Permittee-Responsible Mitigation Plan for the FM100 Pipeline Project

Wildcat Hollow PRM Site

Hamlin Township, McKean County, Pennsylvania
National Fuel Gas Supply Corporation

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1.0 Introduction

First Pennsylvania Resource, LLC. (FPR), a wholly-owned subsidiary of Resource Environmental Solutions (RES), is proposing this Permittee-Responsible Mitigation (PRM) Plan on behalf of National Fuel Gas Supply Corporation (NFGSC or Permittee) to compensate for unavoidable impacts to waters of the United States (U.S.) associated with the FM100 Pipeline Project (Project). FPR has prepared this PRM Plan in accordance with the *Compensatory Mitigation for Losses of Aquatic Resources Final Rule* issued on April 10, 2008 as detailed in 33 CFR §332.4(c) of the Federal Register (Volume 73, Number 70). This document addresses the required mitigation that will be provided at FPR's Wildcat Hollow PRM (Wildcat Hollow or PRM). The proposed mitigation will offset temporary and permanent conversion impacts to Exceptional Value (EV) and non-EV Palustrine Scrub-Shrub (PSS) and Palustrine Forested (PFO) wetlands occurring in McKean and Potter Counties, Pennsylvania (PA) through vegetative enhancement of existing EV wetlands associated with a Naturally Reproducing Trout Stream (Marvin Creek). **Subsequent to the original September submittal, the PRM Plan and proposed boundary has been revised to compensate for additional mitigation needs.**

The PRM, located in Hamlin Township, McKean County PA, is approximately 1.5 miles northeast of Hazel Hurst and 8.5 miles southwest of Smethport, PA. A site location map that shows the location of the PRM is provided as Figure 1: Site Location Map (Appendix A: Figures). Figure 1: Site Location Map also depicts the approximate distance of the proposed PRM Site in relation to the Project. Figure 2: PRM Area Map, shows the location of the PRM Site.

The physical address and approximate center coordinates of the PRM Site are provided in Table 1 below.

Table 1: PRM Site Location Information	
Physical Address:	13207 US-6, Mt Jewett, PA 16740
Coordinates:	41°43'7.158"N 78°33'29.619"W

Driving directions from Mansfield PA are as follows:

1. Head west on US-6 W/E Wellsboro St toward S Main St (12.7 miles);
2. Turn left onto Main St (0.5 miles);
3. Continue onto PA-660 W/West Ave (2.6 miles);
4. Continue onto PA-362 W (5.3 miles);
5. Turn left onto US-6 W (34.2 miles);
6. Turn left onto N Main St (0.3 miles);
7. Turn right onto Chestnut St - Pass by Dollar General (on the right) (0.2 miles);
8. Continue onto US-6 W/Eulalia St - Continue to follow US-6 W - Pass by Fox's Pizza Den (16.8 miles);
9. Turn left to stay on US-6 W (9.4 miles);
10. Turn left onto US-6 W/Marvin St - Continue to follow US-6 W (8.7 miles);
11. Destination will be on the right

FPR and the Permittee request to be contacted prior to visiting the PRM Site, as landowner coordination is required.

FPR will act as the mitigation services agent (Agent) on behalf of the Permittee. On behalf of the Permittee, FPR will be responsible for implementation of the PRM plan in addition to meeting performance standards, monitoring, and long-term management of the property as described in 33 CFR §332.3(l). The Permittee will remain responsible for legal duties and responsibilities associated with wetland mitigation as necessary

in accordance with PA Department of Environmental Protection (DEP) Chapter 105 Rules and Regulations regarding wetland replacement criteria guidelines and 33 CFR § 332.3.

2.0 Objectives

Construction of the Project will result in temporary and permanent conversion impacts to EV and non-EV PSS and PFO wetlands. Mitigation will be required for the wetland impacts occurring in McKean and Potter Counties, PA. Table 2: Objectives Summary Table provides a summary of pre-and post-restoration resources for the PRM Site in addition to the mitigation requirements.

Table 2: Objectives Summary Table

PRM Site Pre- and Post-Resources				Mitigation Needs Summary			
Resource		Existing Acres*	Proposed Acres	Resource	Impact Area (Acres)	Mitigation Ratio	Mitigation Need (Acres)
Wetland (Acres)	PEM	4.59	0.00	EV PSS	1.85	1.75 :1	3.24
				Non-EV PSS	0.00	1.5 :1	0.00
	PSS	1.36	0.00	EV PFO	0.97	2.5 :1	2.42
	PFO	0.00	5.95	Non-EV PFO	0.14	2.0 :1	0.28
Totals		**5.95**	**5.95**		**2.96**		**5.94**

***Existing wetlands at the PRM Site are all considered EV due to their connection to Marvin Creek, a Naturally Reproducing and Stocked Trout Stream**

To ensure that an overall loss of wetland functionality does not occur, and to address potential temporal losses of the impacted wetland functions, a 1.5:1 mitigation ratio for permanent and temporary impacts to PSS wetland will be applied. A 2:1 mitigation ratio for permanent and temporary impacts to PFO wetlands will be applied. A 1.75:1 mitigation ratio will be applied for permanent and temporary impacts to EV PSS wetlands. A 2.5:1 mitigation ratio will be applied for permanent and temporary impacts to EV PFO wetlands. Calculations are shown in Table 2: Objectives Summary Table, above.

Existing PEM and PSS wetlands onsite are proposed for enhancement as part of the mitigation requirements. Native wetland herbaceous and woody plantings, coupled with invasive species control, will re-establish a healthy vegetative community that will contribute to the restorative success of the PRM Site. The proposed restoration activities will enhance the functions and values that the PRM Site wetlands already perform, while also meeting the mitigation needs for the impacted functions and values as a result of the proposed Project. Permanent protection of the PRM Site will maximize the long-term potential for successful and sustainable mitigation.

3.0 Site Selection

3.1 Mitigation Banking

Consistent with the Compensatory Mitigation Final Rule ("Final Rule"), which establishes mitigation bank credits as the preferred method of compensatory mitigation for impacts to aquatic resources of the U.S. (332.3(b)(2)), the Permittee first sought to purchase approved mitigation credits from a mitigation bank within the Upper Allegheny River Subbasin (Watershed 16) to compensate for the anticipated EV and non-EV PSS and PFO wetland impacts resulting from the Project. Although RES has proposed the Conneauttee Creek Mitigation Bank within Watershed 16, RES does not anticipate that bank credits in this watershed will be available within the Project's permitting timeframe.

3.2 In-Lieu Fee

In-Lieu fee crediting was not an option for the Project because no active In-Lieu fee programs were or are available.

3.3 On-Site Mitigation

To minimize impacts to aquatic features and habitat areas, the Permittee limited the width of the proposed construction limits of disturbance (LOD) and permanent easements to the greatest extent practicable. The narrowed easement does not allow room for on-site restoration, and not all property owners are interested in providing larger easements that would provide space for effective on-site restoration. Even with larger easements, which could allow for on-site restoration, not all the sites have land suitable for restoration. Restoration could be done outside of an area with a permanent easement; however this would not be acceptable mitigation as there is no guarantee this area would be preserved into perpetuity. The avoidance measure of using a narrow LOD thereby narrows the potential area available for resource restoration. Even if possible, small on-site restorations would provide minimal benefit to the local watersheds relative to the impacts proposed within the LOD.

Completing on-site mitigation would also create multiple, small, spatially separate PRM projects. These smaller isolated projects have been shown to be less ecologically beneficial, have a lower likelihood for long-term success and are more susceptible to invasive species due to increased edge effect. They also create an increased number of maintenance plans to be reviewed, increasing the long-term regulatory burden on the agencies by requiring reviews and field visits to multiple small restoration sites.

The Permittee therefore has determined that the on-site mitigation opportunities are less conducive to complying with the "no net loss" and/or "watershed approach" policy(s) commensurate with the Final Rule.

3.4 Local Watershed Restoration

The Project is linear, extending 29.5 miles and crossing 9 HUC 12 subwatersheds. It would not be feasible or ecologically beneficial to distribute the mitigation locally across small piecemeal sites in all of the impacted watersheds. The selected mitigation site is located in the same HUC 08 watershed (Subbasin 16) as the impacts, and portions of the Project fall within the same HUC 12 watershed (Marvin Creek, 050100010103) as the selected mitigation site.

3.5 Selected Mitigation Site

The selected PRM site is strategically located in the floodplains of a watershed that will benefit from the wetland enhancement efforts while ensuring optimal replacement of functions and values lost as a result of the Project. The existing conditions of the PRM Site wetland area make this an attractive site from a mitigation perspective. The PRM Site has been degraded through anthropogenic alterations including historic agricultural activities, pasture use, construction of roads, utilities, and a since-abandoned railroad. Surrounding land uses consist of residential homes, with large tracts of agricultural land and supporting infrastructure (livestock buildings such as farms and sheds). The adjacent Marvin Creek and unnamed tributaries (UNT) to Marvin Creek are designated as a cold water fishery (CWF) according to Section 93.9: Designated Water Uses and Water Quality Criteria of the PA Code Chapter 93: Water Quality Standards. Marvin Creek is also a Naturally Reproducing Trout Stream and is stocked in portions by the Pennsylvania Fish and Boat Commission. As a result, all wetlands along Marvin Creek area designated as EV and their restoration will replace EV wetland impacts associated with the Project.

Currently, the PRM Site is characteristic of a degraded PEM/PSS wetland/upland complex. The PRM Site was historically subjected to active livestock grazing, resulting in a heavily degraded ecological system. The construction of overhead utility lines and roads have also contributed to physical and hydrological alternations, as well as the dominance of invasive and non-native plant species, including multiflora rose (*Rosa multiflora*), reed canary grass (*Phalaris arundinacea*), and narrow-leaf cattail (*Typha angustifolia*).

The PRM Site will build upon many of the critical components of the Final Rule including the likelihood for success and sustainability, potential to maximize ecological uplift, the significance of the restored resources within the watershed, and the proximity of the impact and mitigation sites from a watershed perspective (both sites are in the Upper Allegheny Subbasin (Watershed 16). Providing functional benefits such as improvements to wildlife habitat, flood flow conveyance and alteration, nutrient removal/retention, invasive species removal, and long-term land protection will support healthy flora and fauna and aquatic resources

within the watershed. The likelihood of success and long-term ecological uplift were the most important factors that the Permittee considered.

The Permittee concluded that due to the ecological demands of the Project, entrusting the logistical and environmental aspects of compensatory mitigation to FPR would ensure the greatest likelihood of success and most effectively address watershed needs through off-site mitigation.

3.6 Congruence with Watershed Needs

Marvin Run is a tributary of Potato Creek within the larger Cole Creek watershed of northcentral PA. The mainstem of Potato Creek is a trout-stocked fishery (TSF) from it's source to Cole Creek. From Cole Creek to the mouth, it is designated as a Warm Water Fishery (WWF). The tributaries that join Potato Creek vary between CWF and HQ-CWF except for the South Branch of Cole Creek, which is designated as an Exceptional Value (EV) waterway. These waters are included in the Allegheny River Headwaters Conservation Plan, which was developed by the Western Pennsylvania Conservancy and the Allegheny Regional office of the PADCNR (PADCNR, WPC, 2011). Several of the management recommendation goals outlined in the plans strongly align with the goals of the Wildcat Hollow PRM, including: "Promoting the benefits of watershed protection and the use of best management practices," "Protecting ecologically sensitive lands," "Protecting area waterways while increasing wildlife habitat opportunities," "Enhance aquatic habitats," and "Reduce impacts caused by invasive and nuisance species." The PRM objectives also support the McKean County Conservation District's 2019 Annual Report, which presented a goal of "Protecting, Maintaining, and Improving Water Resources" (McKean County Conservation District, 2019).

The Allegheny River headwaters region includes 18.5 square miles of wetlands, 94 percent of which are woody wetlands. Forested wetland areas provide critical habitat for species of waterfowl, turtles, and an assortment of other wildlife, and play a critical role in improving water quality, controlling flood waters, groundwater recharge, and providing recreational opportunities. Forested wetlands in this region are threatened by deforestation, and hydrologic alterations such as draining and damming.

The Allegheny River headwaters region provides habitat for 80 species of concern (including 23 plants, 18 dragonflies or damselflies, nine butterflies, eight fish, seven birds, five mammals, five reptile and five mussels), one geologic feature, and four natural communities. Primary sources of impairment identified in the Plan include agriculture, development of dirt and gravel roadways, oil and gas infrastructure, and habitat destruction/decreased wildlife populations. The proposed enhancement measures will help to offset local impairments and further the goals outlined by the PADCNR, WPC, and McKean County Conservation District.

A site protection instrument (SPI) on the PRM Site will provide protection in perpetuity from development and/or other potentially degradative land use types. Additionally, the PRM Site is currently overgrown with invasive species, namely reed canary grass, and the scrub-shrub areas are dominated by monocultures of silky willow. The PRM Site enhancement activities will employ an intensive invasive species management plan to halt the spread of invasive species. Non-native vegetation will be removed from the PRM Site through chemical and mechanical control methods. Invasive species treatment areas will then be replanted with additional native shrubs and a native wetland herbaceous seed mix. Monocultures of willow will be thinned and replanted with a more diverse mix of wetland tree and shrub species.

As shown in Figure 3: Ecological Inventory Map (Attachment 1, Figures), the PRM Site is located several miles from three PA Natural Heritage Program (PNHP) County Natural Heritage Inventory (CNHI) identified Core Habitat areas and their Supporting Landscapes. The PRM is also centrally located to the Allegheny National Forest, State Game Lands Number 62, and the Elk State Forest/State Park Complex.

The enhancement of the degraded wetlands on-site represents an opportunity to improve and protect this resource and its larger watershed. Conservation measures in this area are more important now than ever as ownership fragmentation, potential future development, and continued agricultural land use present challenges to land conservation.

4.0 Site Protection Instrument(s)

The PRM Site will be protected by an SPI (in the form of a deed of restrictive covenant) in advance of the proposed activities outlined in this mitigation plan, ensuring the long-term protection of the site. The SPI will be recorded with the county courthouse after USACE/PADEP permit approval and with subsequent approval from the Permittee to move forward with mitigation. A sample of an SPI that would be filed upon permit approval is included as Appendix B: Site Protection Instrument. The SPI restricts activities that are incompatible with the objectives of the PRM Plan.

FPR will act as the initial long-term steward unless another qualified, watershed-focused, entity is willing to assume long-term stewardship responsibilities. FPR's heirs, assigns, or purchasers will be responsible for protecting lands contained within the PRM Site in accordance with the terms of the PRM plan, unless the lands are transferred or sold to a local, state, or federal resource agency or non-profit conservation organization.

Entrusting the PRM to a third-party SPI holder may commence only when FPR, the Permittee, and the agencies have mutually concluded that the PRM Site has achieved all its objectives and sufficiently satisfied performance standards, as described in Section 8.0: Performance Standards.

5.0 Baseline Data

Baseline site investigations were conducted to develop an appropriate functional mitigation plan for the PRM Project. These baseline site investigations yielded a significant amount of existing condition project information including, but not limited to the following:

- Waters of the U.S. delineation and GPS location of the preliminary boundary;
- Pennsylvania Wetland Condition Level 2 Rapid Assessment;
- Flora community composition data;
- Land-owner interviews relative to historical and present site conditions including land use practices;
- Pennsylvania Natural Diversity Inventory (PNDI) review (no hits);
- Extensive photo and field note documentation; and
- General documentation of site conditions

5.1 Land Use

Since approximately 1980, the PRM Site has been maintained as an open emergent dominated pasture with sections of scrub-shrub habitat throughout. Before then, the Site was utilized as farmland and heavy disturbance to the hydrology, vegetation, and soils were prominent. As depicted in Figure 4A: 1940 Historic Aerial (Appendix A, Figures) the PRM Site, and surrounding land, is characterized as agricultural farmland with a potential downstream wetland system including forested, scrub-shrub, and emergent vegetation surrounding Marvin Creek and its tributaries. This farming trend continued to at least, 1968 (Appendix A: Figures, Figure 4B: 1951 Historic Aerial & Figure 4C: 1968 Historic Aerial); but efforts appeared to have ceased at some point before 1990 (Appendix A: Figures, Figure 4D: 1990 Historic Aerial). As a result, existing habitat at the PRM Site has been actively altered, preventing succession to a forested wetland system.

