

August 1, 2018

Joseph Snyder
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PADEP
400 Waterfront Drive
Pittsburgh, PA 15222-4745

DEP FILE E63-710
Falcon Ethane Pipeline System
Response to Technical Deficiency Letter —Washington County

Dear Mr. Snyder:

On behalf of Shell Pipeline Company LP (SPLC), AECOM Technical Services, Inc. (AECOM) has prepared the following responses to the PADEP comments dated June 1, 2018. AECOM is submitting two hard copies and two electronic copies of this comment/response letter and revised documents for the Falcon Ethane Pipeline System (Project) per the discussion held with PADEP, SPLC, and AECOM on June 1, 2018. Please add/replace these documents in your existing hard copies. Per previous discussion with Josh Shaffer at the Army Corps of Engineers (Corps) and with respect to the Corps' effort to reduce paper, the Corps' copy of this comment/response letter will be uploaded to the Corps' SAFE file upload site. The technical deficiency letter, as requested, is included with this submission as Attachment A.

- 1. The answer to Question No. 5.3, on your GIF, in the Coordination Information section, indicates that this project involves a floodplain project by the Commonwealth, a political subdivision of the commonwealth or a public utility. Identify and describe the floodplain project and the entity that is conducting this activity, pursuant to Sections 106.3 and 106.1 I(a), of the Department's Chapter 106 rules and regulations. Additional information may be required, pending your response to this item.*

This item was checked “yes” because SPLC thought it was required to be checked “yes” since the pipeline was going through a floodway. However, this Project is not a floodplain project by the Commonwealth, a political subdivision of the Commonwealth, or a public utility so Question No. 6.0 is not applicable to this Project. As a result, the answer was changed to “No.” The revised page 5 of the GIF form is included as Attachment B.

- 2. The answer to Question No. 6.0, on your GIF, in the Coordination Information section, indicates that this project involves a discharge of stormwater or wastewater from an industrial activity. Identify and describe this industrial discharge, pursuant to Sections 105.14(b)(6) and 105.24(a), of the Department's Chapter*

105 rules and regulations. Please be aware that additional permits may be required from the Department, pending your response to this item.

The “yes” answer was in response to water that would be discharged due to hydrostatic testing. SPLC and AECOM are aware that a PAG-10 will be required for this activity. As a result, a PAG-10 was submitted on July 27, 2018 to Mr. Mike Fifth at the PADEP, and it identifies and describes the discharges associated with hydrostatic testing.

- 3. §105.13(e)(l)(v) Earthwork occurring in Chartiers Township, Mount Pleasant Township and Robinson Township occurs in locations with Act 167 plans dated after 2005. As previously requested, provide a stormwater management analysis of any impacts on the Stormwater Management Plan that was prepared or adopted under the Stormwater Management Act (32 P. S. § § 680.1-680.17), along with letters, from Chartiers Township, Mount Pleasant Township and Robinson Township, respectively, commenting on the analysis.*

The Mount Pleasant consistency letter was received and emailed to the PADEP on June 15, 2017. Chartiers and Robinson Township consistency letters were previously submitted to the PADEP on June 5, 2018. All three townships agreed that given this is a pipeline project and as such, impacts are temporary, therefore, the Project complies with Act 167. All three consistency letters are provided as Attachment C for your convenience.

- 4. Regarding your wetland investigation, revise your delineation report to include the results of your investigation to determine the presence of wetlands within your project area that are identified by the US Fish & Wildlife Service's National Wetlands Inventory (NWI) data system (Wetlands Mapper), and provide supporting data sheets, pursuant to Section 105.13(e)(l)(x), of the Department's Chapter 105 rules and regulations.*

All of the NWI-mapped wetlands that were determined not to be wetlands have been accounted for in Washington County. These NWI wetlands were all located in an area that had been previously strip-mined and due to mining activities, those wetlands are no longer there. Data were taken for these areas and included in the Wetlands and Watercourse Delineation Report for Washington County. However, these data sheets and photographs have been pulled out of the report and are included separately as Attachment D.

During a site visit with the Washington County Conservation District in 2017 for the geotechnical bore investigation GP-8 permit, the NWI wetland located above the Panhandle Trail shown in the screenshot below was observed. As evident in the screenshot below, the NWI boundary does not match the aerial signature of the wetland. This area is mapped as a PUBHh, however, visual inspection in the field revealed that it is now PSS. The wetland was located outside of the study area however and no data were taken.



5. *Regarding your wetland investigation, provide a means to match the off-line wetland data sheets with the sampling point locations that are shown on the study area maps in your environmental assessment, pursuant to Section 105.13(e)(1)(x), of the Department's Chapter 105 rules and regulations.*

The offline data sheets have now been placed in the order that they are in on Tables 3 (Wetlands) and 4 (Watercourses) in the Wetland and Watercourse Delineation Report instead of by date. These data sheets are provided in Attachments E (Wetlands) and F (Watercourses).

6. *Pursuant to Sections 105.13(a) and 105.13(e)(1)(x) of the Department's Chapter 105 rules and regulations, revise Module S2, Section D.1.iv, to discuss the riverine resource type(s) and condition(s) as they relate to the inherent functions including, but not limited to, those associated with hydrological, biogeochemical and habitat attributes. Include any recreational uses when applicable. Currently, this section provides a general discussion on project effects (which is also discussed in a Section in Module S3), rather than a discussion of the inherent functions of the identified riverine resources that is requested in this section of Module S2.*

The Pennsylvania Function Based Aquatic Resource Compensation Protocol Draft Version 1.0 was utilized in the Joint Permit Application. This protocol combines hydrogeomorphic (HGM) functions into four function groups for wetlands: Hydrologic, Biogeochemical, and Habitat, which is what was discussed in the functional assessment for the Application. However, this was determined, as stated in the DEP comment above, not to be a sufficient analysis. Additionally, in contrast to prior instruction, DEP is requiring that all impacts to streams be addressed, not just permanent impacts. As a result, all the impacted streams will be discussed.

As described in SPLC's permit application, including its Project-Wide Comprehensive Environmental Report (CEA) for Pennsylvania, all stream impacts will be temporary and no permanent stream fills are proposed. SPLC has determined that all the stream crossings will be conducted utilizing either HDD, conventional bore, dam and pump or flume. The dam and pump or flume method divert the flow around the construction area during construction so that flow is not interrupted, and construction can be completed in dry conditions, thus limiting the amount of sediment downstream. A list of these streams is provided in the Impact Table included as Attachment D. As Pennsylvania has no approved functions and values assessment method for streams, each of the four function groups discussed in the Function Based Aquatic Resource Compensation Protocol Draft Version 1.0 will be expanded to discuss all the individual functions that each group comprises. This results in:

- **The Hydrologic Function Group includes the floodplain storage capacity, energy dissipating characteristics, geomorphic channel stability, sediment transport processes, and**

- maintaining characteristic watershed hydrologic dynamics such as seasonal and storm flow patterns. These functions are driven by channel characteristics and accessibility to the floodplain, along with contributory watershed conditions.
- The Biogeochemical Function Group includes the biogeochemical processes, which consist of temperature regulation, and nutrient and organic matter cycling. These functions are typically driven by the type and quality of riparian vegetation and the root system's interaction with groundwater.
 - The Habitat Function Group includes instream habitat including providing for the life requirements of vertebrates, invertebrates, and plants that are located within or on the banks of a watercourse. Chapter 93 protected uses are used to categorize general habitat types.
 - The Recreation or Resource Support Function Group is a dual function group that is driven by either public recreational opportunities (fishing, boating, swimming, etc.) or the chemical, physical, and biological attributes that contribute to maintaining downstream water quality designation and uses. These water quality designations and uses should be categorized using Chapter 93's protected uses and special protection waters.

The streams will first be categorized by classification and then by Chapter 93 designated use, since there are no Chapter 93 existing uses for streams in the Project Area, or special protection water status. Perennial streams are those stream reaches that contain year-round flow and a diverse benthic macroinvertebrate community, with long aquatic life stages (mayflies, stoneflies, or caddisflies) or with permanent aquatic life stages (freshwater mussels), that dominate the stream. Intermittent streams are streams possessing seasonal flows and benthic macroinvertebrate communities with short aquatic life stages such as midges. Ephemeral streams are streams that flow only in response to precipitation events or snow melt. They do not have a benthic macroinvertebrate community.

All 32 of the streams within the Washington County portion of the Project have Chapter 93 Designated Use of Warm Water Fishes (WWF). This means that the stream maintains and propagates flora and fauna indigenous to warm water habitat, such as catfish, bluegill, and other sunfish.

Perennial Streams

Hydrologic and Biogeochemical: The perennial streams within the Project Area are typically wider streams with a larger floodplain storage capacity. The floodplains are well vegetated, often containing wetlands, which enables the floodplains to dissipate the energy associated with flooding events. Given that they are larger streams with continuous flow and typically a more stable channel, they have the capability to maintain both seasonal and storm flow patterns, as well as to transport any sediment that may be washed into them because of storm events. They receive flow and runoff from tributaries and the surrounding landscape and within their watershed, which helps to maintain the balance within the overall watershed. As stated above, they typically have thick vegetation in the floodplain and many of the flora have deep root systems (like skunk cabbage) that interact with the groundwater system and contribute to biogeochemical processes. The constant flow allows for nutrients and organic matter like fallen leaves to be recycled and broken down for further use in the food chain.

Habitat: These perennial streams are capable of supporting their Chapter 93 designations because they are large enough and possess enough flow to maintain the proper temperature to

support the vertebrates that live within them. As stated above, all of the streams have been designated as WWF. Given that they are larger streams with year-round flow, they have the capability to maintain a constant temperature and support fish species such as catfish and bluegill. Warm water fishes are more tolerant than their cold-water counterparts and as a result, WWF streams typically have a more stable habitat type and can tolerate temperature fluctuations and changes in turbidity easier than CWF streams. The perennial stream floodplains are wide enough to support a wide diversity of botanical species which provide food, resting, escape cover, and nesting/roosting opportunities to a variety of animals.

Recreation: There were three named streams within the Project Area. Westland Run, Millers Run, and Robinson Run were less than one foot deep at the time of the delineation. It is unlikely the streams in these locations could be utilized for boating activities. The other streams are slightly smaller and most likely would not provide opportunity for boating either. However, some fishing opportunities may be available to individual landowners as these streams are located on private property. Although WWF streams typically do not contain trout, several game species occur within them, making WWF streams suitable for fishing. As perennial streams, they are capable of maintaining downstream water quality due to their large sizes and continual flow, which will enable them to maintain their Chapter 93 designated uses throughout their reach. This is true even during construction given that flow will be maintained throughout construction.

