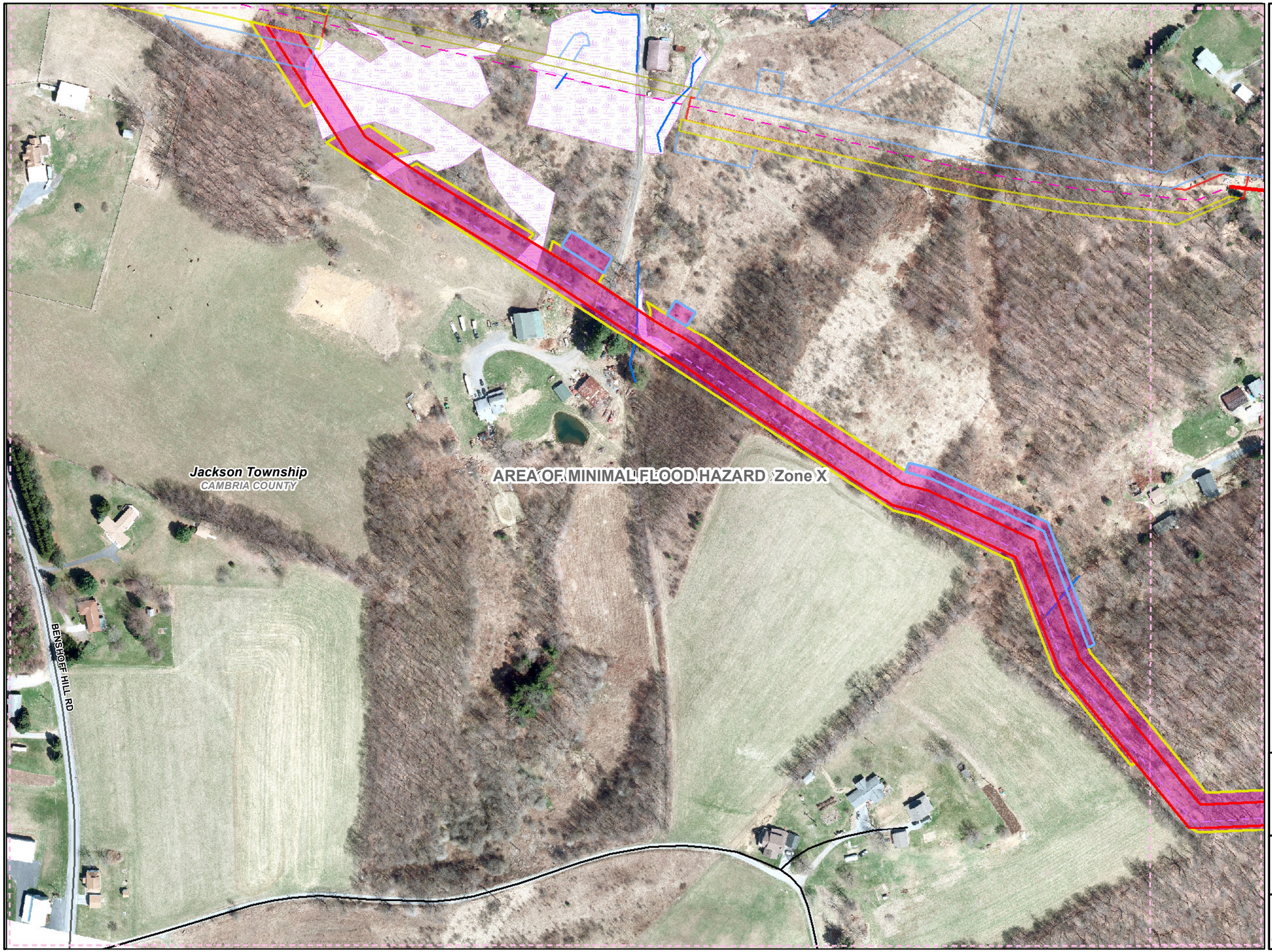
Based on the above, we have determined that the new Project reroute and workspace changes do not affect the Township's previous consistency determination. If you have further questions/comments or disagree with this determination, please contact me, Ailene Batoon, at (716) 849-9419 or via email at ailene.batoon@tetratech.com 30 days of receipt of this letter. Thank you for your time.

Sincerely,

Ailene Batoon
Tetra Tech, Inc.