The ecological resources have been and continue to be degraded through anthropogenic alterations including historic agricultural activities (i.e., land manipulation, road and drainage installation, and selective cutting), the construction and abandonment of a railroad, the installation and maintenance of utility lines, and the planting and maintenance of non-native pasture grasses.

5.2 Soils

Based on the United States Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) Web Soil Survey, the PRM Site is underlain by the Buchanan silt loam (BuC) and Philo silt loam (Ph) silt loams. These soil types are found on 0 to 3, 8 to 15, and 8 to 25 percent slopes landscapes. BuC soils are categorized as farmlands of statewide importance, found mostly on hillslopes, and are poorly and very

poorly drained. Ph soils are categorized as prime farmlands, poorly drained, and found mostly in floodplain locations. Figure 5: Hydric Soils Map is provided in Appendix A: Figures. The identified soils are typically documented in areas of depressions on till plains and are classified as hydric per the USDA-NRCS.

Field analysis indicated that partially hydric soils are dominant within the limits of the PRM Site. The soils documented across the PRM Site are generally comprised of a silt loam and consistently met the criteria for hydric soil indicator Depleted Matrix (F12).

5.3 Wetlands & Waterways

The PRM was delineated by FPR in September 2020. The Wetland and Waterbody Delineation Report, depicting the identified resources, is provided as Appendix C: Wetland Report. Appendix A, Figure 6: Topographic Map shows the topographic contours and elevations at the PRM Site. The PRM Site, which has a contributing drainage of approximately 13.92 square miles, drains to Marvin Creek, a CWF per Section 93.9: Designated Water Uses and Water Quality Criteria of the PA Code Chapter 93: Water Quality Standards. Marvin Creek is listed as attaining its designated use for aquatic life. A drainage area map is provided in Appendix A: Figures, as Figure 7: Drainage Area Map.

Portions of the site occur within a Federal Emergency Management Agency (FEMA) 100-year floodplain. One wetland categorized by the National Wetland Inventory (NWI) wetlands as a Freshwater Emergent Wetland (PEMC) is documented within the PRM Site. Natural Hydrography Dataset (NHD) data indicates that one blue-line stream (Marvin Creek) travels through the PRM Site.

5.4 Wetlands

The PRM Site consists of a relatively flat, floodplain upland/wetland mosaic, with both PEM and PSS wetlands bisected by Brites Road (Appendix A: Figures, Figure 8: Existing Conditions Map). Marvin Creek flows centrally through the wetland complex and all wetlands would have likely been one complex prior to the construction Brites Road. As Marvin Creek is a Naturally Reproducing and a Stocked Trout Stream, all hydrologically connected wetlands are considered to be EV according to 25 Pa. Code § 105.17. The wetlands are bordered by County Route 6 to the southeast and an abandoned railroad berm to the northwest. An overhead electrical ROW was installed within the wetland complex on both sides of Marvin Creek. Past construction of infrastructure, and a long history of agricultural use has resulted in degraded wetland communities that have been timbered, selectively cleared and grazed, and both physically and hydrologically impacted. Roadway and ROW runoff results in sedimentation and nutrient inputs resulting in the proliferation of invasive species.

The primary source of hydrology for on-site wetlands is groundwater augmented by surface runoff from adjacent streams and upland areas. In the PEM wetlands, dominant vegetation includes soft rush (*Juncus effusus*), grass-leaved goldenrod (*Euthamia graminifolia*), fox sedge (*Carex vulpinoidea*), and invasive reed canary grass in the herbaceous layer; occasional shrub pockets within the PEM wetlands include silky dogwood (*Cornus amomum*) and silky willow (*Salix sericea*). Within the PSS wetlands, the shrub layer is dominated by monocultures of either silky dogwood or silky willow; the dominants in the herbaceous layer include grass-leaved goldenrod, sensitive fern (*Onoclea sensibilis*), fringed loosestrife (*Lysimachia ciliata*), woolgrass (*Scirpus cyperinus*) and reed canary grass. Reed canary grass is dispersed throughout the complexes in smaller amounts but also localized in pockets which are complete monocultures. Wetland soils met the criteria for the Depleted Matrix (F3) and/or Redox Dark Surface (F6) hydric soil indicators.

5.5 PA Wetland Level 2 Rapid Assessment

The PA Wetland Condition Level 2 Rapid Assessment Protocol (PADEP, 2017) was used to evaluate the existing and post-restoration wetland conditions at the PRM Site. The results from the data were then used to ensure that the wetlands being impacted as a result of the proposed Project are adequately offset via the restoration of the PRM Site. The existing and post-restoration worksheets for the PRM Site are provided as Appendix D: PA Wetland Condition Level 2 Rapid Assessment Forms. A discussion of the results of the data are provided in Section 6.1 Functional Impacts and Proposed Functional Uplift below.

5.6 Rare, Threatened and/or Endangered Species Consultation

A Pennsylvania Natural Diversity Index (PNDI) Environmental Review was completed on September 1, 2020. The PNDI review indicated that no known impacts to threatened and endangered and/or special concern species and resources are anticipated within the Wildcat Hollow PRM Site. Therefore, no further coordination is required with the jurisdictional agencies. The most recent PNDI receipt is provided in Appendix E: PNDI Receipt.

6.0 Determination of Mitigation Needs

6.1 Functional Impacts and Proposed Functional Uplift

As previously mentioned, the PA Wetland Condition Level 2 Rapid Assessment Protocol (PADEP, 2017) was used to evaluate the existing and post-restoration wetland conditions at the PRM Site. The results from the data were then used to ensure that the wetlands being impacted as a result of the proposed Project are adequately offset by the restoration of the PRM Site. The existing and post-restoration worksheets for the PRM Site are provided as Appendix D: PA Wetland Condition Level 2 Rapid Assessment Forms.

The PRM Site post-restoration overall condition score was compared to a weighted average overall condition score of the Project impacted wetlands to ensure that the restoration site and activities adequately compensate for the Project impacts. As shown in Table 3: Summary of Project and PRM Site Wetland Condition Level 2 Rapid Assessment Overall Condition Index (CI) Scores below, given the significant uplift the proposed restoration will provide, the PRM Site provides mitigation above and beyond the mitigation needs of the Project.

Table 3: Summary of Project and PRM Site Wetland Condition Level 2 Rapid Assessment Overall Condition Index (CI) Scores

Project Weighted Average CI	**0.78**
PRM Pre-Restoration CI	**0.55**
PRM Post-Restoration CI	**0.78***

*Note: The proposed restoration will result in significant uplift of functions and values at the PRM Site.

As demonstrated in Table 3: Summary of Project and PRM Site Wetland Condition Level 2 Rapid Assessment Overall Condition Index (CI) Scores, the expected functional ecological uplift within the restored wetland will, in addition to the acreage calculations as described in Table 4: Mitigation Summary Table, meet the required mitigation offsets to the functions and values that will be lost as a result of the Project.

The impacted wetlands coincide with pipeline ROWs, well pads, and access roads, some agricultural and residential areas, and activities resulting from maintenance of these areas. Existing impacted wetlands exhibit stressors from vegetative alterations including compaction from ATV usage, ROW clearing, clear cutting or brush cutting (mechanized removal of shrubs and saplings) as well as hydrologic modifications in the form of culvert installation, ditching, draining, filling/grading, spring box/PVC pipe installation, microtopographic alterations and adjacent stream alterations. Sediment stressors include ATV use, rutting associated with access roads and maintenance of oil and gas infrastructure, and active grazing in agricultural areas. Additionally, some roadbed presence was noted within the wetland zone of influence. Wetlands that are anticipated to be permanently impacted may experience a net decrease in the following functions and values: wildlife habitat, production (nutrient) export, and floodflow alterations. The loss of wetland functions at the impact project will be offset accordingly at the PRM Site.

As demonstrated in the PRM Site PA Wetland Condition Level 2 Rapid Assessment post-restoration forms, removing invasive and non-native vegetation and re-planting the PRM Site with a diverse native-community will increase the community structure as well as the vegetative diversity and density of the PRM Site. Restoration of the PRM Site will improve the overall wetland zone of influence, as well as the vegetation condition indices. Plantings and seedings proposed across the PRM Site will improve the effectiveness of the wetland in reducing flood damage by increasing water retentions for prolonged periods following precipitations events and the gradual release of floodwaters. This improved functionality will help deal with

any sediment stressors that may be present within the immediate surrounding landscape. Furthermore, because sources of excess sediment exist within the surrounding landscape, the restored PRM Site wetland will be better capable of reducing or preventing degradation of water quality as it will act as a trap for sediments, toxicants and/or pathogens in runoff water. Increased vegetative diversity, including plant community structure, and density will be able to retain higher volumes of water than under normal or average rainfall conditions, supporting additional stability of the wetland ecological system and its buffering characteristics, and thereby providing social and economic value related to erosion and flood prone areas. Restoration activities proposed for the PRM Site will also enhance the quality and quantity of wildlife habitat available within the PRM Site.

The post-restoration wetland system will exhibit a diverse plant community structure and will offer a greater and wider range of usable products for wildlife. This will improve the value and functionality of the habitat for various types and populations of animals typically associated with wetlands. Native vegetation will encourage a greater opportunity for a diverse vegetative community to develop. Furthermore, appropriate native vegetation will improve the ecological integrity of the enhanced wetland, as the wetland will build resilience and become self-sustaining and able to accommodate stress and change. The PRM Site therefore plays an important role in the larger ecological system and encompassing watershed.

Current functionality is expected to improve considerably because of restoration efforts. The expected functional ecological uplift the wetland will exhibit as a result of restoration efforts, in addition to the acreage calculations as described in Section 7.0 Determination of Mitigation Needs, will both meet the required mitigation ratio and offset the functions and values that will be lost at the impact site.

6.2 Project Impacts

Construction of the Project will result in temporary and permanent conversion impacts to EV and non-EV PSS and PFO wetlands in McKean and Potter Counties, PA. Table 4: Mitigation Summary Table provided below presents the impacts and mitigation needs of the Project. A ratio-based method is employed to ensure that the PRM Site provides a sufficient acreage of mitigation to meet the functional replacement needs of the Project. Additionally, Section 5.5 PA Wetland Level 2 Rapid Assessments provides a discussion of the how the conditions at the PRM Site will be improved and will provide offset for those lost as a result of the Project.

As shown in Table 4: Mitigation Summary Table below, mitigation ratios based on impact type (temporary or permanent) and by wetland Cowardian classification type (EV and non-EV PSS or PFO) are being used to determine final mitigation requirements.

Table 4: Mitigation Summary Table

Resource	Impact Type	Impact Area (Acres)	Mitigation Ratio (X:X)	Mitigation Need (Acres)
PSS	Perm	0.0000	1.5:1	0.0000
	Temp	0.0000		0.0000
EV PSS	Perm	0.2565	1.75:1	0.4489
	Temp	1.5977		2.7959
PFO	Perm	0.0000	2:1	0.0000
	Temp	0.1431		0.2861
EV PFO	Perm	0.0211	2.5:1	0.0528
	Temp	0.9467		2.3668
Totals		**2.9651[1]**		**5.9506[1]**

1. Numbers in this table differ slightly from table 2 based off of difference in rounding.

6.3 Proposed Mitigation

In order to offset impacts to PSS and PFO wetland as a result of the Project, FPR will implement enhancement across **5.95** acres of PEM/PSS wetlands at the PRM Site. Wetland enhancement activities will focus on the removal of non-native and invasive species, which will be replaced with planted native wetland shrubs and trees, and supplemental plantings as detailed in Appendix A, Figure 9: Planting Plan Map. Over time, the trees and shrubs planted in formerly PEM wetland areas will undergo natural vegetative succession, developing into a dynamic PSS mosaic condition before ultimately maturing into a predominantly forested (PFO) condition across the site. Within the existing PSS wetlands, minor thinning and shrub/tree planting will assist this process and increase woody diversity above the existing monocultures. This natural process of forest succession captures both PSS and PFO impacts as the PRM Site approaches its final mature PFO state.

Although there are overhead electric utilities abutting the proposed restoration wetlands, no work is proposed within these areas, and no credit is requested and no performance standards will apply. The primary invasive species that will be targeted are *P. arundinacea*, *Typha angustifolia*, and *R. multiflora*. Clearing the understory of invasive herbaceous plants will open up the understory for the application of the native seed mix; which in the enhancement areas will be a mixed facultative-obligate seed mix to include species which will more adequately respond to the micro-topographic variations and associated hydrology noted onsite (Appendix A. Figure 9: Planting Plan Map).

No restoration is proposed for the abutting Marvin Creek stream channel but because this stream is hydrologically connected to the PRM Site wetlands, the benefits of the proposed mitigation will serve to buffer the downstream high-quality aquatic resources on-site, downstream, and in the larger watershed.

7.0 Mitigation Work Plan

7.1 Wetland Enhancement Approach

Restoration activities will include vegetative enhancement and protection of the wetland resources within the bounds of the PRM Site. Appendix A: Figures, Figure 9: Planting Plan Map shows the proposed restoration activities and proposed planting/seeding lists for the PRM Site. Ecological lift will be achieved by protecting the area from anthropogenic activities, restoring historic habitat conditions, planting and seeding of native plant species to restore the native plant community, and controlling invasive species.

The restoration work will focus on the establishment of a forested wetland complex throughout the enhancement areas. The proposed PFO wetland system is anticipated to exhibit a PFO dominated wetland mosaic at maturity and include pockets of PEM and PSS enclosed or surrounded by a forested canopy, adding to habitat heterogeneity and complexity. Based upon the noted hydrology on-site, trees and shrubs will be planted per their hydrologic needs and adaptability, with trees and shrubs that are able to tolerate wetter conditions installed in and around inundated and/or fully saturated areas.

Within the PEM areas, a high density of shrubs is proposed to encourage natural successional trends, aid in the shading out of invasive species as tree species grow and establish, and help establish woody stands in wetter conditions. Within existing PSS wetland areas, existing largely as a monoculture of silky willow (*Salix sericea*), minor thinning of the thickets will be performed strategically to allow invasive species management and planting of a more diverse assortment of tree species.

A floodplain seed mix (Ernst Mix #154) will be applied to all wetlands, focusing on areas in which diversity is low, and in all areas in which invasive species control is implemented to ensure native vegetation replaces the invasives. Woody enhancement plantings and wetland seed mixes as shown in Figure 9. Planting Plan Map, were chosen strategically to reflect species native to the physiographic region.

7.2 Wetland Enhancement Sequence

The wetland enhancement process will involve diligent invasive species management and replanting efforts. Initial restoration work, specifically during Year 1, will involve the application of an aquatic approved chemical herbicide to the invasive species within the PRM Site. Conservation area signage will able be

installed to demarcate the PRM Site boundaries. The PRM Site will be controlled either early or late in the growing season while native species are dormant to avoid adverse impacts to native vegetation present within the PRM Site. Following initial weed control efforts, and depending on the time of year and season, the initial seeding and planting will be conducted. If the time of year is late summer or fall, planting will be postponed until the appropriate planting window. During the appropriate planting window, native herbaceous plants will be installed following a weed control event. Weed control activities will require follow-up monitoring to ensure effectiveness of the control method(s).

After the initial weed control efforts, the site will be prepared for planting, which may include some selective mowing to allow for the installation of native plant seed and selective brush cutting within the PSS wetlands. A variety of native trees and shrubs will be planted at the PRM Site, as summarized in Figure 9. Planting Plan Map. Please note that the specific list may change slightly based on time of year that planting occurs and stock availability.

The initial planting will be conducted in a manner that will allow for continued mechanical weed control of the newly seeded enhancement area during the first three years of establishment. This is to prevent weedy species from becoming established within the PRM Site while the native seeds germinate and grow, and to ensure enough light gets through to the establishing seeds, trees, and shrubs. Selective trimming may be used as needed to ensure enough light is getting through to developing tree seedlings.