A list of the Project’s perennial streams and their Chapter 93 designations is below.

Resource Crossing	Feature ID	Stream Name	Ch. 93 Designation
3	S-PA-160406-MRK-002 Crossing #1	Westland Run	WWF
9	S-PA-160406-MRK-002 Crossing #2	Westland Run	WWF
13	S-PA-160229-MRK-004	UNT to Westland Run	WWF
16	S-PA-160301-MRK-003	UNT to Westland Run	WWF
17	S-PA-151026-MRK-002	UNT to Westland Run	Floodway Only
18	S-PA-151026-MRK-001	UNT to Westland Run	WWF
21	S-PA-151029-MRK-002	UNT to Millers Run	WWF
22	S-PA-151029-MRK-001	UNT to Millers Run	WWF
23	S-PA-151210-MRK-001	Millers Run	WWF
26	S-PA-160314-NLS-002Bext	UNT to Millers Run	WWF
30	S-PA-151208-MRK-003	UNT to Millers Run	WWF
34	S-PA-151109-MRK-003	UNT to Robinson Run	WWF
35	S-PA-151012-MRK-001	Robinson Run	WWF
46	S-PA-170113-MRK-005	UNT to Little Raccoon Run	WWF
	S-PA-170113-MRK-004		WWF

Floodway Only designations apply to crossings where the impact occurs only in the floodway; no portion of the actual channel is impacted.

Intermittent Streams

Hydrologic and Biogeochemical: The intermittent streams within the Project Area are small-to-medium-sized streams with some floodplain storage capacity. The floodplains are typically well

vegetated, which enables the floodplains to dissipate energy associated with flooding events. They have seasonal flow and typically stable channels; therefore, they have the capability of maintaining both seasonal and storm flow patterns and can transport sediment that may be washed into them due to storm events. However, they do not have as high of a capability as perennial streams due to the lack of year-round flow. As stated above, they can have thick vegetation in the floodplain and many of the flora have deep root systems (like skunk cabbage) that interact with the groundwater system and contribute to biogeochemical processes. During periods of flow, nutrients and organic matter like fallen leaves can be recycled and broken down for further use in the food chain.

Habitat: Intermittent streams may be capable of supporting their Chapter 93 designations during periods of flow if they possess enough flow to maintain the proper temperature to support the vertebrates that live within them. As discussed above, WWF are typically more stable streams capable of maintaining habitat for a variety of fish species. Depending on where in the watershed the intermittent stream is, such as if it is close to a confluence with a perennial stream, the floodplains can be wide enough to support a wide diversity of botanical species which provide food, resting, escape cover, and nesting/roosting capabilities to a variety of birds and mammals.

Recreation: There may be some opportunity for fishing in the larger intermittent streams if fish were present during periods of flow; however, given the streams' characteristics, it is unlikely residents would fish these streams. During periods of sufficient flow, the streams would have ability to maintain downstream water quality, which would enable them to maintain their Chapter 93 designated uses throughout their reach. As stated above, this is because flow during construction will not be impeded. During periods of low or no flow, the stream would not be capable of maintaining constant temperatures suitable to maintain their Chapter 93 designation.

A list of the Project's intermittent streams and their Chapter 93 designations is provided below.

Resource Crossing	Feature ID	Stream Name	Ch. 93 Designation
11	S-PA-160229-MRK-002	UNT to Westland Run	Floodway Only
18	S-PA-160302-MRK-003	UNT to Westland Run	WWF
19	S-PA-160302-MRK-003	UNT to Westland Run	WWF
20	S-PA-151029-MRK-003	UNT to Millers Run	WWF
22	S-PA-161205-CBA-002	UNT to Millers Run	WWF
24	S-PA-151215-MRK-004	UNT to Millers Run	WWF
28	S-PA-170214-CBA-002	UNT to Millers Run	WWF
29	S-PA-160404-CBA-001	UNT to Millers Run	WWF
32	S-PA-170214-CBA-006	UNT to Robinson Run	WWF
	S-PA-170214-CBA-005		WWF
39	S-PA-151203-MRK-001	UNT to Robinson Run	WWF
47	S-PA-170207-MRK-005	UNT to Little Raccoon Run	WWF
48	S-PA-170113-MRK-006	UNT to Little Raccoon Run	WWF

Floodway Only designations apply to crossings where the impact occurs only in the floodway; no portion of the actual channel is impacted.

Ephemeral Streams

Hydrologic and Biogeochemical: The ephemeral streams within the Project Area are small streams with little floodplain storage capacity. They are typically located high within the watershed in steep valleys. Often the side slopes are steep and not well-vegetated. As a result, they do not have a high opportunity to dissipate energy associated with flooding events. Depending on where the streams are located, they can have highly erodible channels, such as in pastures, or have very steep rocky channels, such as within headwater forest systems. They do have some capability to maintain and receive seasonal and storm flow patterns and can transport sediment that may be washed into them due to storm events. However, they do not have as high of a capability to transport sediment as perennial or intermittent streams due to the lack of year-round flow. As stated above, they have narrow floodplains with little vegetation to interact with groundwater systems or to provide support to the food chain. However, during periods of high precipitation events, flushing flows can take organic matter and nutrients to larger streams to be recycled and broken down for further use in the food chain.

Habitat: Ephemeral streams typically are not capable of supporting their Chapter 93 designations given that they are dry throughout most of the year. They are generally assigned the same Chapter 93 designation as the main channel they are associated with, provided that stream is assigned a “basin” designation in Chapter 93. Given that the ephemeral floodplains are minimal and ephemeral streams are typically steep with little vegetation adjacent to the channel, there is not a good opportunity to provide food, resting, escape cover, and nesting opportunities to animals. Additionally, given that no benthic macroinvertebrates occur within ephemeral streams, there is little opportunity for food chain production within the ephemeral channel itself.

Recreation: There would be no opportunity for fishing for any type of fish in an ephemeral stream. During periods of rain or snow melt, if the streams were not isolated, water would flow into larger streams, which would then enable them to maintain downstream water quality, thus helping them to maintain their Chapter 93 designated uses by contributing to nutrient cycling, flow, and temperature regulation.

A list of the Project’s ephemeral streams and their Chapter 93 designations is provided below.

Resource Crossing	Feature ID	Stream Name	Ch. 93 Designation
11	S-PA-160229-MRK-001	UNT to Westland Run	WWF
12	S-PA-160229-MRK-003	UNT to Westland Run	WWF
14	S-PA-160301-MRK-001	UNT to Westland Run	WWF
15	S-PA-160301-MRK-002	UNT to Westland Run	WWF
20	S-PA-151029-MRK-004	UNT to Millers Run	Floodway Only
26	S-PA-170214-CBA-001	UNT to Millers Run	WWF
33	S-PA-170215-CBA-004	UNT to Robinson Run	Floodway Only
42	S-PA-170412-RCL-002	UNT to Robinson Run	Floodway Only
43	S-PA-170105-MRK-001	UNT to Little Raccoon Run	Floodway Only
44	S-PA-161130-CBA-001	UNT to Little Raccoon Run	WWF
45	S-PA-170105-MRK-002	UNT to Little Raccoon Run	Floodway Only

Floodway Only designations apply to crossings where the impact occurs only in the floodway; no portion of the actual channel is impacted.

Stream Impact Overview

Dry-crossing methods via the dam and pump or flume method will be utilized on all watercourse crossings, except for the streams crossed via HDD. Restoration and cleanup will commence as soon as practicable following construction completion. These activities include replacing grade cuts to original contours, seeding, fertilizing, and mulching to restore groundcover and minimize erosion. Temporary workspaces are stabilized to promote natural reversion toward their previous state. Completed stream crossings will be stabilized prior to returning flow to the channel from the dam/pump or flume diversion. Environmental Inspectors (EIs) will be on site during construction and restoration to ensure that the approved Best Management Practices (BMPs) are being followed according to the E&SCP.

This work can typically be conducted in two to three days and flow will be diverted around the work area during construction. As a result, the impact to hydrologic and biogeochemical stream functions is expected to be minimal and temporary. Construction will not be conducted during flooding events so impact to flood flow stabilization should not occur. Temporary increased sediment and turbidity may occur within the watercourses due to construction activities. However, appropriate BMPs, such as silt sock/fence as outlined in the ESCGP-2 Permit, will be implemented and utilized as necessary to minimize any temporary effect on water quality and resources during construction.

Habitat and food chain production will be temporarily impacted given that a 50-to-75-foot-wide construction ROW will be cleared. However, this impact should not be longer than one growing season while vegetation is recolonizing the ROW. Given that habitat and food chain production will be temporarily impacted, any impact to in-stream habitat will also be temporary given that the streambed will be returned to pre-construction conditions as discussed above.

Recreation will be temporarily impacted as residents will not be able to access streams if there is active construction due to safety reasons. Additionally, due to noise and construction vehicle traffic, passive recreational activities such as hunting, hiking, and wildlife observation may not be suitable until restoration activities have been completed. Given that all stream crossing construction work is temporary, and restoration will commence as soon as possible following construction completion, the impact to recreation will also be minor and temporary.

7. Pursuant to Sections 105.13(a) and 105.13(e)(1)(x) of the Department's Chapter 105 rules and regulations, revise Module S2, Section D.2.vi, to discuss the wetland HGM type(s) and condition(s) as they relate to the inherent functions including, but not limited to, those associated with hydrological, biogeochemical and habitat attributes. Include any recreational uses when applicable. Currently, this section provides a general discussion on project effects (which is also discussed in a Section in Module S3), rather than a discussion of the inherent functions of the identified wetland resources that is requested in this section of Module S2.