Enclosures: Updated Site Plan/Floodplain Maps

Tetra Tech
301 Ellicott St, Buffalo, New York 14203
Tel 716.849.9419 Fax 716.849.9420 www.tetratech.com



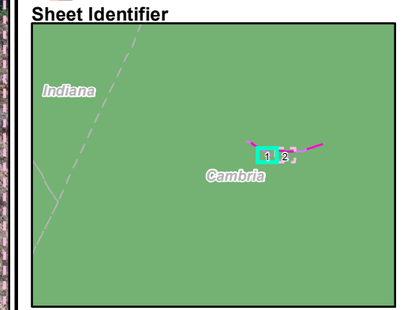
Legend

- Added Workspace
- Recently Installed PPP 20-inch Pipeline Corridor
- Proposed PPP 16-inch Pipeline Goldfinch Reroute
- HDD
- Bore
- Bore Pit
- ATWS
- Permanent ROW
- Temporary ROW
- Existing Block Valve
- New Block Valve
- New Block Valve Setting LOD
- Stream
- Wetland
- Pond

Flood Hazard Zones

- 1% Annual Chance Flood Hazard
- Floodway
- 0.2% Annual Chance Flood Hazard
- Reduced Risk Due to Levee

Sheet Identifier



N

0 100 200 400

1 inch = 200 feet

FEMA NFHL Designated Floodplains Along the Sunoco Pennsylvania Pipeline Project, Cambria County, PA.
Sheet 1 of 2

Prepared By:	Date:
TETRA TECH	01/2019

Base Map; SPLP 2014-2016, Roads from NRCS Geo-spatial Data Giveaway, 100-Year Floodplain from FEMA NFHL, downloaded 01/2019. Aquatics, TT 2013-2019.

Coordinate System: NAD 83 Stateplane, PA South, Feet

P:\GIS\projects\112C05958-PPP\MXD\Permits\Permit\Mods\GoldfinchFEMA.mxd JL

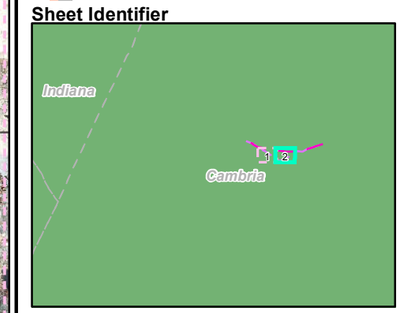
Legend

- Added Workspace
- Recently Installed PPP 20-inch Pipeline Corridor
- Proposed PPP 16-inch Pipeline Goldfinch Reroute
- HDD
- Bore
- Bore Pit
- ATWS
- Permanent ROW
- Temporary ROW
- Existing Block Valve
- New Block Valve
- New Block Valve Setting LOD
- Stream
- Wetland
- Pond

Flood Hazard Zones

- 1% Annual Chance Flood Hazard
- Floodway
- 0.2% Annual Chance Flood Hazard
- Reduced Risk Due to Levee

Sheet Identifier



N

0 100 200 400

1 inch = 200 feet

FEMA NFHL Designated Floodplains Along the Sunoco Pennsylvania Pipeline Project, Cambria County, PA.
Sheet 2 of 2

Prepared By: TETRA TECH

Date: 01/2019

Base Map; SPLP 2014-2016, Roads from NRCS Geo-spatial Data Giveaway, 100-Year Floodplain from FEMA NFHL, downloaded 01/2019. Aquatics, TT 2013-2019.

Coordinate System: NAD 83 Stateplane, PA South, Feet

P:\GIS\projects\112\C05958-PPP\MXD\Permits\PermitMods\Goldfinch\FEMA.mxd JL

January 31,2019

Dear Customer:

The following is the proof-of-delivery for tracking number **774354310270**.

Delivery Information:

Status:	Delivered	**Delivered to:**	Receptionist/Front Desk
Signed for by:	M.DAWN	**Delivery location:**	513 PIKE ROAD JOHNSTOWN, PA 15909
Service type:	FedEx Priority Overnight	**Delivery date:**	Jan 31, 2019 10:51
Special Handling:	Deliver Weekday Adult Signature Required		

Shipping Information:

Tracking number:	774354310270	**Ship date:**	Jan 30, 2019
		Weight:	0.5 lbs/0.2 kg

Recipient:
Supervisors
Jackson Township
513 Pike Road
JOHNSTOWN, PA 15909 US

Shipper:
ADMIN OFFICE
Tetra Tech, Inc.
Foster Plaza Building 7
661 Andersen Drive, Suite 200
Pittsburgh, PA 15220 US

Reference 212IC-BF-00037.500
Purchase order number: Carson/Morris

Thank you for choosing FedEx.