As described above, a facultative floodplain seed mix (Ernst Mix #154) will be applied to all wetlands, focusing on areas in which diversity is low due to the presence of invasive species to ensure native vegetation replaces the invasive at an approximate rate of 20 lbs/acre). Woody planting material will consist of a mix of wetland tree and shrub species (1-gallon containerized material) at a rate of 400 stems/acre in the PEM wetlands and 150 stems/acre within the PSS wetlands will be used across the PRM Site.

All planted woody vegetation is subject to a 75 percent survivorship performance standard for the monitoring period beginning Year 2, with Year 1 results providing a baseline, as detailed in Section 8.0 Performance Standards. Tree tubes will be used as needed in order to minimize mortality due to herbivory; however, it is anticipated that some of the smaller sized tree material will be lost to herbivory and other natural causes. This will be documented during the yearly monitoring periods. After the first year, the mortality from smaller trees and shrubs that have been installed will be used to determine replanting needs for the PRM Site's second year of establishment. The replanting will occur in a random pattern within the original gridded matrix to eliminate the appearance of planted "rows" and return the area to its natural condition. If during the 5 Year monitoring period of the PRM Site, the planted woody plant survivorship falls below 75 percent, supplemental plantings may be required to bring the PRM Site back into compliance with that success criterion.

7.3 Maintenance Plan

The PRM Site will be monitored and maintained by FPR, as described in Section 10: Monitoring Requirements. FPR will act as the willing agent to perform all duties associated with satisfying compensatory mitigation requirements. Through contractual agreement with the Permittee, FPR will commit to restoring, enhancing, and preserving wetland functions and maintain wetland habitats in accordance with the provisions in this PRM Plan.

Yearly maintenance will be documented in the annual monitoring reports along with a discussion of any anticipated maintenance events that will be needed the following year. In general, two to three site visits will be conducted annually during the first 3 years to monitor the PRM Site for invasive species and adapt the yearly maintenance plan as needed based upon these observations.

In general, maintenance will be heaviest during the first 3 years of establishment, and will entail mechanical weed control events, along with two or three chemical control events, all targeting invasive species. Maintenance will focus on controlling any pockets of invasive species that might still be present on-site and monitoring for the establishment of any new stands of invasive species. Control methods will be targeted to deal with the individual species as they are found and will include both mechanical and chemical control. The Agent projects that by the 4th and 5th years, the intensity of management efforts required will drop off

significantly as the native plant community will be relatively well established and resilient against the establishment and encroachment of invasive species.

In locations where wetland areas are too wet to allow mechanical access, manual chemical and mechanical weed control will be necessary. These areas can be threatened by more persistent perennial invasive species, specifically reed canary grass. Target weed control applied through spot application, coupled with mechanical weed control to stop any re-seeding will be the primary weed control techniques used in the wetter wetland areas.

8.0 Performance Standards

The PADEP and USACE will use the best professional judgment, visual observations, and monitoring reports to evaluate attainment of performance standards and to determine whether part or the entire PRM Site has successfully met the conditions of the permit. The following criteria will be used to assess project success:

In the vegetated wetland enhancement areas, success will be evaluated by:

a. Invasive herbaceous plant coverage will not exceed 20 percent during Year 1 monitoring and 10 percent each year thereafter.

b. Native herbaceous plant coverage will be at least 60 percent by the end of the first full monitoring year, 80 percent by the end of the second full monitoring year, and at least 85 percent each monitoring year thereafter.

c. Planted woody plant survivorship will be 75 percent following Year 1 monitoring. Plant survivorship will be determined from data collected through sampling at post-restoration monitoring locations.

d. Each year during the monitoring period of the PRM Site, all planted woody vegetation shall exhibit an average increase in height from the previous year.

e. By the fifth monitoring year (Year 5 following construction), trees will exhibit an average height of 8 feet and planted woody shrubs exhibit an average height of 5 feet or a density of 300 healthy stems per acre including volunteers, will be achieved.

9.0 Monitoring Requirements

On behalf of the Permittee, FPR will monitor the PRM Site to demonstrate compliance with the Performance Standards detailed in Section 8.0: Performance Standards. The representative monitoring plots are illustrated in Figure 10: Monitoring Map (Appendix A. Figures). Monitoring will follow the guidelines established below:

1. Visual Description. Visual descriptions will be provided for the entire site. Visual observations will also be used to evaluate the percentage of invasive species present. Photos will be taken at the wetland monitoring plot and included with each monitoring report. Photos will be taken at ground level, facing north, south, east and west. The same photo location points at the monitoring plot will be used to allow for pre and post restoration comparisons.
2. Vegetation. Immediately following initial planting, FPR will establish permanent monitoring plots for wetlands within the mitigation area. Plots will be marked using 8-foot PVC pipe anchored with a metal T-post at plot center and GPS coordinates will be recorded. At each monitoring plot, herbaceous vegetation will be monitored in a 5-foot radius plot and woody vegetation will be monitored in a 20-foot radius plot. Monitoring plots may be adjusted as necessary to accommodate PRM Site boundary limits, whereby adjustments will occur such that the same square footage is accounted for. One monitoring plot will be stationed per acre for this PRM Site, for a total of 6 monitoring plots encompassing both PEM and PSS community types. Permanent monitoring plot will provide data to evaluate the survival rate of planted vegetation including number, species, and survivorship. Reports will also reflect information regarding herbaceous plant species including the facultative wetland plant status [obligate (OBL) to upland (UPL)] per the USACE regional plant list

(Lichvar 2016) of each plant, the percent of each species, and whether the species is native, introduced, or invasive.

Monitoring activities will occur over a five-year period. During the first two years, monitoring will occur two times per year, once during the spring growing season (typically between April and June) and once during the fall growing season, typically between September and October. Monitoring will occur once annually during the fall growing season for the remaining three years for which monitoring is required. If all Performance Standards (Section 8.0: Performance Standards) have not been met in the fifth year, then a monitoring report will be required for each consecutive year until all standards have been successfully satisfied. Submittal of a final monitoring report (typically prepared the fifth growing season following completion of restoration activities, including planting) will be required.

Please note that additional site visits will occur as part of the maintenance activities at the PRM Site. Maintenance activities, as discussed in Section 7.3 Maintenance Plan, involve invasive species control, deer deterrent application, mowing and supplemental planting if necessary. These site visits serve as monitoring assessment opportunities that aid in determining both the effectiveness of earlier management activities and determine management techniques to be employed throughout the future establishment of the PRM Site.

9.1 Monitoring Reports

On behalf of the Permittee, FPR will submit monitoring reports to the PADEP and USACE following each formal monitoring event during the five-year monitoring period. As such, two monitoring reports will be submitted for the first two years monitoring occurs, and one monitoring report will be submitted for the remaining three years for which monitoring is required. Monitoring reports following a spring monitoring event will be submitted within 90 days of when monitoring occurs. Monitoring reports following a fall monitoring event will be submitted by December 31st of that year.

Monitoring reports will include all data collected from the year's monitoring events, which will be used for comparison to the PRM Site's progress towards the performance standards found in Section 8.0: Performance Standards. If the PRM Site achieves all its performance standards prior to year 5, an early release may be requested from the USACE and PADEP. Additionally, reports will include the following discussions: success to date; maintenance and management activities conducted during that year; the proposed maintenance schedule for the following year based upon the results of the yearly monitoring; and any problems which have been or are being encountered. At a minimum, monitoring reports should also include the following:

- Photos taken from ground level at the monitoring plot to document overall conditions;
- A description of the general condition of the seedlings, including survival and mortality, and if applicable, a discussion of likely causes for mortality;
- A description of vegetative communities developing at each monitoring plot;
- A description of the generalized degree and distribution of exotic/invasive species and whether they are seed bearing trees or seedlings;
- Identification of measures used to eradicate exotic/invasive species and document results of these efforts;
- A corrective action or redial action plan to address deficiencies in Performance Standards, if applicable.

9.2 As-Built Planting Plan

Following initial restoration activities, FPR will complete an as-built planting plan to show the general locations and quantities of the vegetative material that was planted. On behalf of the Permittee, FPR will submit the as-built planting plan as part of the first monitoring report to the regulating agencies following completion of the planting and first monitoring event for the PRM Site.

10.0 Long-Term Management Plan

To ensure the long-term sustainability of the project, FPR will perform maintenance and long-term management. The Permittee anticipates that these activities will be minimal, as the project is designed to be self-sustaining with limited management activities. Long-term stewardship activities will include inspections, controlling invasive species, and boundary maintenance. Given the strong financial standing of the Permittee, no financial assurances are deemed necessary at this time.

PRM Site boundaries shall be marked with a metal post which reads "Conservation Area" to prevent casual trespass while allowing necessary access. During each site visit, notes will be made as to the condition of signs, crossings, and property boundaries. Recommendations to repair or replace signage, crossings, or property boundary markers will be made, if applicable.

FPR will be the initial designated Long-term Steward charged with long-term management and maintenance responsibilities. Once the site has met the Performance Standards detailed in Section 8.0 Performance Standards, FPR will continue to carry out the long-term management responsibilities at least every other year for ten years. Long-term management and maintenance responsibilities will then cease, and the site will remain protected into perpetuity by the terms of the site protection instrument. FPR may submit a request to the agencies to cease long-term management and maintenance responsibilities prior to the end of the ten-year period.

11.0 Adaptive Management Plan

An adaptive management plan including contingency, and remedial responsibilities will be implemented in the event monitoring reveals that certain performance standards have not been met. In the event of a deficiency, FPR will provide notice to the PADEP and USACE. The notice will include an explanation for the deficiency, potential remedial actions that could be undertaken, an assessment of risks, and an assessment of any adjustments that must be made to the maintenance and monitoring regime.

Ecological restoration is in its essence the practice of adaptive management. Due to the multitude of factors that affect a restoration project in a given year, the practitioner needs to be constantly assessing the site, and reacting to changing conditions as the site develops and matures. Usually, yearly variations are relatively minor and within the parameters of a given project's performance standards. These normal variations are noted through regular site visits, yearly monitoring reports, and yearly maintenance activities. Occasionally, rare instances arise which bring a project far outside of the defined range of its performance standards and more intensive remedial action is required. This adaptive management plan forecasts a few potential situations that could cause the proposed PRM Site to be well outside the range of its defined performance standards and how those instances would be addressed.

Wetland Vegetation

As the PRM Site is currently designed as a wetland enhancement site, all wetland areas have been delineated in accordance with the *1987 USACE Wetlands Delineation Manual (Environmental Laboratory, 1987)* and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont (Version 2.0) (USACE, 2012).* Restoration activities at the PRM Site are not anticipated to result in changes that will negatively affect the hydrology; therefore, risk of hydrology changing is not expected. As such, risk of the seeding or planting failing due to hydrology is not anticipated, unless there is an unexpected and extreme drought. In that instance, any failure would be noted in the monitoring report, and replanting or reseeding would be conducted based on the results of the monitoring report.

Also of risk to wetland areas is a large-scale aggressive break out of invasive species. This risk is usually highest if grading is conducted in a restoration, as the exposed soil and lack of vegetative competition allows for easy succession by fast growing and aggressive invasive species such as reed canary grass. Since this PRM Project is using an enhancement approach, there is little to no risk of this happening. The existing native vegetation will be largely undisturbed and will be enhanced by supplemental plantings and seeding. Invasive species will be controlled on a yearly basis.

Invasive Species and Native Dominance

If at any point there was an intensive colonization of upland or wetland invasive species, which brought the total percent of invasive species well above the allowed performance standards, remedial action will be needed. The management technique used will be dependent on the type of invasive species colonizing the site (i.e. annual, or perennial, primary reproduction through vegetative spread or through seed). If the species are annual they can be managed via maintenance mowing and mechanical weed control methods to stop them from re-seeding into the site. After the seed bank is depleted, they drop out of the vegetative matrix. If they are perennial in nature, chemical herbicides need to be used; mechanical weed control is still used to stop further spreading through seed if they are a species that has high germination rates.

Once the invasive species control has begun, additional seeding or planting will need to be conducted to re-introduce a native plant community into the area of concern. Depending on the type of invasive species (i.e. broad leaf or monocot), replanting and reseeding strategies can be used to allow for continued chemical control of the invasive species in the area while still allowing the native species to germinate and develop.

The likelihood of this scenario is low; once established, native plant communities are actually quite resilient to invasion by invasive species as long as they are not disturbed or impacted. Invasive species issues on a restoration site tend to be most problematic during the first 2 years, because there is bare soil immediately available for germination and colonization immediately following construction, and there may be invasive species in the existing seed bank to germinate and establish. As previously stated, the primary restoration technique being used on this site is enhancement and therefore, the risk of this happening is extremely low.

In the event that the site is not meeting its performance standards for native herbaceous cover, additional seeding will be conducted. Again, the most important factor for establishing a healthy stand of upland herbaceous species is proper maintenance during the first 2 to 3 years of establishment, specifically mowing in upland areas. This ensures enough light is reaching the developing seedlings, while also eliminating competition from annual weedy species that may be trying to colonize the site. In the wetland areas, mowing cannot be conducted, but mechanical weed control with weed whips can be used.