The Pennsylvania **Function Based Aquatic Resource Compensation Protocol Draft Version 1.0** was utilized in the Joint Permit Application. This protocol combines hydrogeomorphic (HGM) functions into function groups for wetlands: Hydrologic, Biogeochemical, and Habitat, which is what was discussed in the functional assessment for the Application. However, this analysis was determined, as stated in the comment above, to be insufficient. Additionally, pursuant to DEP instruction, the JPA only addressed wetlands that will be permanently impacted. DEP is presently requesting that all impacted wetlands be addressed in this analysis. As Pennsylvania has no approved functions and values assessment method, the US Army Corps of Engineers New England District's **The Highway Methodology Workbook Supplement, "Wetland Functions**

and Values a Descriptive Approach” (the “Highway Methodology”) was utilized below to analyze wetland functions and values as this is an approved methodology used often in relation to mitigation work and has been found to be generally acceptable to PADEP and the US Army Corps of Engineers. The Highway Methodology addresses the following eight wetland functions:

- Groundwater recharge/discharge;
- Floodflow alteration;
- Fish and shellfish habitat;
- Sediment/toxicant/pathogen retention;
- Nutrient removal/retention/transformation;
- Production export;
- Sediment/shoreline stabilization; and
- Wildlife habitat.

The Highway Method also analyzes the following five values:

- Recreation;
- Education/scientific value;
- Uniqueness/heritage;
- Visual quality/aesthetics; and
- Threatened/endangered species habitat.

The following provides a summary of each HGM classification and those specific wetlands that fall within that classification. A list of all impacted wetlands is in the Impact Table provided as Attachment G. Additional information may also be found in the CEA. In short, as explained below, there will be no permanent impacts to PEM/PUB wetlands. PFO and PSS wetlands will incur some permanent conversion impacts in the form of a change of cover.

Function/Values Relative to all HGM Classifications

Regardless of the classification types detailed in further detail below, and relative to each specific wetland, there are functions and values that are inherent and similar to all HGM classifications as explained here.

Regarding wetland functions, the vegetation within these wetland HGM classifications may produce seeds which would serve as food for birds or small mammals. Additionally, deer will eat skunk cabbage and many waterfowl and other mammal species will eat cattail roots. Therefore, all wetland types may serve in a food production/ export function. The thick vegetation present in wetlands may also provide habitat (nesting, spawning, rearing—essentially where the species prefers to be), resting (during migration), or escape cover for various small mammals and birds. For those wetlands located adjacent or along streams, they have the capability to stabilize sediment and the streambank.

Regarding wetland values, all the wetlands along the alignment are located on private land, so there is not an opportunity for public recreation; however, individual landowners may use the area for small game hunting. It is very unlikely that fish are present in any of these wetlands given their locations. Additionally, no fish were observed during delineation. It is unlikely that any of these wetlands provide educational, uniqueness, or aesthetics values due to the small sizes and common vegetation. It is also unlikely that these wetlands provide habitat for threatened and endangered species such as the Indiana or the northern long-eared bat (which were determined to be potentially located within the project vicinity) in the PEM or PUB wetlands because there are no trees located within these wetlands. There is the potential for a bat to feed over a wetland/stream complex if there was an open corridor such as a utility line ROW.

The ability for PSS or PFO wetlands to provide potential roosting habitat for bats is discussed further below.

HGM Stratigraphic slope (SLs)

The HGM classification Stratigraphic slope (SLs) includes wetlands with a hydrology source derived from structural geological groundwater discharge from a distinct point(s) on a slope. This classification is further classified based on whether the soil is of mineral (n) or organic soil (g). In this Project, the wetland soils are of mineral origin, making the HGM classification SLsn.

The PEM wetlands within the Project area possessing HGM classification SLsn have palustrine communities ranging from mixed forb-graminoid wet meadow, floodplain meadow, bluejoint-reed canary-grass marsh, mixed forb marsh, and cattail marsh. A summary of these wetlands is presented below.

RC #	Resource
RC-6	W-PA-160406-MRK-006
RC-7	W-PA-170112-MRK-003
RC-8	W-PA-170112-MRK-002
RC-23	W-PA-151210-MRK-001
RC-26	W-PA-151215-MRK-003
RC-38	W-PA-151012-MRK-003

Given that these wetlands are classified SLsn, they are connected to groundwater. As a result, they may serve as groundwater recharge or discharge areas. This characteristic also allows the wetlands to serve as floodflow storage and desynchronization areas during prolonged precipitation events.

The thick vegetation present within W-PA-160406-MRK-006 helps to reduce or prevent water quality degradation by allowing sediments or toxicants to be trapped within the system. It is located along a stream and as a result is capable of removing, retaining, or transforming any nutrients entering the stream. The remaining wetlands are isolated and as a result they do not have the opportunity to support any of these functions.

HGM Topographic slope (SLt)

The HGM classification Topographic slope (SLt) includes wetlands that have water accumulating at the toe of a slope before discharging. This is then further broken down into soils of either organic (g) or mineral (n) origin. Again, these wetlands contain soils of mineral origin; therefore, the HGM classification is SLtn.

The PEM wetlands within HGM classification SLtn have palustrine communities ranging from mixed forb-graminoid wet meadow, common reed marsh, sparsely vegetated vernal pool community, cattail marsh, and golden saxifrage – sedge rich seep. A summary of these wetlands is presented below.

RC #	Resource
RC-10	W-PA-160406-MRK-002
RC-21	W-PA-151029-MRK-001

RC #	Resource
RC-28	W-PA-170214-CBA-003
RC-30	W-PA-170413-RCL-001
RC-32	W-PA-170215-CBA-002
RC-33	W-PA-170214-CBA-005*
RC-35	W-PA-151208-MRK-006
RC-37	W-PA-151012-MRK-002
RC-47	W-PA-170113-MRK-007

*PFO portion discussed separately

These wetlands are located at the toe of a slope; as a result, they may serve as groundwater recharge areas. Some of them may intercept groundwater and would also serve as groundwater discharge areas. Their location at the toe of a slope also allows the wetlands to serve as floodflow storage and desynchronization areas during prolonged precipitation events.

The thick vegetation present within the palustrine communities, except for the sparsely vegetated vernal pool community, helps to reduce or prevent water quality degradation by allowing sediments or toxicants to be trapped within the system. Wetlands W-PA-170214-CBA-003 and WP-PA-170215-CBA-002 are isolated and as a result they do not have the opportunity to remove, retain or transform nutrients entering streams. The remaining wetlands however are located along or adjacent to streams and as a result are capable of nutrient removal, retention, or transformation of any nutrients entering the stream. W-PA-151012-MRK-002 is heavily impacted with abandoned mine drainage (AMD) and as a result is overall a low-functioning wetland.

HGM Depression temporary (DFA)

The HGM classification Depression temporary (DFA) includes wetlands with no surface outlet, often as a result of being perched above the water table. The PEM wetlands within this HGM classification have the palustrine community of mixed forb-graminoid wet meadow and sparsely vegetated vernal pool community. A summary of these wetlands is presented below.

RC #	Resource
RC-1	W-PA-160407-JLK-003
RC-2	W-PA-160407-JLK-002
RC-41	W-PA-151203-MRK-005
RC-42	W-PA-151203-MRK-006

DFA resources most likely do not have the opportunity to serve as groundwater recharge or discharge areas. Their depressional nature would allow them to serve as floodflow storage and desynchronization areas during prolonged precipitation events.

The thick vegetation present within the mixed wet meadow system and the depressional wetland shape helps to reduce or prevent water quality degradation by allowing sediments or toxicants to be trapped within the system. All the wetlands are isolated and as a result they do not have the opportunity to remove, retain or transform nutrients entering streams.

If the depressions contained enough water in the spring, they may serve as amphibian breeding habitat as some frog species will even lay eggs in tire ruts with water.

HGM classification Impounded depressions/excavations (Dp)

Impounded depressions or excavations, the (Dp) HGM classification is further broken down into wetlands that are impounded by humans (h), excavated by humans (x), or impounded by beavers (b). The wetlands within the Project Area have been excavated. Therefore, the HGM classification is DPx. The palustrine communities included sparsely vegetated vernal pool community and cattail marsh. A summary of these wetlands is presented below.

RC #	Resource
RC-4	W-PA-160406-MRK-003
RC-5	W-PA-160406-MRK-004
RC-39	W-PA-151203-MRK-001

These wetlands do not appear to be connected to groundwater and as a result would not serve as groundwater recharge/discharge areas. These are depressional wetlands though and as result they may have the opportunity to serve as floodflow storage and desynchronization areas during prolonged precipitation events.

The depressional wetland shape helps to reduce or prevent water quality degradation by allowing sediments or toxicants to be trapped within the system. These are isolated wetlands however, and as a result they do not have the opportunity to protect streams from sediments or toxicants.

W-PA-151203-MRK-001 is a cattail marsh and cattail leaves and roots provide food for a variety of birds and mammals. Therefore, this wetland would serve in a production/export function. The thick cattail and may also provide resting or escape cover for various small mammals and birds. Additionally, some birds like the red winged-blackbird nest in cattail stands. The remaining two wetlands are sparsely vegetated and would have low opportunity to provide food, resting, or escape cover. However, the open water may serve as amphibian breeding areas.

PEM/PUB Wetland Impact Conclusion

All the wetlands discussed above in each of the HGM classifications are either PEM or PUB wetlands that will be temporarily impacted. Following construction each of the wetlands will be returned to their original contours as discussed in the original permit application and additional documents prepared in response to the PADEP Technical Deficiency Letters. As a result, there will be no permanent impact to their functions or values. There may be some temporary impact to the functions while the seed mixes are germinating; however, that impact should not last more than one growing season. In response to PADEP comments, the LOD was revised and W-PA-170112-MRK-002 and W-PA-160407-JLK-003 are no longer impacted; therefore, there will be no impact to their functions and values. Similarly, W-PA-151012-MRK-002, although a low functioning wetland, will be crossed via HDD and as a result, there will be no impact to its functions or values.

Forested and Scrub Shrub Wetlands Discussion

Forested and scrub shrub wetlands traversed by the Project will have similar impacts as herbaceous wetlands; however, given that the vegetation in the permanent ROW will be maintained as herbaceous, conversion impacts will occur in the form of a change in cover. As a result, PSS and PFO wetlands are discussed separately from PEM; each of the PSS/PFO wetlands is discussed below as it relates to their specific conversion impact.

Given that all these wetlands contain trees or shrubs, they provide food, nesting/breeding areas, resting, and escape cover functions. No fish were present at any of these wetlands and it is very unlikely that fish would be present given the wetlands' location in the landscape. It is unlikely that any of these wetlands provide educational, uniqueness, or aesthetics values due to the small sizes and common vegetation. These wetlands are all located on private land, so they are not public sources for recreation, although the landowner may use the area for small game hunting. It is unlikely PSS wetlands would be desirable to any threatened or endangered species such as the northern long-eared bat due to either the type or tree diameter present and the fact that bats do not utilize shrubs as roosting habitat.

Converting PFO and PSS habitat types to PEM will result in minor and insignificant changes to function and values relative to all PFO and PSS wetlands. Groundwater recharge and discharge will not be altered because the wetlands will be restored to original contours following construction. If the wetland had a connection to groundwater prior to construction, such as with the SIsn HGM classification, it will still have that connection following construction, regardless of vegetation type. For wetlands located near streams, flood flow alteration, sediment/toxicant/pathogen retention, nutrient removal/retention/transformation, as well sediment/shoreline stabilization will increase. This is because forested and scrub/shrub systems will be replaced with dense herbaceous cover, which has a greater surface area to trap sediments or nutrients and stabilize the shoreline and protect land from floodwaters.

The vegetation stratum will change from forest or scrub/shrub to herbaceous, so there will be a change in the food production/export; however, the sedges that will replace the shrubs and trees provide food for a variety of wildlife. As a result, there will be a similar food production/transport function, and that function will not be lost when changing vegetation cover. Open corridors over stream/wetland complexes provide suitable bat feeding areas. This is because bats prefer to fly through open corridors over open water where insect activity is prevalent. Additionally, thick vegetation provides resting and escape cover for a variety of small mammals and birds; therefore, that function will not be lost when the vegetation cover type changes.

The SLtn and SIsn HGM classification types allow the wetland to serve as floodflow storage and desynchronization areas during prolonged precipitation events. The root system of the trees and shrubs present helps to reduce or prevent water quality degradation by allowing sediments or toxicants to be trapped within the system groundwater recharge/discharge, floodflow storage and desynchronization will only be temporarily impacted during construction given that the wetland will be returned to original pre-construction contours. However, as stated above, replacement with thick herbaceous vegetation will have a similar and perhaps increased function. Replacing a forested or scrub/shrub system with a thick herbaceous layer will also provide better erosion control.

W-PA-160406-MRK-001 (PSS) has HGM classification SLtn. The hydrology originates from a spring/seep and seasonal flooding. It is an isolated wetland located between Westland Run and SR 519, approximately 50 feet from Westland Run and 77 feet from SR 519. The wetland has a very low capacity to serve as groundwater recharge/discharge, floodflow alteration, and fish

habitat. Given its location between the road and stream, it may have some capacity to intercept toxicants, sediments, or nutrients from the road and prevent them from entering the stream.

Approximately 32 percent of the wetland is located within the LOD, and all of that is located within the temporary construction LOD. As a result, the shrub species will be allowed to regrow following construction. The honeysuckle and elderberry that are present now should be able to quickly re-establish.

W-PA-170413-RCL-005 (PSS) also has a HGM classification of SLtn. A perennial stream flows through this wetland and the wetland receives its hydrology through overland flooding and groundwater. It is located along multiple streams and as a result the wetland is capable of nutrient removal, retention, or transformation for any nutrients entering the adjacent streams. It *may* provide habitat for threatened and engendered species such the northern long-eared bat because there were some green ash trees present which, if they were dead or declining, could provide roosting habitat. However, there was only 10 percent green ash present throughout the entire wetland. However, no roost trees were found during the bat mist net studies and given that the ash trees were still alive, it is unlikely that any northern long-ear bats are roosting within this wetland.

Approximately 16 percent of the wetland (2,347 ft² of 14,835ft²) is located within the project LOD and all of that is located within the temporary construction LOD. Given that the impacted area is located within the temporary workspace, the shrubs will be permitted to recolonize the area and there will be no permanent impact to functions or values.

W-PA-170214-CBA-005 (PFO) also has a HGM classification of SLtn. This wetland receives most of its hydrology from overflow from a large man-made pond upslope from the wetland. It also receives some hydrology from groundwater, as water was eight inches from the surface in the test pit. A perennial stream and two intermittent streams also flow through the wetland. Given that multiple streams flow through this complex, the wetland is capable of nutrient removal, retention, or transformation for any nutrients entering the adjacent streams. The wetland is located on a golf course; however, it is located at the edge of the property outside of the playing area. It *may* provide habitat for threatened and engendered species such the northern long-eared bat because there were some green ash trees present which, if they were dead or declining, could provide roosting habitat. However, there was only 15 percent green ash present throughout the entire wetland. However, no roost trees were found during the bat mist net studies and given that the ash trees were still alive, it is unlikely that any northern long-ear bats are roosting within this wetland.

Only 2,228ft² of the approximate 31,140 ft² wetland (approximately seven percent) is located within the Project LOD, most of which will be located within the permanent LOD. As discussed above, the conversion impact will result in minor and insignificant changes to function and values.

8. *Provide an evaluation of the impact that open cut installation methods could have on wetlands that rely on perched water tables, confining layer, and/or fragipans to maintain hydrology. This evaluation should include a discussion of how your proposed activities, and, if applicable, proposed mitigation will maintain wetland hydrology in these types of areas. 25 Pa. Code §105.13(e)(1)(x).*

The concern with perched water tables is that if a confining layer like clay is open cut, the hydrology will be lost because there is no longer a confining layer to keep it in place. It is

sometimes difficult to predict this prior to actual construction. Often, scientists cannot dig the full 20 inches in a wetland test pit due to rocks or roots, not a confining layer. However, the HGM classifications were determined for each impacted wetland to determine which ones may have perched water tables. The wetlands with classification Depression temporary (DFA) could have perched water tables because they are wetlands with no surface outlet, which is often a result of being perched above the water table. Four wetlands were determined to potentially have perched water tables. These include W-PA-160407-JLK-003, W-PA-160407-JLK-002, W-PA-151203-MRK-005, and W-PA-151203-MRK-006, all of which were proposed to be open cut. Following permit submittal, the LOD was analyzed and it was determined that the LOD at W-PA-160407-JLK-003 could safely be reduced and as a result it will no longer be impacted. If any of the remaining three wetlands are perched, or if a perched wetland is encountered, the associated clay layer that maintains that portion of the perched wetland hydrology will be segregated and then replaced along the same horizon during pipeline backfilling, and then compacted so that hydrology may be maintained. Additionally, trench plugs are placed on either side of the wetland on the ROW to prevent water from migrating out on the sides. A detail depicting this is provided as Attachment G.

9. *Evaluate and discuss your project's potential to impact any public water systems and their sources that are located within 1-mile of your proposed pipeline system, pursuant to Sections 105.13(e)(l)(ii) and 105.14(b)(5), of the Department's Chapter 105 rules and regulations.*

The PADEP gave SPLC and AECOM a list of public water suppliers within one mile of the Project. None of these were located within Washington County. PADEP also told the team to call the Better Business Bureau (BBB) and the health department. The BBB stated that they do not deal with water issues and the Washington County Health Department said to call the Washington Joint Authority. The Washington Joint Authority said to call PennAmerican Water and they stated that they did not have anything to provide for locating additional potential impacts.

10. *Related to the preceding item, and as needed, discuss efforts to avoid and minimize impacts to these public water systems, and measures that will be implemented to mitigate for any unavoidable impacts, pursuant to Sections 105.13(e)(l)(viii & ix) and 105.14(b)(5), of the Department's Chapter 105 rules and regulations. These efforts might include, but are not limited to, considering alternative locations, routings or design for the proposed pipeline; providing provisions for shut-off in the event of break or rupture; etc.*

There are no public water systems within Washington County, therefore, no mitigation is needed.

11. *Due to the presence of public water systems in or near your project area, re-evaluate and discuss whether your project will impact Exceptional Value (EV) wetlands, which were not previously identified as EV wetlands, pursuant to Sections 105.13(e)(l)(x)(B), of the Department's Chapter 105 rules and regulations. If your project will impact EV wetlands, identify these wetlands, and demonstrate compliance with Sections 105.18a(a)(1-7), of the Department's Chapter 105 rules and regulations, regarding the permitting of structures and activities in EV wetlands.*

Given that there are no public water supplies located within Washington County, an EV wetland analysis with respect to their location is not necessary.

12. *Module S3 of your EA indicates that the proposed pipeline centerline is located within previously mined areas (see pages 31-32). Provide a map overlay drawing of your project with these mining areas, and*

GIS shape files with this information, pursuant to Section 105.14(b)(6) and 105.24(a) 105.301(10), of the Department's Chapter 105 rules and regulations.

Figures depicting previously mined areas are located within the Mining Summary Report included with this permit submission. Shapefiles are included on the enclosed CD.

- 13. Related to the preceding item, revise your profile drawings to show the limits of the previously mined areas. In addition, provide the depth of cover over the mine workings that will be crossed by the proposed pipeline, and the distance between the mine workings and the proposed pipeline. Use this information to evaluate and discuss the potential for a subsidence event, and the potential to create a mine water discharge, pursuant to Section 105.301(10), of the Department's Chapter 105 rules and regulations.*

The figures and requested information are provided in the Mining Summary Report, which is a stand-alone document included with this response to comment package.

- 14. To facilitate coordination between DEP's Waterways and Wetlands Program and DEP's Mining Program, identify all areas where the proposed pipeline will cross active mining permit boundaries, pursuant to Sections 105.14(b)(6) and 105.24(a), of the Department's Chapter 105 rules and regulations.*

The profile drawings for resources located in previously mined areas have been revised and are included in the “HDD Subsurface Investigation Reports” document that is included with this package.

- 15. The current alternatives analysis provides general information about the route development process; however, revise this narrative to provide a detailed analysis of the alternative locations and routes that were considered to avoid or minimize adverse environmental impacts, pursuant to Section 105.13(e)(l)(viii), of the Department's Chapter 105 rules and regulations.*

A revised alternatives analysis is provided as Section 9 of the Comprehensive Environmental Assessment, which is a stand-alone document provided as part of this submission. Each HDD location is also discussed within this report. Additionally, subsidence is discussed in the Mining Summary Report and the HDD Alternatives Analysis, which is an Appendix to the “Inadvertent Returns from HDD: Assessment, Preparedness, Prevention and Response Plan”.