12.0 References

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APPENDIX A
FIGURES

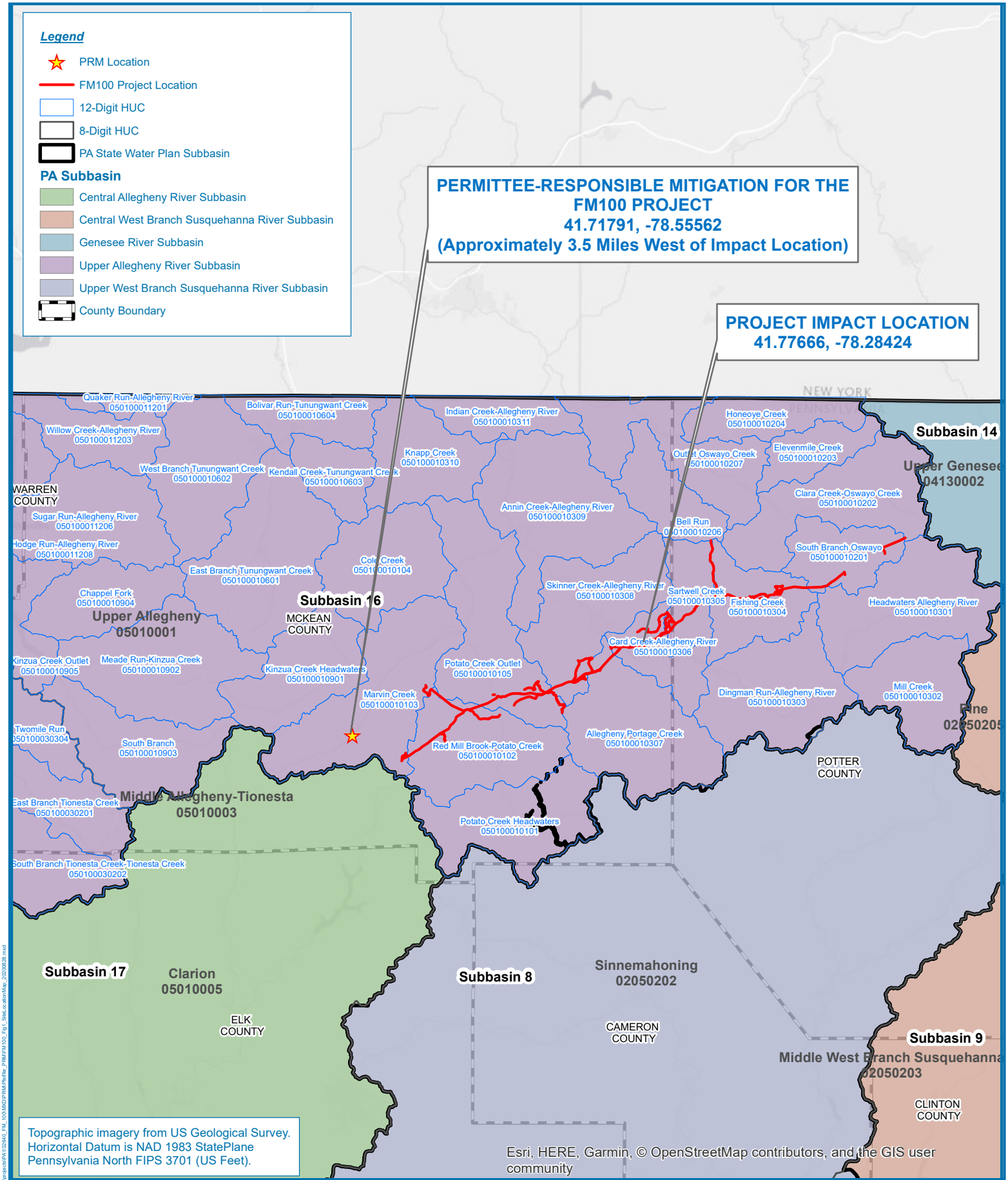

FIGURE 1

PERMITTEE-RESPONSIBLE MITIGATION FOR THE FM100 PROJECT

WILDCAT HOLLOW PRM SITE LOCATION MAP

MCKEAN COUNTY, PENNSYLVANIA

Date:	8/30/2020
Drawn by:	NDR
Checked by:	HK
	1 in = 7 miles

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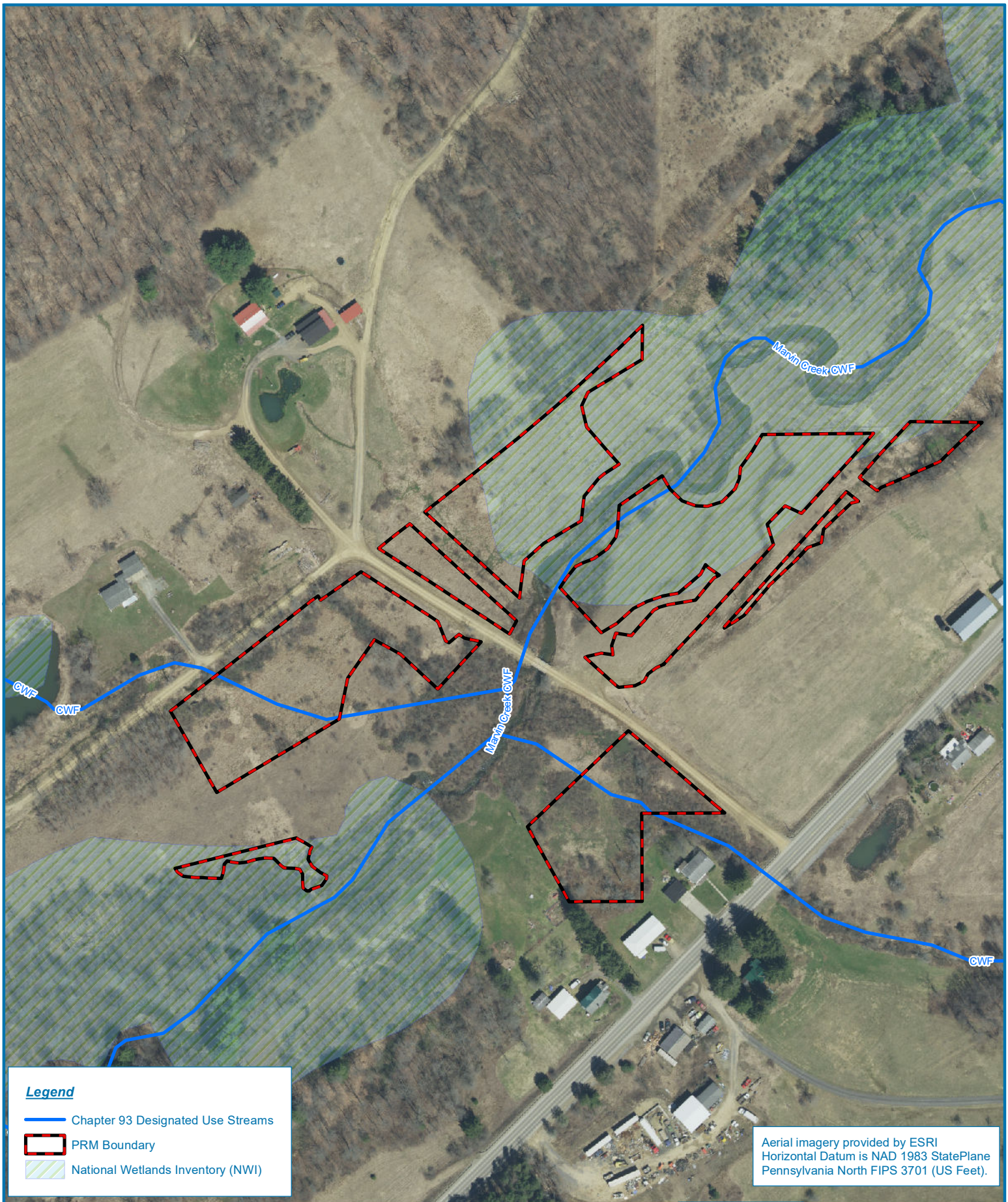

FIGURE 2

PERMITTEE-RESPONSIBLE MITIGATION FOR THE
FM100 PROJECT
WILDCAT HOLLOW PRM
PRM AREA MAP

MCKEAN COUNTY, PENNSYLVANIA

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Feet

Date:	12/15/2020
Drawn by:	NDR
Checked by:	HK
	1 in = 200 feet

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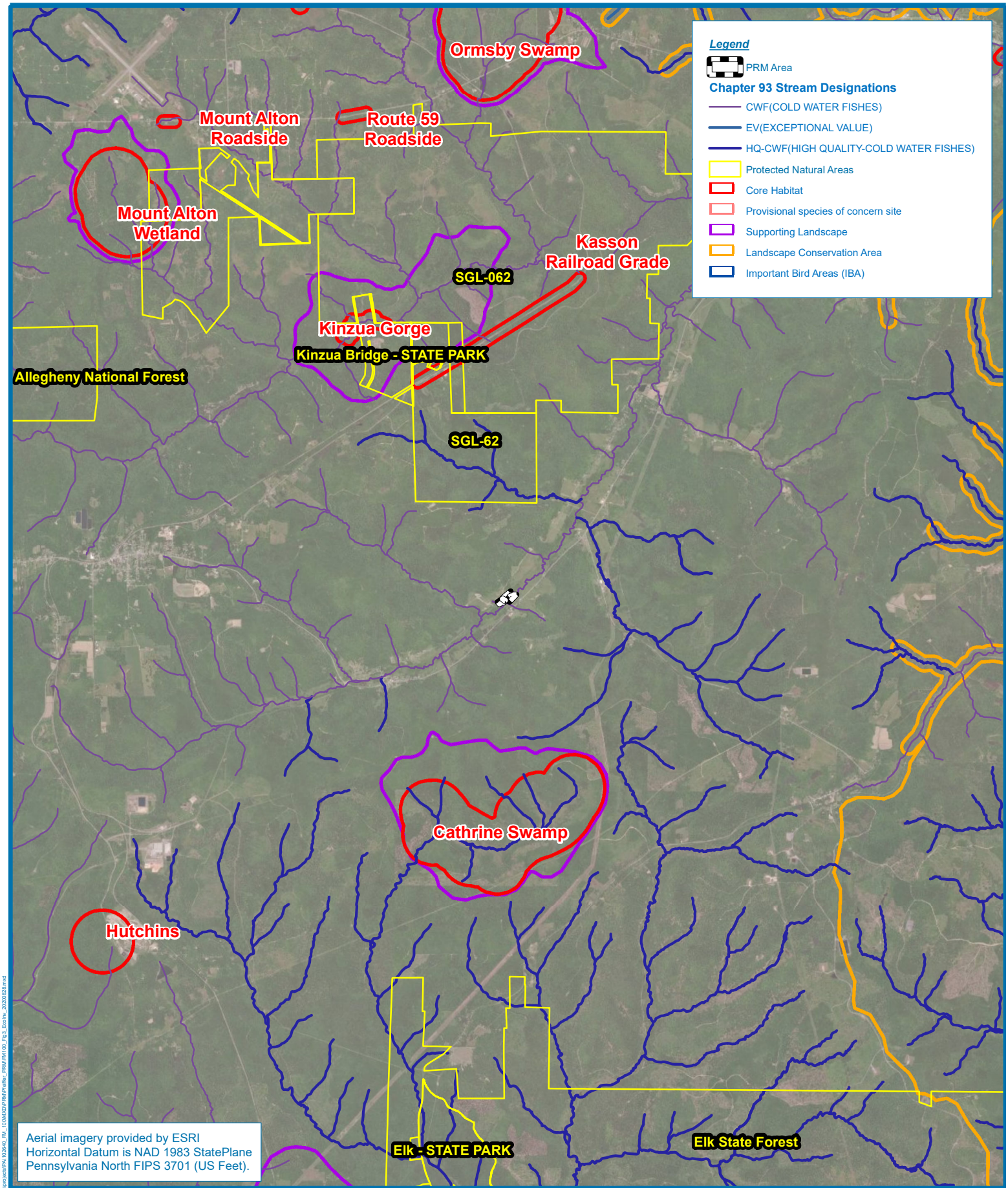

FIGURE 3

PERMITTEE-RESPONSIBLE MITIGATION FOR THE FM100 PROJECT
WILDCAT HOLLOW PRM
ECOLOGICAL INVENTORY MAP

MCKEAN COUNTY, PENNSYLVANIA

Date:	9/5/2020
Drawn by:	NDR
Checked by:	HK
1 inch =	7,166.67 feet

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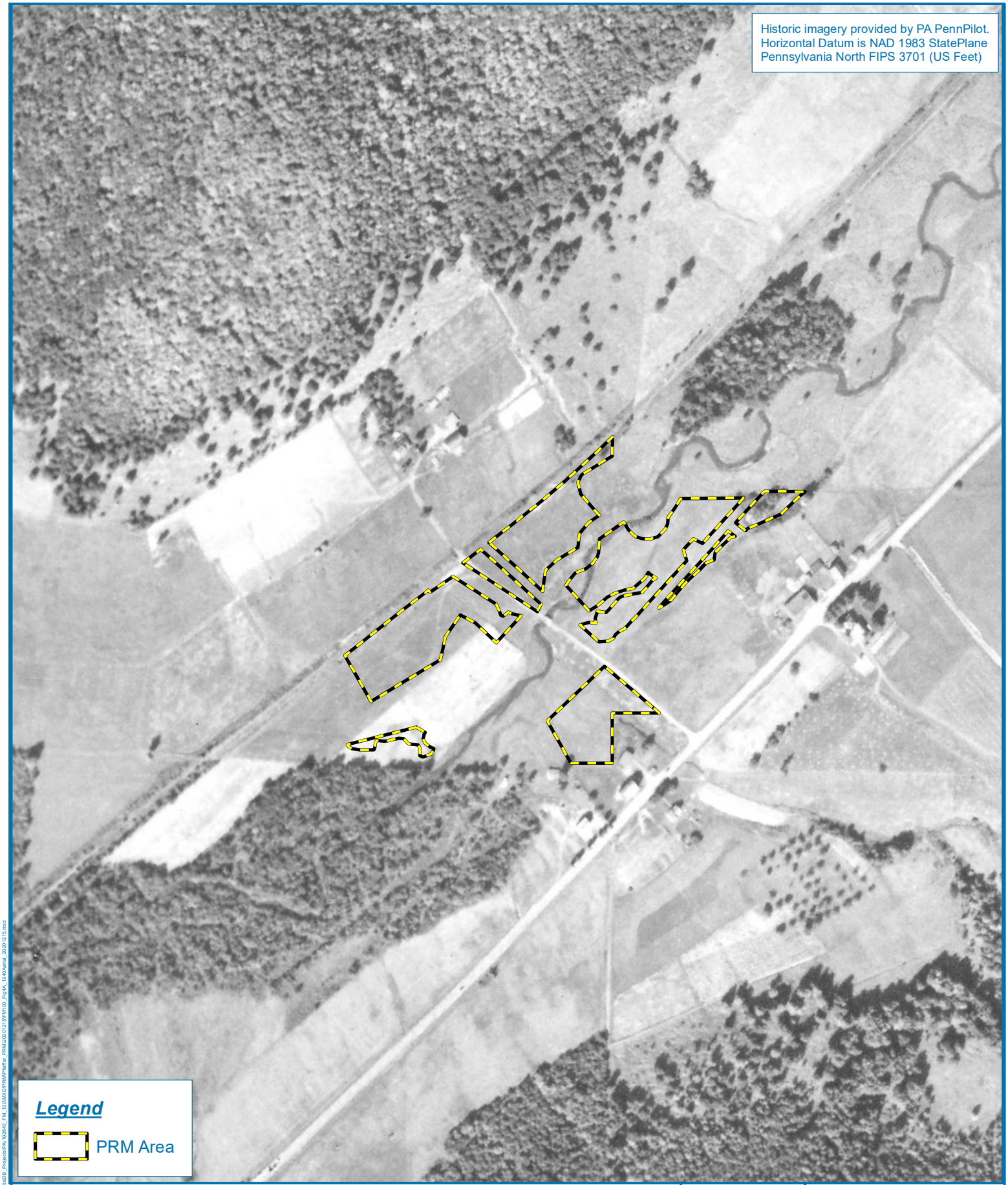

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FIGURE 4A

PERMITTEE-RESPONSIBLE MITIGATION FOR THE FM100 PROJECT
WILDCAT HOLLOW PRM
1940 HISTORIC AERIAL

MCKEAN COUNTY, PENNSYLVANIA

Date: 12/15/2020
Drawn by: NDR
Checked by: HK
1 in = 350 feet

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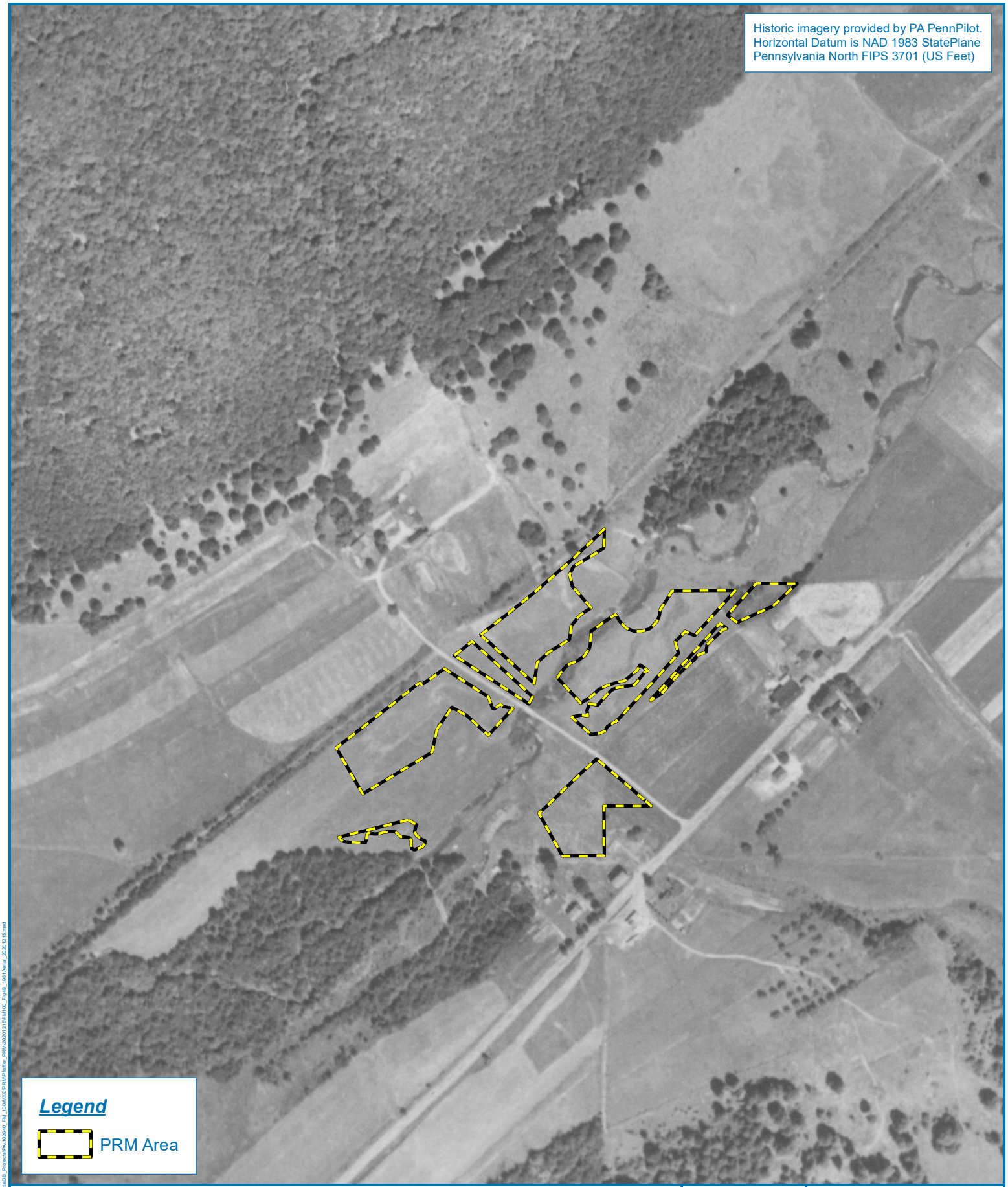