- 16. Related to the preceding item, Module S3 indicates that approximately 18.5 of the 45 miles (41%) of the proposed pipeline are parallel to or adjacent to existing right-of-ways (ROWs). Evaluate and discuss whether there might be additional opportunities to co-locate the proposed pipeline within existing ROWs, to potentially reduce the proposed adverse environmental impacts, pursuant to Sections 105.13(e)(l)(viii), 105.16(a) and 105.18a, of the Department's Chapter 105 rules and regulations.*

When the first desktop routing analysis was done, the Project was routed along existing ROWs, both above- and below-ground, to the highest extent practicable to attain the Project goal of extending pipe from existing facilities to the proposed Shell Pennsylvania Petrochemical Plant (Plant) in Monaca. Paralleling existing ROWs would reduce tree clearing and habitat fragmentation. The Mariner West line, which Sunoco leases from MarkWest, was originally investigated because it runs generally north from the Houston fractionation facility to a river

crossing west of the NOVA Chemical plant. The Mariner West route does deviate slightly to the west at the southern end and then routes back to the east around the Pittsburgh International Airport before tracking in a northerly route towards the Plant. The Mariner West route was determined to vary more westerly than what was ultimately proposed and would net in approximately six more miles of pipeline to reach Monaca from Houston and would be significantly costlier to construct than the selected route by approximately 20 percent. However, as discussed below, SPLC routed the line along Mariner West, whenever feasible.

Once this initial route was proposed, the utilities were contacted to determine if it was feasible to share ROWs and topographic surveys were conducted to determine if it was physically feasible to install an additional pipeline in that location. Additionally, all landowners were contacted to ask permission to locate the Project on their property.

There were several occasions where there was no longer enough room to safely construct another pipeline within the same corridor. Often, pipelines are constructed on ridgetops. Constructing another pipeline within a narrow ridgetop could risk exposing the existing pipeline. Additionally, constructing in these types of areas puts contractors at serious safety risks.

The Project was proposed to follow the Mariner West for as much as practicable. The Project follows Mariner West from approximately Houston MP28.7 to Junction to Monaca MP1.7 at Mowry Road, which is approximately four miles. This includes the crossing at Service Creek, adjacent to the Ambridge Water Authority raw water line. The crossing at Mowry Road was difficult due to site distance and there were sites of cultural significance identified between Mowry Road and Raccoon Creek that needed to be avoided or HDDed. Additionally, following Mariner West closer to the Petrochemical Plant put the Project closer to the known bald eagle nest and would have required a very difficult HDD across Raccoon Creek. As a result, the Project needed to deviate after Mowry Road.

SPLC attempted to route the Project along several FirstEnergy and Duquesne Light overhead electric line ROWs. This was done whenever practicable. However, FirstEnergy stated that the pipeline was too close to their towers and had to be shifted in several locations. Additionally, proper safety measures need to be taken when constructing near overhead electrical lines and certain setback distances must be maintained.

Additional information concerning SPLC's routing analysis can be found in Section 9.1 of the CEA.

17. *Evaluate and discuss whether your project will affect the Montour Trail, pursuant to Section 105.14(b)(5) of the Department's Chapter 105 rules and regulations. Based upon this evaluation, consider alternative locations, routings and designs to avoid or minimize any adverse environmental impacts to the Montour Trail, as needed. If needed, develop a plan to mitigate for any unavoidable impacts to the Montour Trail. You may want to contact the Montour Trail Council, to find out more information about this trail.*

PLC and The Montour Trail Council and the Panhandle Trail (Trails) representatives met several times throughout the Project planning process. Representatives for both told SPLC that the Trails are rails-to-trails conversions for public use such as hiking, running, biking, horseback riding, and other various activities associated to public trail use in the region. As former railroads, they are linear in nature and extend for significant distances. This portion of the

Montour trail when completed will be 47.4 miles and the Panhandle Trail is 29 miles long. As such, it is very difficult to route around a lengthy linear development. As a result, it was determined to meet the Project purpose, routing around either of these trails was not feasible. Therefore, negotiations needed to be made with each entity.

Agreements between the railroads and the Trails indicate that the railroads provide certain control over the land and, in most cases, the railroads have the right to return the trails to railroad activity—though it is unlikely for this to occur. The Trails relied on the negotiating party (agent of the railroads) to develop and coordinate the language and crossing design for the pipeline easements.

SPLC and the Trails agreed that the best crossing method would be to utilize conventional bore or horizontal directional drill (HDD) methods. These trenchless construction methods would minimize direct trail surface impacts and disturbance and would not interfere with normal daily operation and trail use. More information regarding crossing the Trails via HDD is provided in the HDD Feasibility Analysis, which is included as part of the “Inadvertent Returns from HDD: Assessment, Preparedness, Prevention and Response Plan” provided as part of this response to comment package.

SPLC has also informed the Trails that if at any time the Trails need be temporarily closed for any reason during pipeline construction, operation, and/or maintenance, SPLC will notify the Trails and will provide alternate, temporary access to the users of the trails. That way, trail use will not be impeded.

The Comprehensive Environmental Assessment (CEA) that is included as part of this response to comment package discusses the Trails in more detail. Additionally, Section 9 of the discusses route alternatives.

Below is language that is included in the various easement agreements between SPLC and the Trails.

Panhandle Trail (Washington County)

Shell asserts and affirms that the construction of the Pipeline on the acquired right of way will be exclusively by horizontal bore. Shell further asserts and affirms that neither the entrance or exit sites for said horizontal bore will be on Owner’s property.

Shell acknowledges that the permanent easement across Owner’s property does grant Shell unlimited ingress and egress over Owners property to (i) conduct typical inspections as required by DOT and/or (ii) to perform repair and/or replacement activities during normal operation and maintenance of the pipeline (iii) in case of any emergency situation which may develop that will require Shell’s presence for repairs and or safety monitoring. Shell asserts and affirms that all other entrance onto Owner’s property by Shell will first be approved by Owner in writing, including but not limited to, the possible use of temporary work space.

Montour Trail

The Licensee agrees that it shall not excavate within five (5) feet of any Trail or third-party facilities or systems without prior notification and coordination with the owner of such facilities or systems.

The Licensee may not enter upon the Property until the method of installation and all related matters have been approved by the Trail.

Licensee shall at all times be obligated to promptly maintain, repair and renew the facilities; and shall, upon ten (10) working days' notice in writing from the Trail and requiring it to do so, or immediately in the event of an emergency, make such repairs and renewals thereto as may be required by the Trail.

The rights granted to the Licensee under this Agreement are non-exclusive and the Trail reserves and excepts unto itself the paramount right to continue to occupy, possess and use the Property and the area of the Facilities for any and all purposes which do not unreasonably interfere with or obstruct the rights granted to the Licensee in this Agreement.

The licensee shall operate and use the facilities in accordance with all rules and regulations of the Trail and all governmental authorities, and in a manner that will not interfere with or endanger any property, facilities, traffic, operation, maintenance, employees, or patrons of the Trail or of others occupying or using the property.

18. *The Washington County Natural Heritage Inventory, available from the PA Natural Heritage Program website, identifies the Raccoon Creek Floodplain Biologically Diverse Area and Raccoon Creek Landscape Conservation Area in or near your project area. Evaluate and discuss the potential for your project to affect these areas, pursuant to Sections 105.14(b)(4 and 12), of the Department's Chapter 105 rules and regulations.*

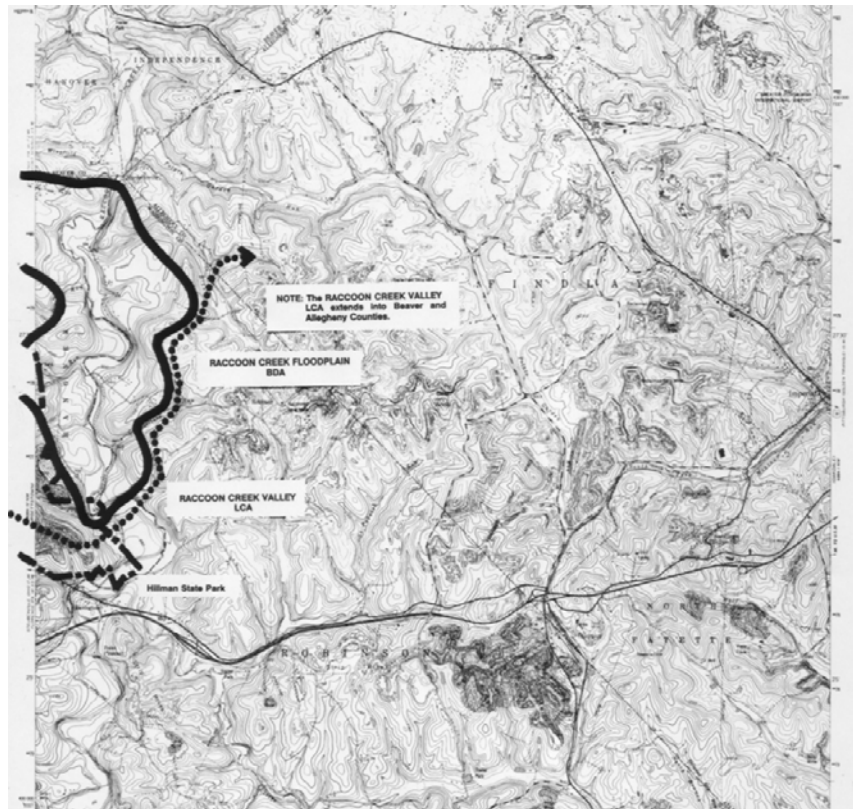
Under §105.14(b)(4) the Department must use the effect of the dam, water obstruction or encroachment on regimen and ecology of the watercourse or other body of water, water quality, stream flow, fish and wildlife, aquatic habitat, instream and downstream use and other significant environmental factors. Under §105.14(b)(12) the Department must review secondary impacts associated with, but not the direct result of, the construction or substantial modification of the dam or reservoir, water obstruction or encroachment in the area of the project and in areas adjacent thereto and future impacts associated with dams, water obstructions or encroachments, the construction of which would result in the need for additional dams, water obstructions or encroachments to fulfill the project purpose.