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Feet

FIGURE 4B

PERMITTEE-RESPONSIBLE MITIGATION FOR THE FM100 PROJECT
WILCAT HOLLOW PRM
1951 HISTORIC AERIAL

MCKEAN COUNTY, PENNSYLVANIA

Date: 12/15/2020

Drawn by: NDR

Checked by: HK

1 in = 350 feet

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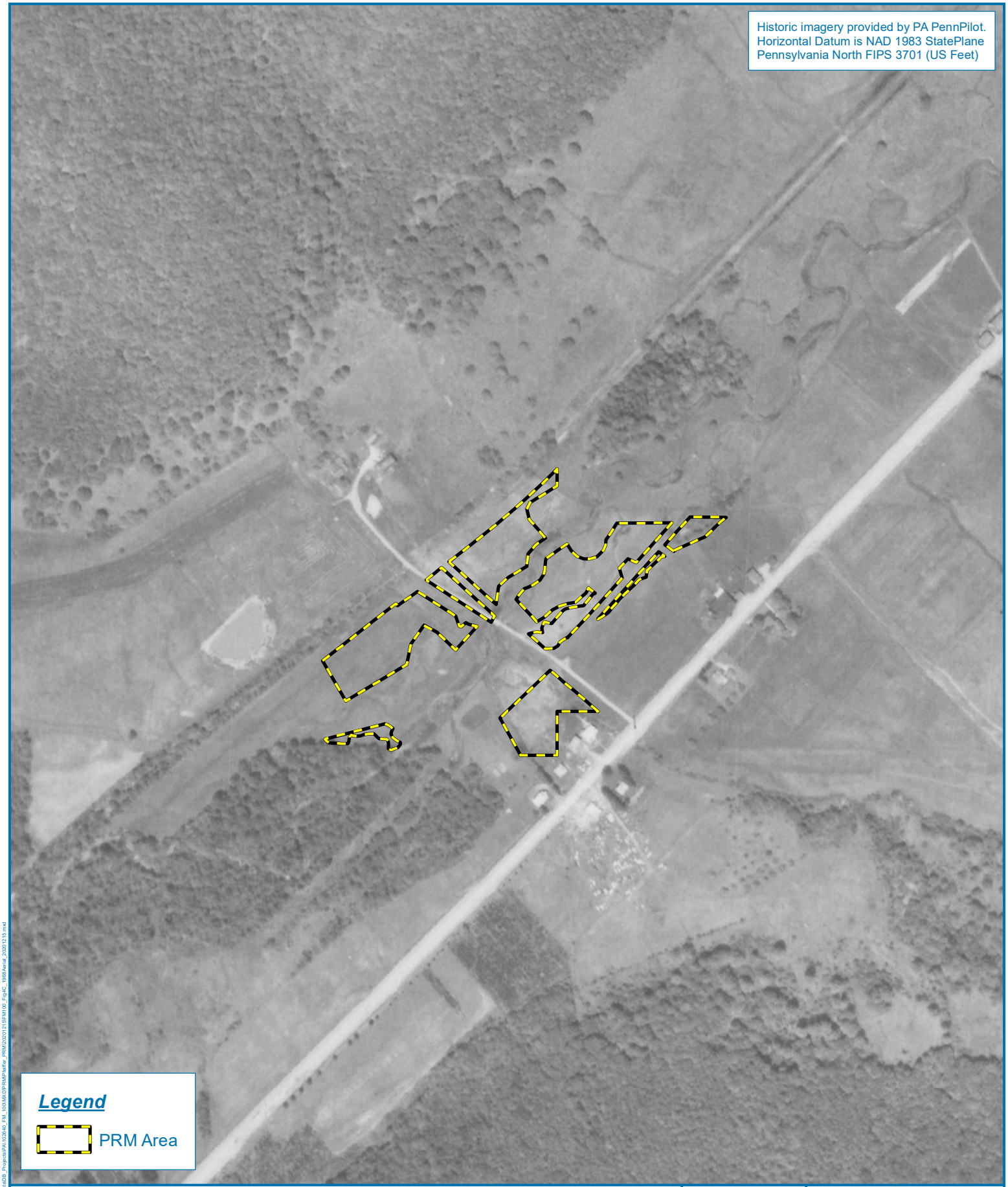

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Feet

FIGURE 4C

PERMITTEE-RESPONSIBLE MITIGATION FOR THE FM100 PROJECT WILDCAT HOLLOW 1968 HISTORIC AERIAL

MCKEAN COUNTY, PENNSYLVANIA

Date: 12/15/2020

Drawn by: NDR

Checked by: HK

1 in = 400 feet

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Feet

FIGURE 4D

PERMITTEE-RESPONSIBLE MITIGATION FOR THE FM100 PROJECT
WILDCAT HOLLOW PRM
1990 HISTORIC AERIAL

MCKEAN COUNTY, PENNSYLVANIA

Date: 12/15/2020
Drawn by: NDR
Checked by: HK
1 in = 400 feet

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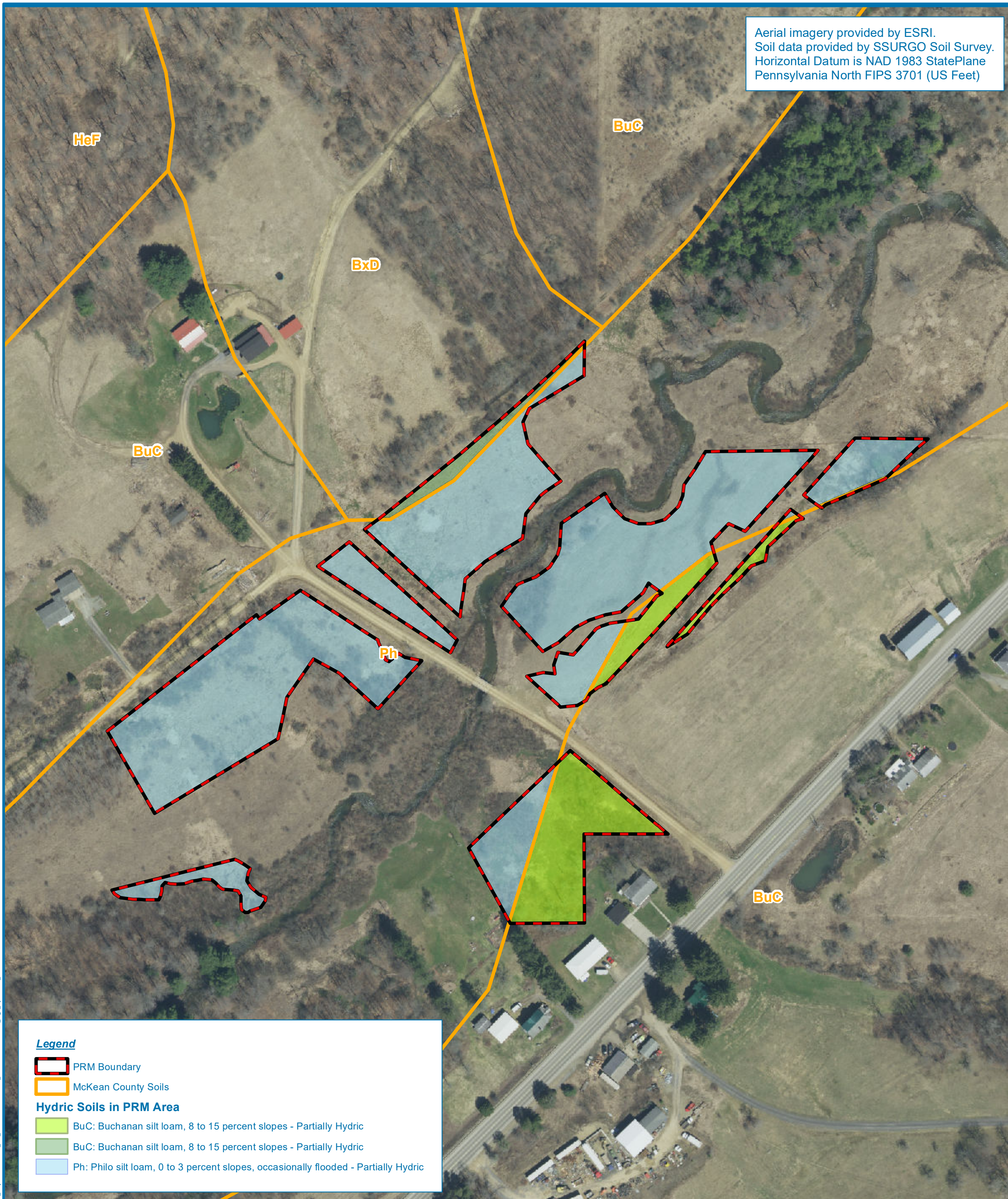

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Feet

FIGURE 5

PERMITTEE-RESPONSIBLE MITIGATION FOR THE FM100 PROJECT WILDCAT HOLLOW PRM HYDRIC SOILS MAP

MCKEAN COUNTY, PENNSYLVANIA

Date: 12/15/2020

Drawn by: NDR

Checked by: HK

1 in = 200 feet

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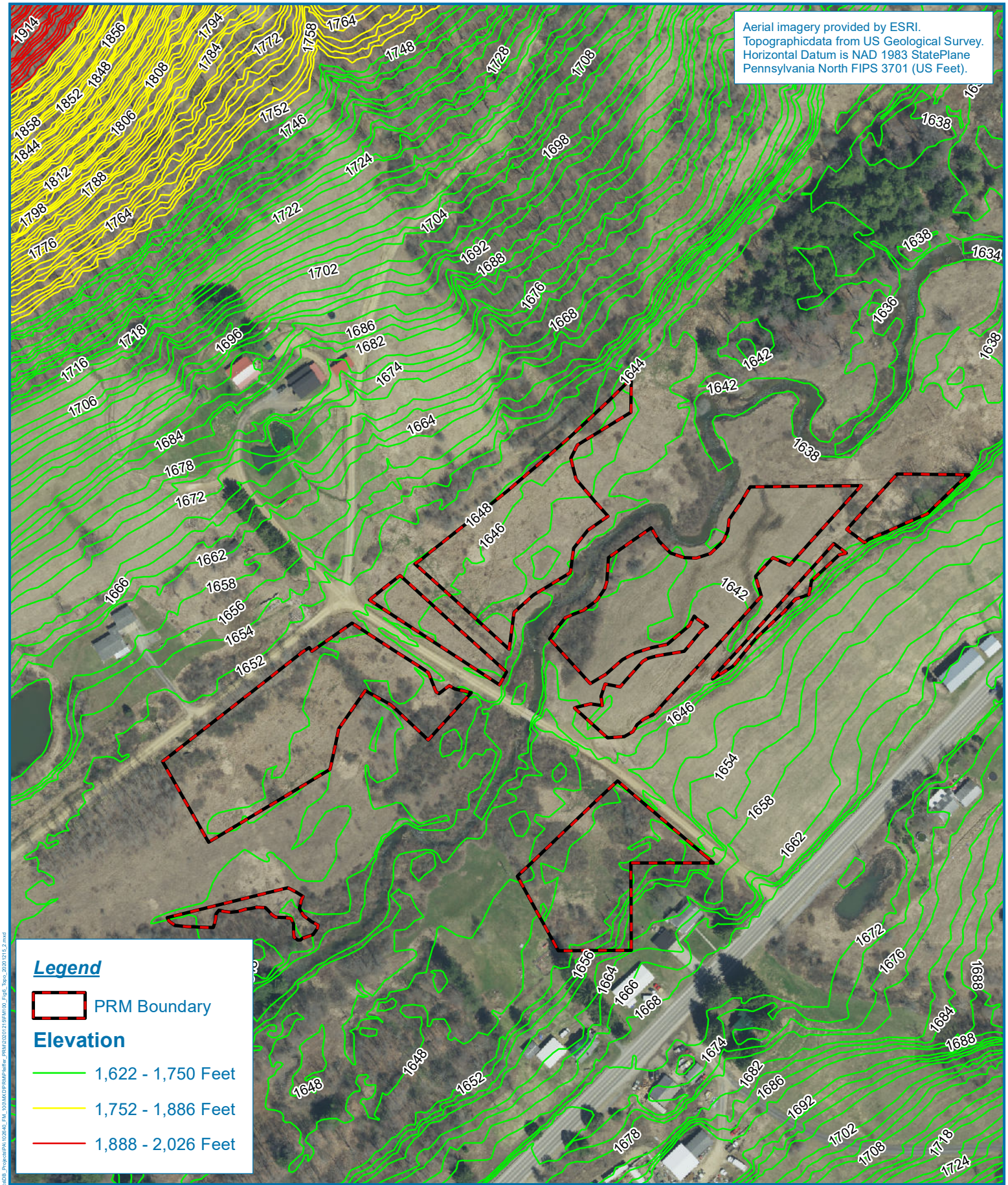

FIGURE 6

PERMITTEE-RESPONSIBLE MITIGATION FOR THE FM100 PROJECT
WILDCAT HOLLOW PRM
TOPOGRAPHIC MAP

CRAWFORD COUNTY, PENNSYLVANIA

Date:	12/15/2020
Drawn by:	NDR
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	1 in = 200 feet

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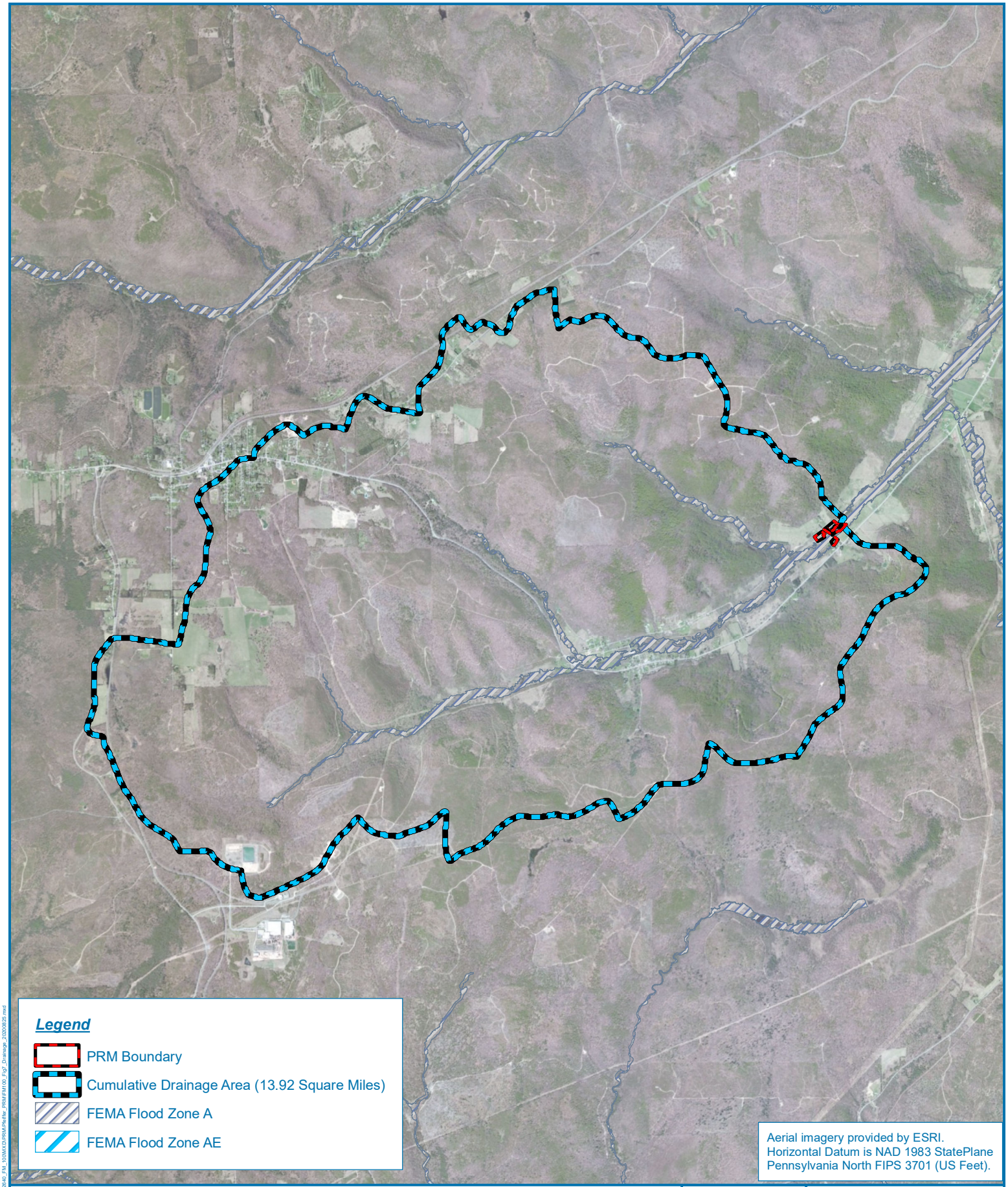