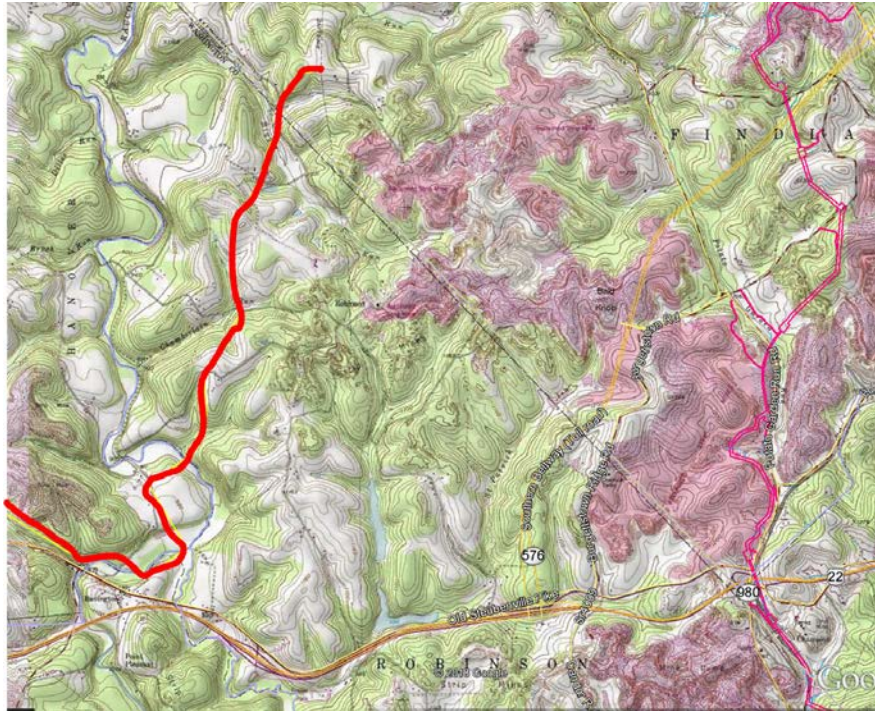
There will be no dams associated with this Project. All of the water obstructions/encroachments will be temporary in nature as each resource will be restored to original contours following construction. No above-ground permanent watercourse or wetland fills are proposed for this Project.

The Washington County Natural Heritage Inventory (January 1994) describes Raccoon Creek Valley Landscape Conservation Area (LCA) as a very large tri-county LCA that links a minimally developed, largely forested landscape at the juncture of Allegheny, Washington and Beaver Counties. Included in Washington are several significant natural communities containing unique plant and animal species. It is listed as an area of Exceptional Significance. The Raccoon Creek Floodplain BDA is located within this area, as seen on the below screenshot taken from the County Inventory. The Washington County Natural Heritage Inventory identifies the Raccoon Creek Floodplain Biologically Diverse Area (BDA) as a large, diverse floodplain area containing floodplain forest and floodplain swamp communities as well as two plants and one animal of special concern in Pennsylvania. It is considered a site of Exceptional Significance.

Neither of these boundaries is mapped on the PHNP mapper. The Natural Heritage Inventory Report is from 1994 and shows the boundaries depicted on a USGS topographic map—see first screenshot below, clipped from the report. Using topographic lines to draw the outer boundary for LCA in Google Earth (red) with the Project layer turned on (pink in the second screen shot below), the Project is not located within the LCA. The Project is approximately three miles from the LCA at its closest location. The topography is diverse between the Project Area and a review of area topography indicates that no streams crossed by the Project will flow into the LCA. Accordingly, given the distance, current land use, and the diverse topography between the Project Area and LCA and BDA, there should be no impacts to the LCA or BDA.

There is always the possibility that a future project may cross through these areas and connect to the Project. However, at present, SPLC is unaware of any future projects that plan to cross this location. The Inventory Report states that there is a sensitive species located in this area that relies on older trees for breeding and cover. This is most likely referring to a bat species. Proper consultation with the USFWS and the Pennsylvania Game Commission would need to be conducted if a project were to go through this area to ensure no impact to this species would occur. The Inventory Report also refers to two plants of special concern in the area. The plants of special concern in Pennsylvania have changed significantly since this document was written in 1994 due to increased botanical work in the county so it would be difficult to determine what these species are. However, proper consultation with the Department of Conservation and Natural Resources would need to occur before a project was to go through this area to ensure no listed botanical species are impacted. Also, provided that existing disturbed areas and the most up-to-date Best Management Practices (BMPs) were utilized, a new project would be unlikely to have a permanent adverse effect on the area.





19. *The proposed project is located within the Raccoon Creek Valley & State Park Important Bird Area (IBA). Evaluate and discuss the potential for your project to affect this IBA (see the National Audubon Society website for more information about this IBA), pursuant to Sections 105.14(b)(4 and 12), of the Department's Chapter 105 rules and regulations.*

Section 105.14(b) states what the Department must consider when reviewing applications and subsection (b)(4) considers the effect of the dam, water obstruction or encroachment on regimen and ecology of the watercourse or other body of water, water quality, stream flow, fish and wildlife, aquatic habitat, instream and downstream uses and other significant environmental factors. Subsection (b)(12) is concerned with the secondary impacts associated with but not the direct result of the construction or substantial modification of the dam or reservoir, water obstruction or encroachment in the area of the project and in areas adjacent thereto and future impacts associated with dams, water obstructions or encroachments, the construction of which would result in the need for additional dams, water obstructions or encroachments to fulfill the project purpose.

According to the National Audubon's website the Raccoon Creek Valley and State Park Important Bird Area (IBA) encompasses 108,341 acres within Beaver, Allegheny, and Washington counties. Raccoon Creek State Park is 7,323 acres and is located within this IBA. Approximately 23 miles of the Project is located within the IBA, which is approximately 303 acres of construction workspace, less than 4% of the total IBA acreage which will come down to 140 acres (approximately 2%) upon completion of the Project tied to the permanent ROW.

PADEP advised SPLC and AECOM on June 1, 2018 to call the Audubon Society regarding the IBA. AECOM called the Southwestern Pennsylvania office on June 12,

2018 and left a voicemail message with the person responsible for the IBAs. A return call was not received, and another voicemail message was left on June 18, 2018 and to date a return call has not been received. AECOM conducted an analysis of the IBA utilizing what data is available on the Audubon's website.

Per the IBA data, several waterfowl species have been documented at Raccoon Creek State Park; however, the Project is not traversing this state park. The only waterbody large enough within the Project area to support these types of waterfowl is potentially the open water at the Beaver County Conservation District property; however, an outlet has been installed at the far end of the lake to restore the property to a wetland as opposed to a lake, as it was originally designed. Ducks were observed during one of the field visits to the District property; however, they appeared to be domesticated ducks that likely were introduced to the property and were not native waterfowl.

Per the Audubon Society, the Raccoon Creek Valley acts to funnel migratory birds north and south. Migratory birds are protected under the Migratory Bird Treaty Act (MBTA), which as stated in the permit application, was discussed in the Bald Eagle report. Additionally, when practicable, SPLC co-located the Project with other utilities in existing ROWs in an effort to minimize tree clearing and further reduce impacts to birds. The bald eagle is currently protected under the Bald and Golden Eagle Protection Act (Eagle Act or BGEPA) and the MBTA from activities and habitat modifications that constitute "disturbances" under these acts, when and where such disturbances interfere with the ability of eagles to breed, nest, roost, and forage.

Threatened and endangered species consultations were conducted with all applicable agencies during the Falcon permitting period. This includes the USFWS and the PGC, which are tasked with regulating activities that may affect federal and state-listed bird species, respectively. This also includes the DCNR, which besides botanical species and terrestrial insects, is also responsible for unique habitats. All threatened and endangered species clearances have been obtained, as documented in the permit application. The USFWS clearance includes the Montgomery Dam bald eagle nest that is located within the IBA, but outside of the Project Area. PGC clearance includes the state-listed northern harrier and short-eared owl; however, their identified habitat is not located within the IBA.

Although there will be tree removal for the Project, less than 2% of the IBA will be permanently disturbed due to pipeline construction and installation. As stated throughout the permit application and this response to comment package, there will be no permanent fill impact to wetlands or waterbodies; however, there will be some conversion impact to PSS and PFO wetlands. All aquatic resources will be returned to pre-construction contours following construction. For the minimal conversion of forested and shrub wetlands to herbaceous within the limits of the permanent ROW, SPLC will complete compensatory mitigation offsite to mitigate for this habitat change. During construction, SPLC will employ BMPs as described in the ESCGP-2 permit. In addition, EIs will be on site during construction to provide assurance that all permit conditions are being followed and all BMPs are properly installed and maintained until restoration of the construction workspace is complete. The four-acre and 101-acre lakes located within the IBA and discussed on the Audubon's website, are not being crossed by the proposed Project and every effort was made to co-locate the Project alongside existing utilities.

Given the temporary nature of construction during pipeline projects, the proper use and implementation of BMPs to keep sediment from leaving the Project site or entering wetlands or watercourses, the effort to co-locate the pipeline where practicable, and the fact that all jurisdictional agencies related to the management of rare, threatened, and endangered species and sensitive habitats have been consulted and have provided clearances, SPLC believes the Project will not negatively impact the IBA.

20. *The Comprehensive Environmental Assessment (CEA) in Module SI of your Environmental Assessment makes references to various, other sections of your environmental assessment. Revise your CEA to pull all of this information together, into a comprehensive assessment that analyzes alternatives, impacts, mitigation and antidegradation for all structures and activities associated with the project, in accordance with 25 Pa. Code Chapters 93, 95, 102 and 105, since the proposed project involves water obstructions or encroachments that are located in multiple counties.*

The items relating to alternatives, impacts, and mitigation from the modules in the Environmental Assessment have been pulled out of their respective modules and sections as required in the EA instructions and combined into a stand-alone Comprehensive Environmental Assessment for all three counties and is included with this response to comment package. Additionally, an anti-degradation analysis has been prepared as an appendix to the CEA.

21. Related to the preceding item, for projects proposing to impact wetlands, the applicant must assess the cumulative impact of the project and other existing and potential projects, including direct and secondary impacts that are permanent in nature, as required by 25 Pa. Code §§ 105.13(e)(l)(x), 105.18a(a)(6) and 105.18a(b)(6). To address the Chapter 105 cumulative impacts requirements, consider identifying and evaluating other existing and potential projects permanently impacting each wetland resource as follows:

- a. Other Existing Permanent Project Impacts - Existing permanent wetland impacts in, along, across or projecting into the wetland resource. **A Cumulative Impact Assessment has been prepared for all three counties and is included as an Appendix to the CEA. These impacts are discussed in the document and Tables B-1 and B-2 summarize these impacts.**
- b. *Other Potential Projects Proposing Permanent Impacts- Future anticipated permanent wetland impacts in, and along, across or projecting into the wetland resource including:*
 - (i) *Proposed but not yet built permanent wetland impacts proposed by the applicant; or*
 - (ii) *Other permanent wetland impacts from projects proposed by other entities authorized by valid DEP Chapter 105 Water Obstruction and Encroachment Permits (issued in the last five years, i.e. not expired), but not constructed.*

These items are also discussed in the CIA document. Tables 4.1 and 4.2 summarize potential cumulative impacts from the proposed Project and other projects within the Project Area.

22. *While your project summary indicates that disturbed areas will be seeded and mulched upon placement of the proposed pipeline, revise your mitigation plan to describe, in detail, how you will restore wetlands and streams that are disturbed during construction, pursuant to Section 105.13(e)(l)(ix), of the Department's rules and regulations. This narrative should include details about seed mixes, shrubs and trees that will be used to restore wetland areas, stream banks and riparian corridors. The selected vegetation should be native species, or provide a justification as to why a non-native species is selected.*

Appendix F in the Resource Environmental Solutions (RES) “*Permittee-Responsible Mitigation Plan for the Falcon Ethane Pipeline Project Neshannock Creek Restoration Site*” that was submitted in the original permit application contains the planting plan and wetland enhancement seed mix. Trees and shrubs proposed for planting within the mitigation areas include: black willow, silky dogwood, box elder, common elderberry, buttonbush, winterberry, ninebark, sycamore, swamp white oak, silver maple, and red elm. These are all species that will do well at the restoration site and would be seen in wetlands located in southwestern Pennsylvania. The RES mitigation plan is only for the conversion wetland impacts.

Herbaceous wetland and stream restoration is discussed in detail in the Chapter 102 ESCGP-2 documents. Detail DET01 in the E&S package contains tables listing the species to be planted in both uplands and wetlands. They are native mixes. Ernst Seed’s Wetland/Stream Crossing Mix (ERNMX#154) will be utilized at wetland and stream crossings and includes PA Ecotype forbs. Seed mixtures are also listed in Table 2 of the ESCGP-2 permit application

To facilitate native vegetation restoration, any grading and stump removal conducted within wetlands will be limited to the trench line, except as where required to create a safe and level workspace. Woody stems and trees within the temporary workspace will be cut to no further than ground level and the stumps will be left in place for regrowth.

Wetland topsoil will be stripped and segregated to retain the seed stock and hydric soils. As described in the permit application, all stream crossings will be conducted “in the dry.” Substrate will be removed and segregated during construction. Topsoil stockpiles shall be stabilized with temporary seed and mulch as specified in the seed mix tables located within the E&S plan.

Following construction, the segregated material will be returned and the ground will be returned to its original grade. If it is not the growing season, a temporary seed mix and mulch—as specified within the E&S plan—will be applied to the site. If winter stabilization is required, permanent stabilization, with the seed mixes listed in the E&S plan, will commence at the beginning of the next growing period. Permanent stabilization may occur after October 15, provided weather conditions are favorable. Fertilizer and lime will not be used in stream or wetland areas. In wetland areas, erosion control blankets will be installed within 50 feet of the wetland, 100 feet if it is an EV wetland. No erosion control blankets will be installed within the wetland boundary.

Following construction, routine vegetation mowing or clearing will be limited to within the permanent 50-foot ROW. No routine vegetation maintenance will be conducted over the centerline between HDD entry and exit points.

23. *Provide a copy of the Mitigation Bank Credit Availability letter from First Pennsylvania Resource, LLC (FPR), which has been signed by a person who has been designated to sign documents, on behalf of FPR, pursuant to Sections 105.1 8a(b)(7) and 105.20a, of the Department’s Chapter 105 rules and regulations.*

The permanent stream and wetland fills have been removed from this project (see the discussion in Responses 32c and 32n in the Beaver County Response to Comments Package; therefore, there is no longer a need for a Mitigation Bank Credit Availability Letter.

24. To facilitate the Department's review of your mitigation plan, provide a table that lists, describes and quantifies all permanent impacts to wetlands and watercourses, other than those that are associated with utility line stream crossings, pursuant to Section 105.13(e)(1)(ix), of the Department's Chapter 105 rules and regulations. Regarding the proposed utility line stream crossings, include in this table all permanent impacts to wetlands that will result in a permanent conversion of the wetland type.

There are no permanent fills associated with this project; there will only be permanent conversion impacts. A table listing each of these wetlands separately is located below.

Resource	Classification	Impact (ft ²)	Impact (ac)
W-PA-160406-MRK-001	PSS	396	0.01
W-PA-170413-RCL-005	PSS	2,347	0.05
W-PA-170214-CBA-005	PFO	2,228	0.05
TOTALS		4,971	0.11

25. Pursuant to Section 105.13(e)(1)(ix), of the Department's Chapter 105 rules and regulations, provide the following information, regarding the proposed Permittee-Responsible Mitigation Plan for the Falcon Ethane Pipeline Project Neshannock Creek Restoration Site:

- a. Since the Neshannock Creek Restoration Site includes other existing Permittee-Responsible Mitigation (PRM) sites, modify Figure 2 in Appendix A of your mitigation plan, or provide a table or some other means, to identify these other existing PRM sites and any associated Water Obstruction and Encroachment Permits from DEP. **Figure 2 in Appendix A has been revised and is included in the revised Permittee-Responsible Mitigation Plan for the Falcon Ethane Pipeline Project Neshannock Creek Restoration Site (Plan) included as Attachment H.**
- b. Related to the preceding item, provide a master restoration plan for the entire Neshannock Creek Restoration Site and describe how your currently proposed PRM site fits into this master plan. **The proposed Falcon site will be situated along a ditched watercourse, an existing PRM site, and a wetland enhancement area; existing wetlands will surround the entire Falcon site.**
- c. Demonstrate how your proposed PRM site will replace the functions and values of the wetlands that will be affected by the proposed pipeline project. **The functions and values are discussed on pages 8 and 9 of the Plan included in Attachment H.**

***Please note that only pages 8 through 17 and Figures 2, and 10 have been revised and are included in this attachment. Please replace the original submitted documents with these revised documents. ***

26. To facilitate the Department's review of the "Shell Pipeline HDD Procedure" document, dated September 2017, provide the location and resource crossing number for the "List of HDDs," in PA, that are listed on page 1 of this document, or provide some way to cross reference this list with the aquatic resource impacts tables, pursuant to Section 105.14(b)(6) and 105.301(10) of the Department's Chapter 105 rules and regulations.

Washington County has four HDDs, HOU-01 through HOU-04; HOU-04 does not cross any aquatic resources. A table showing Resource Crossing Number, Resource Name, and HDD Number is provided below.

RC #	Resource Name	HDD Number
18	S-PA-151026-MRK-001	HOU-01
	S-PA-160302-MRK-003	
19	S-PA-160302-MRK-003	
23	S-PA-151210-MRK-001	HOU-02
35	S-PA-151012-MRK-001	HOU-03
36	W-PA-151012-MRK-002	

27. *Related to the preceding item, revise your "Shell Pipeline HDD Procedure" document to include such items as an HDD site feasibility analysis, inadvertent return risk assessment, water supply protection, agency contact information, etc., pursuant to Sections 105.14(b)(6) and 105.301(10) of the Departments Chapter 105 rules and regulations. The preceding list is not all inclusive, but lists some of the items that should be addressed in your document. The Department is available to meet with you, to discuss the content of your document.*

The "Shell Pipeline HDD Procedure" has been revised to include a feasibility analysis and risk assessment. It also includes a letter of professional opinion, an alternative construction method analysis, water supply monitoring plan, geotechnical investigation reports, notification and drilling resumption protocol, and tactical response plans. It is now titled "Inadvertent Returns from HDD: Assessment, Preparedness, Prevention and Response Plan." It has been included as part of this response to comment package.

28. *Related to the preceding item, a stand-alone attachment should be created to address the pre- boring geologic evaluation of the existence and potential to impact local drinking water supplies or aquifers around the boring location, pursuant to Sections 105.13(e)(l)(x), 105.14(b)(5) and 105.301(10)of the Department's Chapter 105 rules and regulations. The plan needs to include what measures will be employed to verify that no supplies or aquifer are impacted (i.e. pre- and post-water quality quantity analysis). The plan should specify what notifications and remediation measures will be employed if there are impacts.*

A Water Supply Plan is included as an Appendix to the "Inadvertent Returns from HDD: Assessment, Preparedness, Prevention and Response Plan" provide as part of this submission.

29. *Evaluate and discuss the potential for your proposed project to encounter areas underlain by a) carbonate bedrock (i.e. areas susceptible to sinkhole formation) and b) landslide prone areas, during construction. Evaluate and discuss precautions and construction methods that will be utilized during construction, where these areas will be encountered, pursuant to Section 105.14(b)(l l) of the Department's Chapter 105 rules and regulations.*

The "Slope Stability Investigation and Mitigation Plan" and the "Carbonate Rock Analysis" have been prepared as stand-alone documents and are included with this response to comments package.

30. *Pursuant to Sections 105.13(e) and 105.13(e)(l)(i, iii, viii & x), of the Department's rules and regulations, provide the requested information or evaluate and discuss the feasibility of:*

- W-PA-160407-JLK-003 (RC-1);
- S-PA-160406-MRK-002 (RC-3, Westland Run Crossing 1);
- (W-PA-160406-MRK-006 (RC-6);
- W-PA-170112-MRK-002 (RC-8);
- S-PA-160406-MRK-002 (RC-9, Westland Run Crossing 2);
- W-PA-160406-MRK-001 (RC-9, PSS wetland),
- W-PA-160406-MRK-002 (RC-10); and
- S-PA-160229-MRK-001 (RC-11).

The LOD reduction at RC-1, RC-8, the PSS wetland at RC-9, and RC-10 removed the resources completely from the LOD; therefore, these resources are longer impacted. Revised plan view mapping is provided in Attachment I, the revised impact table is included as Attachment J, and revised site-specific drawings are included as Attachment K. Revised E&S drawings are provided in the updated E&SCP included with this response to comments package.

- b. *Adjusting route to avoid or minimize impacts to W-PA-151210-MRK-001 at RC-22.*

The landowner was contacted to determine if the route could be adjusted in this location. The landowner was amenable to shifting the route in this location. This shift removed impact completely to stream S-PA-161205-CBA-001; the shift also removed permanent ROW impact to its floodway and reduced the temporary ROW impact by 1184ft². The shift minimized impact to W-PA-151210-MRK-001 by approximately 4,959ft² and the wetland is now crossed at the narrowest location. Revised plan view mapping is provided in Attachment I, the revised impact table is included as Attachment J, and revised site-specific drawings are included as Attachment K. Revised E&S drawings are provided in the updated E&SCP included with this response to comments package.