FIGURE 7

PERMITTEE-RESPONSIBLE MITIGATION FOR THE FM100 PROJECT
WILDCAT HOLLOW PRM
DRAINAGE AREA MAP

MCKEAN COUNTY, PENNSYLVANIA

Date:	9/4/2020
Drawn by:	NDR
Checked by:	HK
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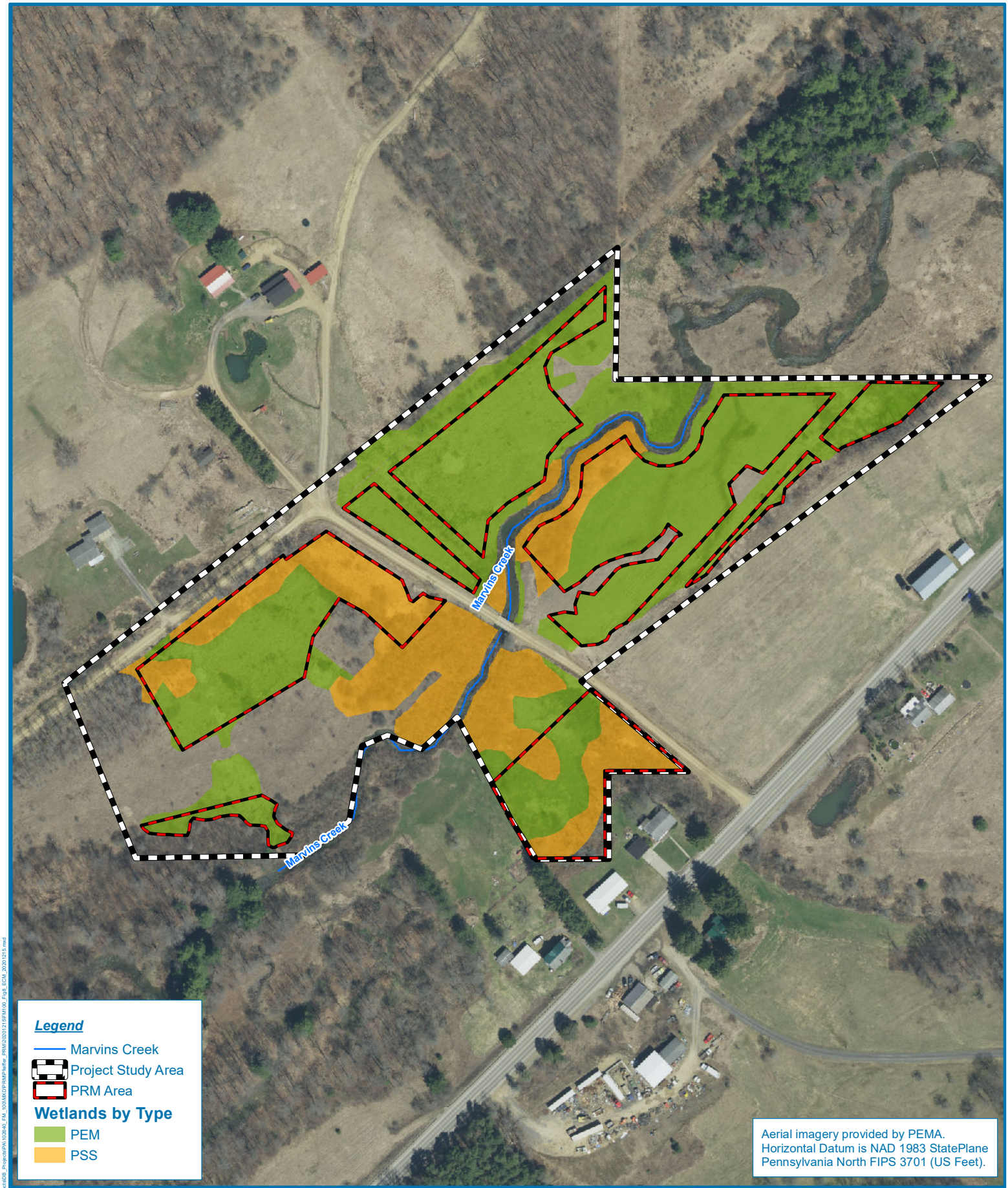

FIGURE 8

PERMITTEE-RESPONSIBLE MITIGATION FOR THE FM100 PROJECT
WILDCAT HOLLOW PRM
EXISTING CONDITIONS MAP

MERCER COUNTY, PENNSYLVANIA

Date:	12/15/2020
Drawn by:	HK
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	1 in = 200 feet

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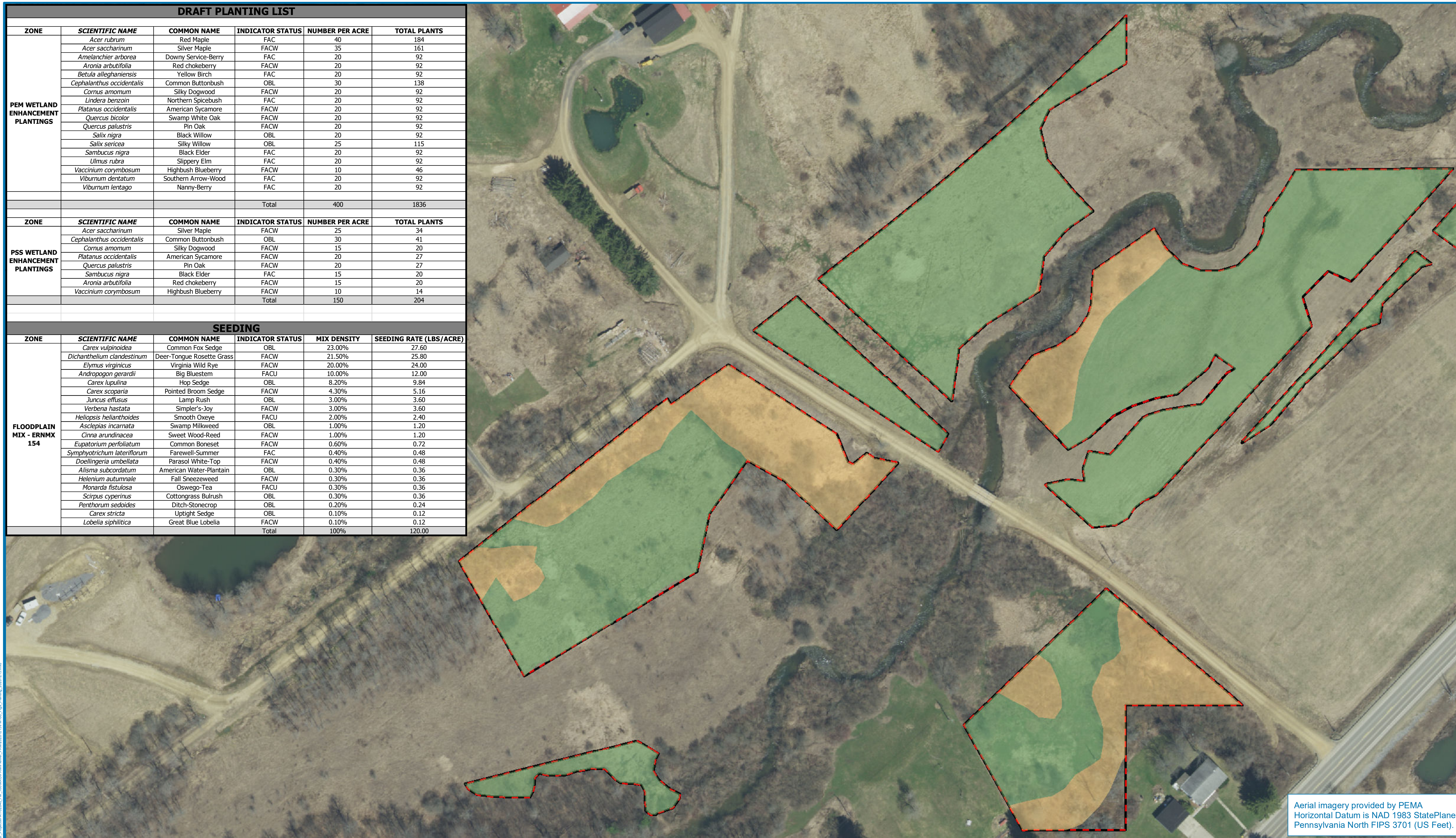
DRAFT PLANTING LIST

ZONE	*SCIENTIFIC NAME*	COMMON NAME	INDICATOR STATUS	NUMBER PER ACRE	TOTAL PLANTS
PEM WETLAND ENHANCEMENT PLANTINGS	*Acer rubrum*	Red Maple	FAC	40	184
	Acer saccharinum	Silver Maple	FACW	35	161
	Amelanchier arborea	Downy Service-Berry	FAC	20	92
	Aronia arbutifolia	Red chokeberry	FACW	20	92
	Betula alleghaniensis	Yellow Birch	FAC	20	92
	Cephalanthus occidentalis	Common Buttonbush	OBL	30	138
	Cornus amomum	Silky Dogwood	FACW	20	92
	Lindera benzoin	Northern Spicebush	FAC	20	92
	Platanus occidentalis	American Sycamore	FACW	20	92
	Quercus bicolor	Swamp White Oak	FACW	20	92
	Quercus palustris	Pin Oak	FACW	20	92
	Salix nigra	Black Willow	OBL	20	92
	Salix sericea	Silky Willow	OBL	25	115
	Sambucus nigra	Black Elder	FAC	20	92
	Ulmus rubra	Slippery Elm	FAC	20	92
	Vaccinium corymbosum	Highbush Blueberry	FACW	10	46
	Viburnum dentatum	Southern Arrow-Wood	FAC	20	92
	Viburnum lentago	Nanny-Berry	FAC	20	92
			Total	400	1836

ZONE	*SCIENTIFIC NAME*	COMMON NAME	INDICATOR STATUS	NUMBER PER ACRE	TOTAL PLANTS
PSS WETLAND ENHANCEMENT PLANTINGS	*Acer saccharinum*	Silver Maple	FACW	25	34
	Cephalanthus occidentalis	Common Buttonbush	OBL	30	41
	Cornus amomum	Silky Dogwood	FACW	15	20
	Platanus occidentalis	American Sycamore	FACW	20	27
	Quercus palustris	Pin Oak	FACW	20	27
	Sambucus nigra	Black Elder	FAC	15	20
	Aronia arbutifolia	Red chokeberry	FACW	15	20
	Vaccinium corymbosum	Highbush Blueberry	FACW	10	14
			Total	150	204

SEEDING

ZONE	*SCIENTIFIC NAME*	COMMON NAME	INDICATOR STATUS	MIX DENSITY	SEEDING RATE (LBS/ACRE)
FLOODPLAIN MIX - ERNMX 154	*Carex vulpinoidea*	Common Fox Sedge	OBL	23.00%	27.60
	Dichanthelium clandestinum	Deer-Tongue Rosette Grass	FACW	21.50%	25.80
	Elymus virginicus	Virginia Wild Rye	FACW	20.00%	24.00
	Andropogon gerardii	Big Bluestem	FACU	10.00%	12.00
	Carex lupulina	Hop Sedge	OBL	8.20%	9.84
	Carex scoparia	Pointed Broom Sedge	FACW	4.30%	5.16
	Juncus effusus	Lamp Rush	OBL	3.00%	3.60
	Verbena hastata	Simpler's-Joy	FACW	3.00%	3.60
	Heliopsis helianthoides	Smooth Oxeye	FACU	2.00%	2.40
	Asclepias incarnata	Swamp Milkweed	OBL	1.00%	1.20
	Cinna arundinacea	Sweet Wood-Reed	FACW	1.00%	1.20
	Eupatorium perfoliatum	Common Boneset	FACW	0.60%	0.72
	Symphyotrichum lateriflorum	Farewell-Summer	FAC	0.40%	0.48
	Doellingeria umbellata	Parasol White-Top	FACW	0.40%	0.48
	Alisma subcordatum	American Water-Plantain	OBL	0.30%	0.36
	Helenium autumnale	Fall Sneezeweed	FACW	0.30%	0.36
	Monarda fistulosa	Oswego-Tea	FACU	0.30%	0.36
	Scirpus cyperinus	Cottongrass Bulrush	OBL	0.30%	0.36
	Penthorum sedoides	Ditch-Stonecrop	OBL	0.20%	0.24
	Carex stricta	Uptight Sedge	OBL	0.10%	0.12
	Lobelia siphilitica	Great Blue Lobelia	FACW	0.10%	0.12
			Total	100%	120.00



0 100 200
Feet

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W E
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FIGURE 9

**PERMITTEE-RESPONSIBLE MITIGATION FOR THE FM100 PROJECT
WILDCAT HOLLOW
PLANTING PLAN
MCKEAN COUNTY, PENNSYLVANIA**

Legend

Planting Types

Enhancement, PEM (4.59 Acres)

Enhancement, PSS (1.36 Acres)