- c. *Adjusting route between MP 6.0 to 7.5 to avoid or minimize associated impacts.*

The route between MP6.0 and 7.5 was re-analyzed to determine where changes could safely be made to reduce impacts. As in the area between MP0 and 1.5, joint-drag sections were utilized when it was safe to do so. The following impact minimizations occurred:

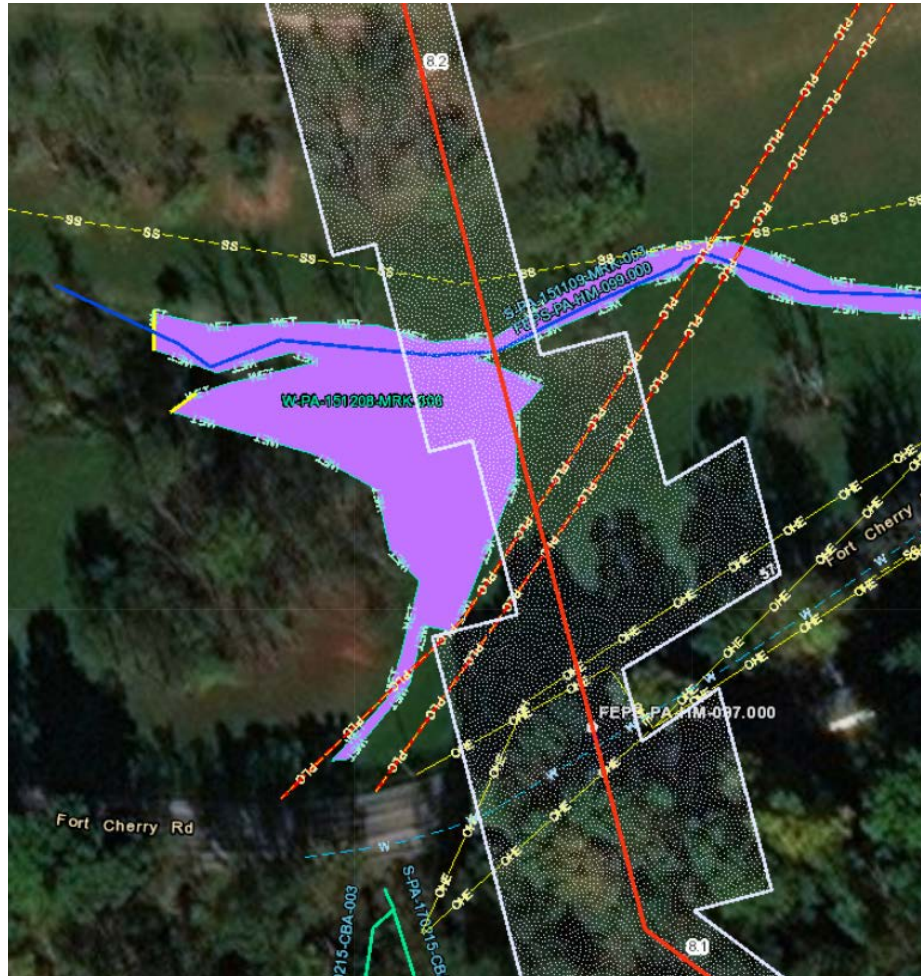
- S-PA-151215-MRK-004 (RC-24)
- W-PA-151215-MRK-003 (RC-25)
- W-PA-170214-CBA-003 (RC-27)
- S-PA-151208-MRK-003 and W-PA-170413-RCL-005 (RC-30)
- W-PA-170215-CBA-002 (RC-31)

The LOD reduction at RC-30 eliminated any impact to W-PA-170413-RCL-005, which is a PSS wetland. Revised plan view mapping is provided in Attachment I, the revised impact table is included as Attachment J, and revised site-specific drawings are included as Attachment K. Revised E&S drawings are provided in the updated E&SCP included with this response to comments package.

- d. *Adjusting route to avoid or minimize impacts at RC-32.*

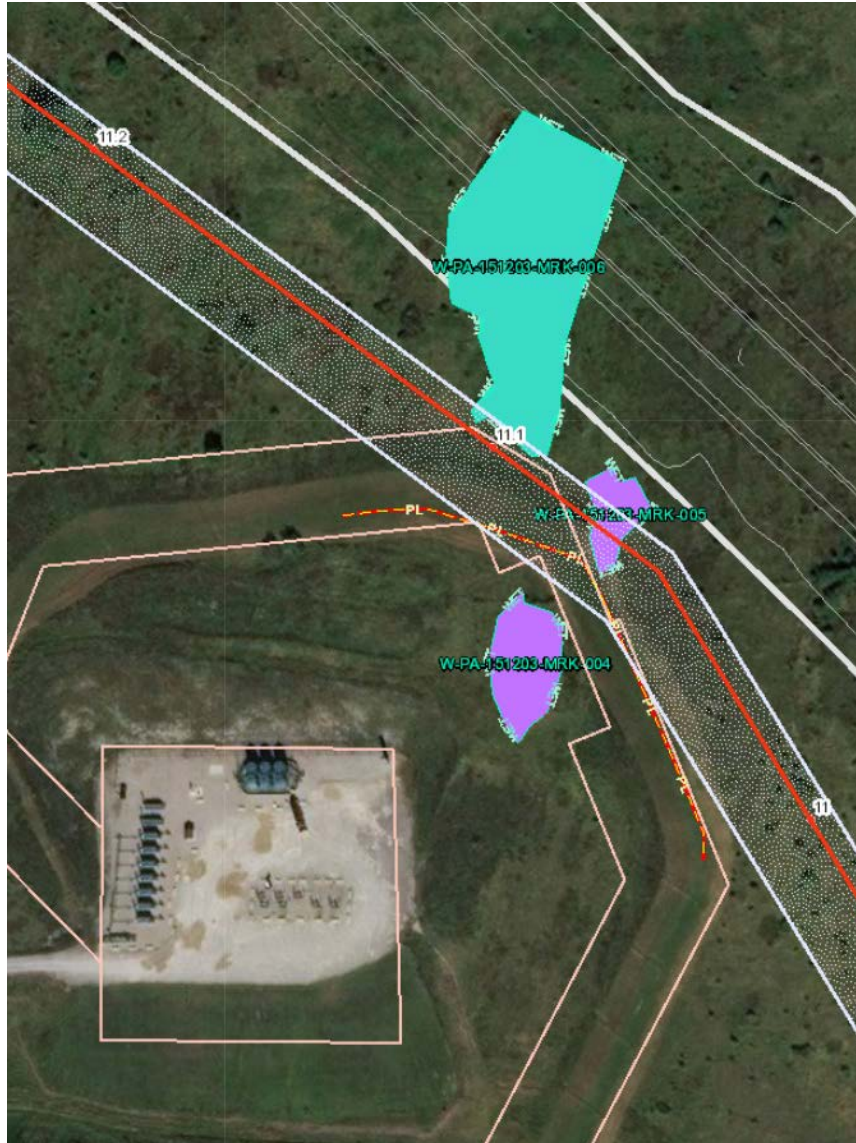
electric lines—very stringent safety precautions need to be followed when working around overhead electric lines. Other utility lines are also depicted on the screenshot: the red and yellow dashed “PLC” lines represent other pipelines, the blue “W” line represent a water line and the yellow “SS” represents a sewer line. The LOD was notched in however at this location to minimize the impact to the wetland by approximately 6068ft².

Revised plan view mapping is provided in Attachment I, the revised impact table is included as Attachment J, and revised site-specific drawings are included as Attachment K. Revised E&S drawings are provided in the updated E&SCP included with this response to comments package.



- f. *Adjusting route to avoid or minimize impacts at RC-40 and RC-41.*
 This was the only location that the pipeline could be routed through this area. This is due to the existing MarkWest pipeline (red and yellow dashed line in the screenshot below) and facility in the screenshot below. The LOD for the facility is in light peach below. Due to the facility and the slope down to the facility, the Project could not shift further south. Additionally, the Southern Beltway Project will be constructed through this area. The thick white lines in the screenshot below represent the outer LOD for that project. As a result, the Project could not be shifted north. Given that the wetland is located on the pipe side of

the LOD, the LOD cannot be necked down here. However, the permanent easement was reduced, which minimized impact in the permanent ROW and increased impact in the temporary ROW. The impact table in Attachment J has been revised to show the new impact numbers.



31. As you are proposing to withdraw water from streams for hydrostatic testing, and then propose to discharge the water after use, please provide a detail or typical drawing of both the intake and the outfall measures, so DEP can determine whether these are temporary or require inclusion as impacts, pursuant to Sections 105.14(b)(6) and 105.24(a), of the Department's Chapter 105 rules and regulations. Also provide an approximate location of with withdraw and discharge locations. It should be noted that you will be required to obtain authorization from DEP's Clean Water Program for these discharges. Provide documentation that you have initiated this process. You may contact Mike Fifth, Environmental Engineering Manager, Clean Water Program at 412-442-4000 or mfifth@pa.gov.

A detail of the intake and outfall is included as Attachment L. Water will be withdrawn from Raccoon Creek and the Ohio River in West Virginia. It is understood that a PAG-10 permit is required for hydrostatic test water discharge. A PAG-10 permit was submitted to Mr. Mike Fifth on July 27, 2018. The permit contains information on where the water will be withdrawn and discharged. Delivery confirmation can also be found in Attachment L.

32. *In addition to your "Shell Pipeline HDD Procedure" document, provide a copy of your Preparedness, Prevention and Contingency (PPC) Plan for your pipeline project, pursuant to Section 105.14(b)(6) of the Department's Chapter 105 rules and regulations.*

The PPC plan is included with this comment/response package and was original submitted with the ESCGP-2 application.

33. *Changes or modifications to this application and supporting documentation will need to also be reflected in the narrative and drawings for the Chapter 103 permit application (DEP File No. ESG00007170003), pursuant to Section 105.14(b)(6) of the Department's Chapter 105 rules and regulations.*

The narrative and drawings for the ESCGP-2 package have been updated and are being sent under separate cover. Revised drawings have been included with this package.

Yours sincerely,



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