PRM Boundary

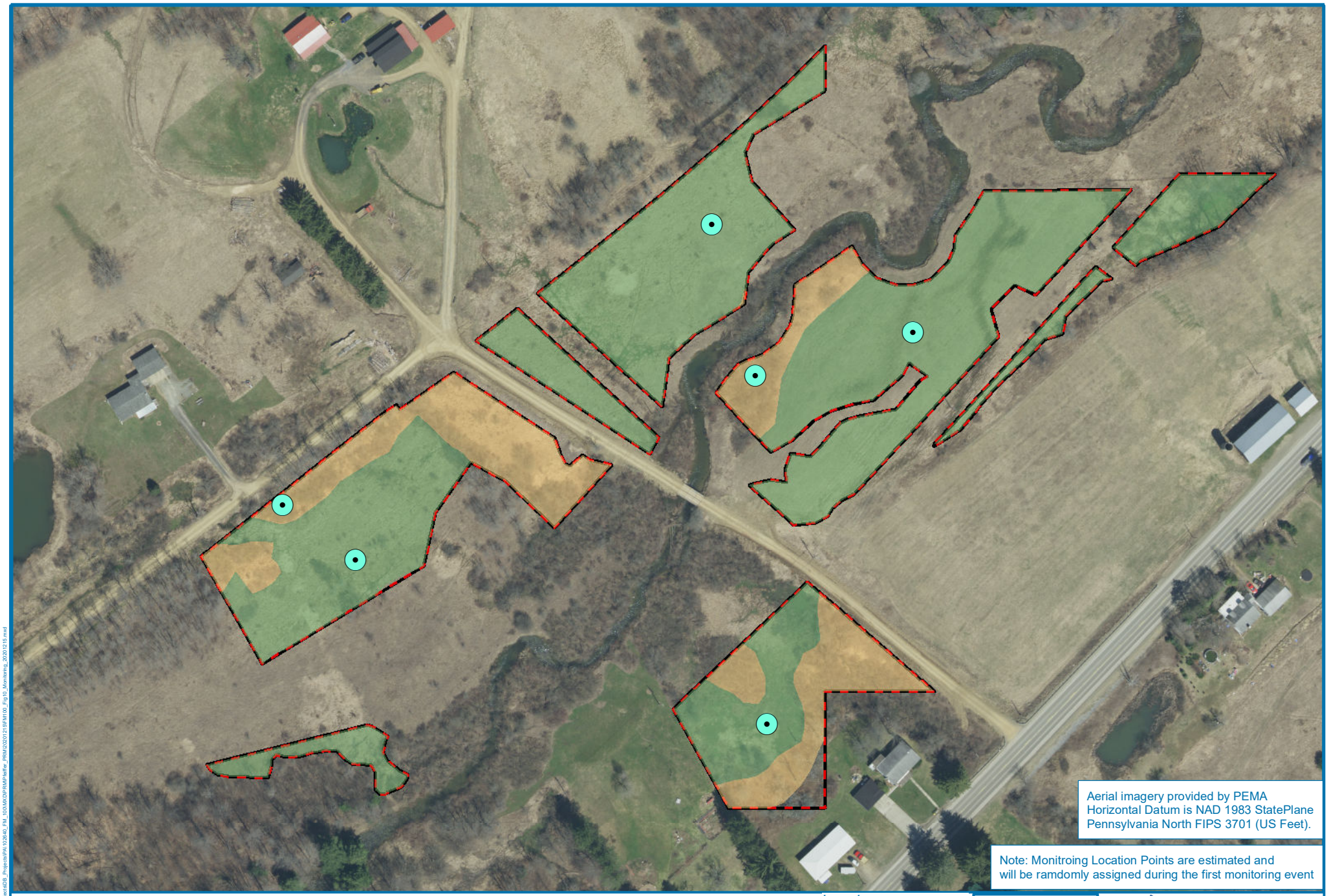
Date: 12/15/2020

Drawn by: NR

Checked by: HK

1 in = 100 feet

res



Aerial imagery provided by PEMA
Horizontal Datum is NAD 1983 StatePlane Pennsylvania North FIPS 3701 (US Feet).

Note: Monitroing Location Points are estimated and will be ramdomly assigned during the first monitoring event

N
W E
S

0 75 150

Feet

FIGURE 10

PERMITTEE-RESPONSIBLE MITIGATION FOR THE FM100 PROJECT
WILDCAT HOLLOW PRM
MONITORING MAP

MCKEAN COUNTY, PENNSYLVANIA

Legend

Monitoring Locations

Planting Types

Enhancement, PEM (4.59 Acres)

Enhancement, PSS (1.36 Acres)

PRM Boundary

Date: 12/15/2020

Drawn by: NR

Checked by: HK

1 in = 150 feet

res

Document Path: R:\Resa\energy\Projects_Old\Projects\DB_Projects\PA\10240_FM_100\MXD\PRM\Refine_PRM\20201215\FM100_Fig10_Monitoring_20201215.mxd

APPENDIX B
SITE PROTECTION INSTRUMENT

DECLARATION OF RESTRICTIVE COVENANT FOR CONSERVATION

This DECLARATION OF RESTRICTIVE COVENANTS FOR CONSERVATION ("Declaration") is made and entered into as of [date] by and between FIRST PENNSYLVANIA RESOURCE, L.L.C., a Pennsylvania limited liability company, with a business address at 33 Terminal Way, Pittsburgh, PA 15219 ("Grantee") and_____, an [individual/ corporation/other organization] with a mailing address at [_____] ("Grantor").

RECITALS

WHEREAS, Grantor owns certain real estate located in _____ County(ies), Pennsylvania, consisting of _____ acres, more or less, as described more specifically in **Exhibit A** hereto (the "Property"); and

WHEREAS, Grantee is a Pennsylvania company in the business of stream and wetland mitigation in the Commonwealth of Pennsylvania; and

WHEREAS, the Grantor has agreed to make a _____ acre portion of the Property, delineated in **Exhibit B**, where certain [stream and/or] wetland resources exist or may be created and/or enhanced (the "Conservation Area"), subject to this Declaration; and

WHEREAS, the Grantor agrees to the creation of the Conservation Area described herein and intends that the Conservation Area shall be preserved and maintained in perpetuity in an enhanced or natural condition, which will include functioning [streams and/or] wetlands; and

WHEREAS, the Conservation Area, or a portion thereof, is intended to be used in the future as mitigation for impacts to waters of the United States and/or waters of the Commonwealth of Pennsylvania authorized under U.S. Army Corps of Engineers ("Corps" to include any successor agency) or Pennsylvania Department of Environmental Protection ("PADEP" to include any successor agency) permit(s). Before, or at the time a Corps or PADEP permit or verification or a Mitigation Banking Instrument approves using this Conservation Area as mitigation: (1) the Mitigation Plan approved/required by such permit or Banking Instrument must contain a legal description of the portion of the Conservation Area to be used as mitigation or a Mitigation Bank; and (2) Grantee must record an addendum to this Declaration containing a legal description of the portion of the Conservation Area associated with each permit or Mitigation Bank, which references the applicable Corps and/or PADEP permit/verification number(s) or Mitigation Bank Site Name and any associated Corps/PADEP authorization/approval number(s). A form of the addendum to be used is attached to this Declaration as **Exhibit C**; and

WHEREAS, in recognition of the continuing benefit to the Property, and for the protection of waters of the United States and scenic, resource, environmental, and general property values, the Grantor and Grantee have agreed to place certain restrictive covenants on the Property, in order that the Conservation Area shall remain substantially in its natural condition forever; and

WHEREAS, the Grantor and Grantee agree and acknowledge that this Declaration, including the rights authorized to Grantee herein, shall be assignable and transferrable to Grantee's subsequent heirs, successors, and assigns, [if Holder known: including the _____]; and

[If Holder known: WHEREAS, the _____, a 501(c)(3) tax-exempt entity registered with the Bureau of Charitable Organizations of the Pennsylvania Department of State, is a holder of this Declaration] and

WHEREAS, this Declaration is constructed and covenanted to meet the requirements for conservation easements under the Pennsylvania Conservation and Preservation Easements Act, Act 29 of 2001, and as amended thereafter; and

NOW, THEREFORE, for good and valuable consideration and in consideration of the mutually held interests in enhancement and preservation of the environment, as well as the terms, conditions, and restrictions contained herein, and pursuant to the laws of the Commonwealth of Pennsylvania, Grantor does agree to the following terms and conditions:

A. **PURPOSE**

The purpose of this Declaration is:

(1) To preserve, protect, and enhance the native flora, fauna, soils, water table, aquifer, drainage patterns, wetland resources and other related environmental functions and values of the Conservation Area;

(2) To maintain the natural view shed of the Conservation Area in its native, enhanced, scenic and open condition;

(3) To assure that the Conservation Area, including its air space, streams and other aquatic resources on or beneath the Conservation Area, and including, but not limited to, subsurface aquifers, springs, and the water table, will be maintained in perpetuity in its natural condition, as that may be enhanced, as provided herein; and

(4) To prevent any use of the Conservation Area that threatens to or will impair, interfere with, or otherwise negatively affect its natural resource functions and values.

Grantor and Grantee [If known: and Holder] intend and agree that this Declaration will confine the use of the Conservation Area to such activities as are consistent with the purposes set forth herein.

B. **ACCESS**

In order to achieve the purposes of this Declaration, the following rights are created in accordance with Pennsylvania law:

(1) The Grantee shall have the right and Grantor acknowledges the right of [the holder(s) of this Declaration,] the Corps, the PADEP, and other government agencies with legal authority to enter upon the Property for purposes related to this Declaration, to inspect the Conservation Area at reasonable times to monitor compliance with this Declaration. Except in cases of a threat of a physical or public safety emergency, such entry shall, when practicable, be upon reasonable prior notice to Grantor or its successors and assigns, and such entry shall not unreasonably interfere with the Grantor's or its successors' and assigns' use and quiet enjoyment of the Property.

(2) The Grantor, Grantee, [holder(s) of this Conservation Declaration,] the Corps, the PADEP and other government agencies with legal authority to enter upon the Property for purposes related to this Declaration, each shall have the right to enter upon the Property to access the Conservation Area at reasonable times and upon prior notice to the Grantor; and upon notice and written approval by the Corps may take appropriate environmental or conservation management measures within the Conservation Area consistent with the terms and purposes of this Declaration, including, but not limited to:

(a) planting of native vegetation (i.e. trees, shrubs, grasses, and forbs); and
(b) restoring, altering or maintaining the topography, hydrology, drainage, structural integrity, streambed(s), streambank(s), water quantity, water quality, any relevant feature of a stream, wetland, water body, or vegetative buffer within the Conservation Area.

(3) The Grantor and Grantee, [holder(s) of this Declaration], the Corps, PADEP, and other government agencies with legal authority to enter upon the Property for purposes related to this Declaration, shall each have the right to enforce the terms of this Declaration by appropriate legal proceedings in accordance with applicable law so as to prevent any activity on or use of the Property that is inconsistent with the purposes of this Declaration and to require the restoration of such areas or features of the Conservation Area that may be impaired or damaged by an inconsistent activity or use.

C. **DURATION**

This Declaration shall remain in effect in perpetuity, shall run with the land regardless of ownership or use, and is binding upon and shall inure to the benefit of the Grantor and Grantee's [if known – and holder's] heirs, executors, administrators, successors, representatives, devisees, and assigns, as the case may be, as long as said party shall have any interest in any portion(s) of the Conservation Area.

D. **RESTRICTIONS**

Any activity in or use of the Conservation Area that is inconsistent with the purposes of this Declaration by the Grantor; subsequent property owner(s); and the personal representatives, heirs, successors, and assigns of either the Grantor or subsequent property owner(s), is prohibited. Without limiting the generality of the foregoing, and except when an approved purpose under B.(2) above, or as necessary to accomplish mitigation approved under the any permit(s) reliant upon this Declaration, the following activities and uses are expressly prohibited in, on, over, or under the Conservation Area, subject to the express terms and conditions below:

(1) **Structures**. The construction of man-made structures including, but not limited to, the construction, removal, placement, preservation, maintenance or alteration of any buildings, roads, utility lines, billboards, or other advertising. This restriction does not include deer stands, bat boxes, bird nesting boxes, bird feeders, duck blinds, and the placement of signs for safety purposes or boundary demarcation.

(2) **Demolition**. The demolition of fencing structures constructed by the Grantee for the purpose of demarcation of the Conservation Area or for public safety.

(3) **Soils**. The removal, excavation, disturbance, or dredging of soil, sand, peat, gravel, or aggregate material of any kind; or any change in the topography of the land, including any discharges of dredged or fill material, ditching, extraction, drilling, driving of piles, mining or excavation of any kind.

(4) **Drainage**. The drainage or disturbance of any aquifer, the surface water level or the water table.

(5) **Waste or Debris**. The storage, dumping, depositing, abandoning, discharging, or releasing of any gaseous, liquid, solid, or hazardous waste substance, materials or debris of whatever nature on, in, over, or underground or into surface or ground water.

(6) **Non-Native Species**. The planting or introduction of non-native or invasive species.

(7) **Herbicides, Insecticides, and Pesticides**. The use of herbicides, insecticides, or pesticides, or other chemicals, except for as may be necessary to control invasive species that threaten the natural character of the Conservation Area. State-approved municipal application programs necessary to protect public health and welfare are not included in this prohibition.

(8) **Removal of Vegetation**. The mowing, cutting, pruning, removal; disturbance, destruction, or collection of any trees, shrubs, or other vegetation, except for pruning, cutting or removal for:

a) safety; or
b) control in accordance with accepted scientific forestry management practices for diseased or dead vegetation; or
c) control of non-native species and noxious weeds; or
d) scientific nature study.

(9) **Agricultural Activities**. Unless currently used for agricultural or similarly related purposes, the conversion of, or expansion into, any portion of the Conservation Area for use of agricultural, horticultural, aquacultural, silvicultural, livestock production or grazing activities. This prohibition also includes conversion from one type of these activities to another (e.g. from agricultural to silvicultural).

(10) **Subdivision of Conservation Area**. Subdivision of real property within the Conservation Area into multiple parcels.

(11) **Other**. Other acts, uses, excavation, or discharges, which adversely affect fish or wildlife habitat or the preservation of lands, waterways, or other aquatic resources mentioned herein and located within the Conservation Area.

E. INSPECTION, ENFORCEMENT AND ACCESS RIGHTS

As set forth in Section B, above, the Grantee, holder(s) of this Declaration, the Corps, PADEP and other government agencies with legal authority to enter upon the Property for purposes related to this Declaration have the right to enter the Property to observe the Conservation Area and to take actions necessary to verify compliance with and to enforce this Declaration. When practicable, such entry shall be upon prior reasonable notice to the property owner. No violation of this Declaration shall result in a forfeiture or reversion of title. In any enforcement action, an enforcing agency shall be entitled to a complete restoration for any violation, as well as other authorized judicial remedies such as civil penalties. Nothing herein shall be interpreted to limit the right of the Corps to modify, suspend, or revoke any permit issued or authorized by Corps.

F. RECORDING AND EXECUTION BY PARTIES

Within thirty (30) calendar days of execution of this Agreement, the Grantee shall record this Declaration in the County office where land records are retained and shall provide proof of recordation to Grantor, the Corps, and PADEP within ten (10) business days of execution. Further, if anticipated activities in the Conservation Area are agreed upon for future phases of the site, as set forth in Section H (Reserved Rights) herein, the Grantee must submit plans to the Corps and PADEP for review and approval prior to any work in the Conservation Area.

G. NOTICE OF TRANSFER OF PROPERTY INTERESTS

No transfer of the rights set forth in this Declaration, or action to void or modify this Declaration, including transfer of title to or establishment of any other legal claims over the Conservation Area or the underlying Property it occupies, shall occur without sixty (60) calendar days' prior written notice to the Corps and the PADEP.

H. RESERVED RIGHTS

(1) This Declaration will not prevent the Grantor, or any subsequent owner of the Property and/or portions of the Property, from making use of the area(s) outside of the Conservation Area or from uses that are consistent with the purposes of this Declaration, including, but not limited to the following:

(a) **Existing Agreements**. Uses that Grantor is required to allow under valid, existing, recorded agreements are permitted, to the extent they do not interfere with, threaten, or degrade the Conservation Area and only to the extent they are consistent with the purposes of this Declaration. The Grantor[, holder(s) hereof,] and any holders of easements or other property rights for the operation and maintenance of pre-existing or project-related structures or infrastructure, such as roads, utilities, drainage ditches, or stormwater facilities that are present on, over, or under the Conservation Area, reserve the right, within the terms and conditions of their permits, agreements, and the law, to continue with such operation and maintenance. All pre-existing or approved project-related structures or infrastructure, if any, shall be shown on the accompanying plat map or approved plan and attached to this Declaration as **Exhibit D**.

(b) **Subsequent Agreements Allowing Subsurface Activity**. Subject to review by Grantee [if holder known – and holder of this Declaration], and only to the extent they are consistent with the purposes of this Declaration, agreements for the extraction of natural gas (regardless of source) or oil, and injection or release of water and other substances to facilitate such extraction, but excluding injection wells subject to state or federal underground injection control programs. The activities subject to such agreement may only occur at subterranean depths at which there can be no impairment of or detectable impact to water quality or quantity, native flora, fauna, soils, water table, aquifer, drainage patterns, and other related environmental functions and values of the Property, or on other resources described in this Declaration. No surface activities or uses, incident to such extraction are permitted in the Conservation Area. Grantor and Grantee shall provide the Corps and PADEP notice of Grantor's intent to enter into an agreement allowing subsurface activities at least sixty (60) days prior to executing the agreement.

(2) If the success of a compensatory mitigation project required or authorized by the Corps and PADEP requires any related or unanticipated infrastructure modifications, utility relocation, drainage ditches, or stormwater controls within the identified Conservation Area, or if a situation requires measures to remove threat to life or property within the identified Conservation Area, said activities must be approved in writing by the Corps and PADEP subject to terms and conditions set forth in the written approval. Approval is subject to the Corps's and PADEP's discretion. If approved, said activities must be identified on an amended **Exhibit D** and must be recorded and specifically noted as an "amendment" and copies of the recorded **Amended Exhibit D** must be provided to the Corps and PADEP within sixty (60) days of Corps approval. Approval of said activity by the Corps is in addition to any Clean Water Act, Section 404 permit, or other authorization, which may be required in order to legally implement said activity. The Grantor and Grantee accept the obligation to place any other and/or subsequent responsible party on reasonable prior notice of their need to request such Corps approval.

(3) **Enhancements, Maintenance and Repair**. This Declaration is not intended to prohibit future necessary or desired maintenance, repair, or enhancements to the

Property, where such actions are approved by the Corps and PADEP as appropriate, either through an approved mitigation plan (Section K below) or by a separate permit.

[I. The Grantor has mortgaged the Property subject to this Declaration. The lender has executed Subordination of Mortgage instruments related to the parcels subject of this Declaration for the sole purpose of subordinating their respective liens, dignity and priority interests to this Declaration. The executed Subordination of Mortgage instruments are attached hereto as **Exhibit E**: Mortgage Subordination Documents, and incorporated fully herein.]

J. **SEVERABILITY**

If any portion of this Declaration, or the application thereof to any person or circumstance, is found to be invalid, the remainder of the provisions of this instrument, or application of such provision to persons or circumstances other than those as to which it is found to be invalid, shall not be affected thereby.

K. **MITIGATION**

If the work required by a mitigation plan approved by the Corps and PADEP, including maintenance or remedial work, occurs within the Conservation Area, then the Grantee is allowed to construct and undertake the mitigation work in accordance with an authorized mitigation plan.

L. **ASSIGNMENT**

The Grantee [If Holder exists: and/or Holder each] is authorized to assign or transfer its rights and obligations under this Declaration to an organization that is a qualified organization under Section 170(h) of the Internal Revenue Code at the time of transfer.

M. **COAL RIGHTS NOTICE**

The following notice is given to and accepted by Grantor for the purpose and with the intention of compliance with the requirements of the Pennsylvania Conservation and Preservation Easements Act. Nothing herein shall imply the presence or absence of workable coal seams or the severance of coal interests from the Property.

NOTICE:

THIS DECLARATION may impair the development of coal interests including workable coal seams or coal interests which have been severed from the Property.

IN WITNESS WHEREOF, intending to be legally bound, the Parties have executed this Declaration the day and year first above written.

GRANTOR:

_____
David L. Specht

WITNESS:

_____

GRANTEE:

First Pennsylvania Resource, L.L.C.
a Pennsylvania limited liability company

By: Resource Environmental Solutions, LLC, its sole manager

By: _____
Name: _____
Title: _____

WITNESS:

_____

HOLDER:
_____

By: _____

WITNESS:

_____

COMMONWEALTH OF PENNSYLVANIA :
: SS
COUNTY OF _____ :

On _____, before me, a Notary Public for the Commonwealth aforesaid, personally appeared _____, known to me or satisfactorily proven to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I have set my hand and official seal.

_____
Notary Public
My commission expires:
_____

[SEAL]

COMMONWEALTH OF PENNSYLVANIA :
: SS
COUNTY OF _____ :

On _____, before me, a Notary Public for the Commonwealth aforesaid, personally appeared _____, who acknowledged himself/herself to be the _____of the _____known to me or satisfactorily proven to be the person whose name is subscribed to the within instrument, and acknowledged that he executed the same for the purposes therein contained.

IN WITNESS WHEREOF, I have set my hand and official seal.

_____
Notary Public
My commission expires:
_____

[SEAL]

COMMONWEALTH OF PENNSYLVANIA :
: SS
COUNTY OF _____ :

On _____, before me, a Notary Public for the Commonwealth aforesaid, personally appeared _____, who acknowledged himself/herself to be the _____ of Resource Environmental Solutions, LLC, as manager of First Pennsylvania Resource, L.L.C., a Pennsylvania limited liability company, and that s/he, in the capacity set forth above, on behalf of the Grantee, being authorized to do so, executed, in my presence, the foregoing Declaration for the purposes herein contained.

IN WITNESS WHEREOF, I have set my hand and official seal.

_____
Notary Public
My commission expires:
_____

[SEAL]

APPENDIX C
WETLAND REPORT

Date: September 6, 2020

Subject: Wildcat Hollow PRM Site Wetland Delineation Investigation

The following report details wetland delineation findings within a 14.4-acre Study Area of the Wildcat Hollow PRM Site.

On September 1, 2020, Resource Environmental Solutions (RES) biologists performed aquatic resource investigations within a 14.4-acre Study Area of the Wildcat Hollow PRM Site. The wetland investigation was performed in accordance with the *USACE Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountain and Piedmont Region v 2.0* (USACE 2012). The United States Fish and Wildlife Service (USFWS) wetland classification system described by Cowardin, et al. (1979) was used to classify wetlands that were identified during the environmental survey.

This report summarizes the Study Area and delineation findings within the Study Area. The Study Area is located in Hamlin Township, McKean County, Pennsylvania (Attachment 1: Figure 1: Site Location Map). A National Wetlands Inventory (NWI), Hydric Soils, and Chapter 93 designation Map is included in Attachment 1: Figure 2: NWI, Hydric Soils and Chapter 93 Designation Map. Delineation findings are summarized in Table 1: Delineation Summary. A visual depiction of delineation findings is presented in Attachment 1: Figure 3: Wetland Delineation Map. The Study Area can be characterized as a fallow agricultural field containing upland fingers within a largely palustrine emergent (PEM)/palustrine scrub shrub (PSS) wetland complex.

General Site Characteristics

Since 1940, the PRM Site has been cleared and intensively used for agricultural and forestry purposes. Land surrounding the wetlands has been and continues to be used for agricultural purposes. The environmental resources on-site have been and continue to be degraded through anthropogenic alterations including historic agricultural activities (i.e., direct livestock access, grazing and hay production), tree clearing, and the planting and maintenance of non-native pasture grasses. In addition, the complex has been impacted by the construction of roads, overhead electrical right-of-ways (ROWs), and an abandoned rail line. Adjacent land use includes residential homes, agricultural properties with associated infrastructure, forestry, and partially undeveloped forested corridors.

The primary source of hydrology for on-site wetlands is groundwater augmented by surface runoff from adjacent streams and upland areas. In the PEM wetlands, dominant vegetation includes soft rush (*Juncus effusus*), grass-leaved goldenrod (Euthamia *graminifolia*), fox sedge (*Carex vulpinoidea*), and invasive reed canary grass (Phalaris arundinacea) in the herbaceous layer; occasional shrub pockets within the PEM wetlands include silky dogwood (*Cornus amomum*) and silky willow (*Salix sericea*). Within the PSS wetlands, the shrub layer is dominated by monocultures of either silky dogwood or silky willow; the dominants in the herbaceous layer include grass-leaved goldenrod, sensitive fern (*Onoclea sensibilis*), fringed loosestrife (*Lysimachia ciliata*), woolgrass (*Scirpus cyperinus*) and reed canary grass. Reed canary grass is dispersed

throughout the complexes in smaller amounts but also localized in pockets which are complete monocultures. Wetland soils met the criteria for the Depleted Matrix (F3) and/or Redox Dark Surface (F6) hydric soil indicators. Figure 2: NWI, Hydric Soils and Chapter 93 Designation Map.

Findings

The PRM Site, which has a contributing drainage of approximately 13.92 square miles, drains to Marvin Creek, a CWF per Section 93.9: Designated Water Uses and Water Quality Criteria of the PA Code Chapter 93: Water Quality Standards. Pennsylvania Fish and Boat Commission has listed Marvin Creek as a Naturally Reproducing Trout Stream and stocks portions of it. As such, the wetlands associated with Marvin Creek should all considered to be Exceptional Value (EV).

Marvin Creek is listed as attaining its designated use for aquatic life. Portions of the site occur within a Federal Emergency Management Agency (FEMA) 100-year floodplain. Two wetlands categorized by the National Wetland Inventory (NWI) wetlands as a Freshwater Emergent Wetlands (PEMC) are documented within the PRM Site. Natural Hydrography Dataset (NHD) data indicates that one blue-line stream (Marvin Creek) travels through the PRM Site.

Based on the United States Department of Agriculture Natural Resources Conservation Service (USDA-NRCS) Web Soil Survey, the PRM Site is underlain by the Buchanan silt loam (BuC) and Philo silt loam (Ph) silt loams. These soil types are found on 0 to 3, 8 to 15, and 8 to 25 percent slopes landscapes. BuC soils are categorized as farmlands of statewide importance, found mostly on hillslopes, and are poorly and very poorly drained. Ph soils are categorized as prime farmlands, poorly drained, and found mostly in floodplain locations. The mapped locations of the hydric soils are shown in Appendix A, Figure 2: NWI, Hydric Soils and Chapter 93 Designation Map. The identified soils are typically documented in areas of depressions on till plains and are classified as hydric per the USDA-NRCS.

Field analysis indicated that hydric soils are dominant within the limits of the PRM Site. The soils documented across the Site are comprised of largely silt loam with depths ranging from 0-16 inches meeting the Depleted Matrix (F3) criteria for hydric soils. Within portions of the site, a heavy clay layer was observed within the lower soil layers. Soils within the upland portions of the Site were comprised of silt loam to sand up to 16 inches and did not meet any of the hydric soil indicator criteria.

The Study Area includes a 9.28-acre PEM/PSS wetland complex, consisting of 5 separate wetlands which would historically have been historically one complex prior to construction of roads and railroads. Wetlands 1-4 consist of both PEM and PSS vegetative classes and Wetland 5 is a PEM-reed canary dominated depression, likely receiving runoff hydrology from Wetland 3. Table 1. Delineation Summary summarizes the identified wetland features and existing classifications, see below.

A figure depicting the Project location is provided as Attachment 1, Figure 1: Location Map. Attachment 1, Figure 2 includes an NWI, Hydric Soils and Chapter 93 Designation Map. The locations of the identified resources are summarized in Attachment 1, Figure 3: Wetland Delineation Map. Wetland and upland photographs are provided as Attachment 2: Photographs. Wetland and upland data forms are provided as Attachment 3: Wetland and Upland Data Forms.

Table 1. Delineation Summary						
Feature Designation	**Vegetative Classification**	**HGM Classification**	**Designated Water Uses and Water Quality Criteria**	**Latitude**	**Longitude**	**Acreage**
Wetland 1	PEM	Floodplain	EV	41.71925°	-78.55703°	2.29
	PSS			41.71917°	-78.55784°	0.46
Wetland 2	PEM			41.71944°	-78.55831°	2.25
	PSS			41.71931°	-78.55797°	0.04
Wetland 3	PEM			41.71851°	-78.55966°	1.05
	PSS			41.71860°	-78.55909°	1.44
Wetland 4	PEM			41.71808°	-78.55794°	0.62
	PSS			41.71815°	-78.55790°	0.82
Wetland 5	PEM	Depression		41.71786°	-78.55985°	0.31
Total Wetland Acreage = 9.28						

Closing

FPR appreciates the opportunity to provide this report. Should you have any questions, please contact me hkalk@res.us or at 412.249.2435.

Respectfully submitted,

Hannah Kalk
Regulatory Specialist III
Resource Environmental Solutions, LLC

Attachments:
Attachment 1 – Figures
Attachment 2 – Photographs
Attachment 3 – Wetland and Upland Delineation Data Sheets

References

Commonwealth of Pennsylvania. 2015. The Pennsylvania Code, Title 25: Environmental Protection. Chapter 93: Water Quality Standards, Section 93.9, Designated Water Uses and Water Quality Criteria. Accessed at http://www.pacode.com/secure/browse.asp in March 2020.

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ATTACHMENT 1

FIGURES

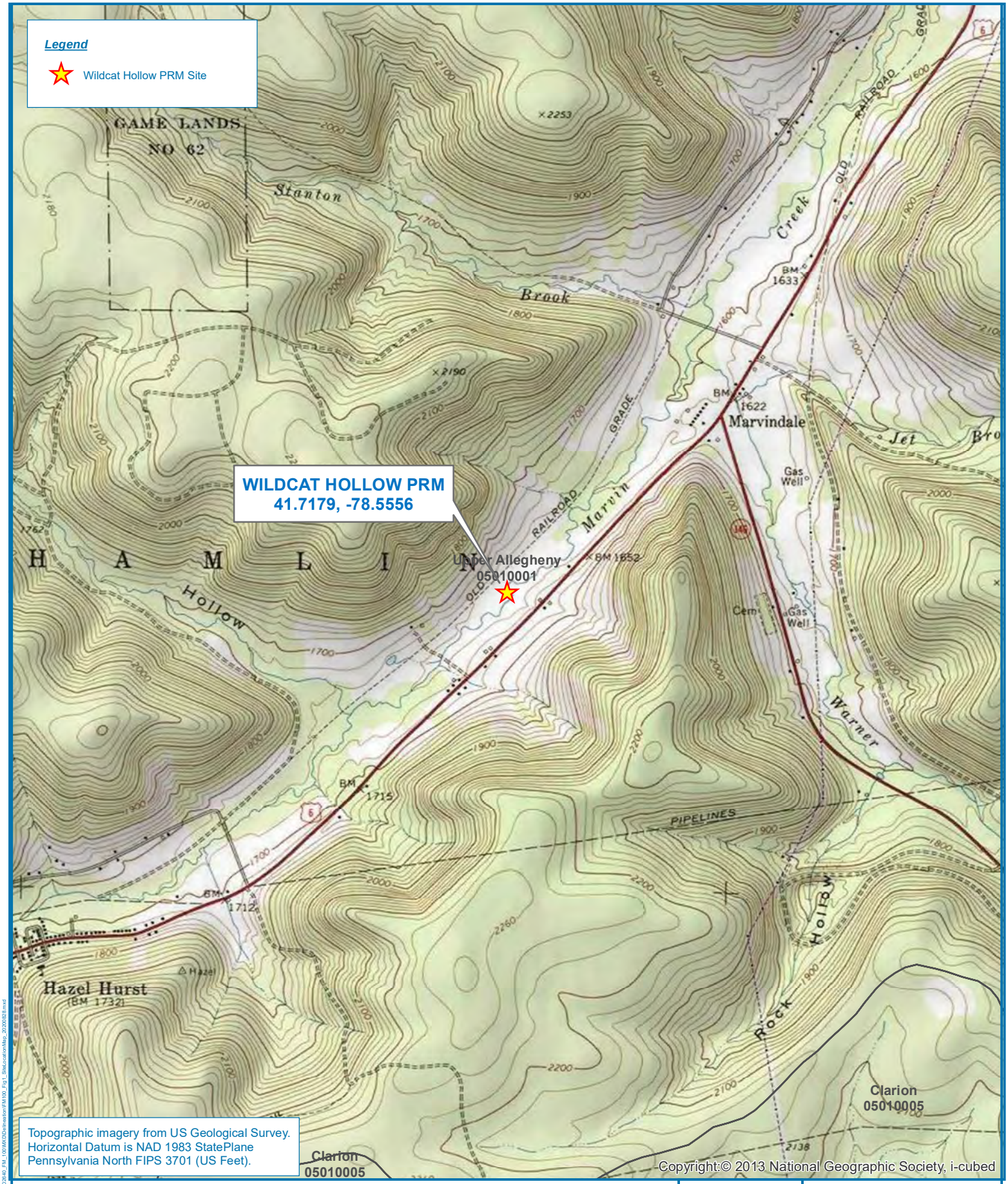

FIGURE 1

PERMITTEE-RESPONSIBLE MITIGATION FOR THE FM100 PROJECT
WILDCAT HOLLOW PRM
SITE LOCATION MAP

MCKEAN COUNTY, PENNSYLVANIA

Date: 9/5/2020

Drawn by: HK

Checked by: KW

1 in = 2,000 ft

res

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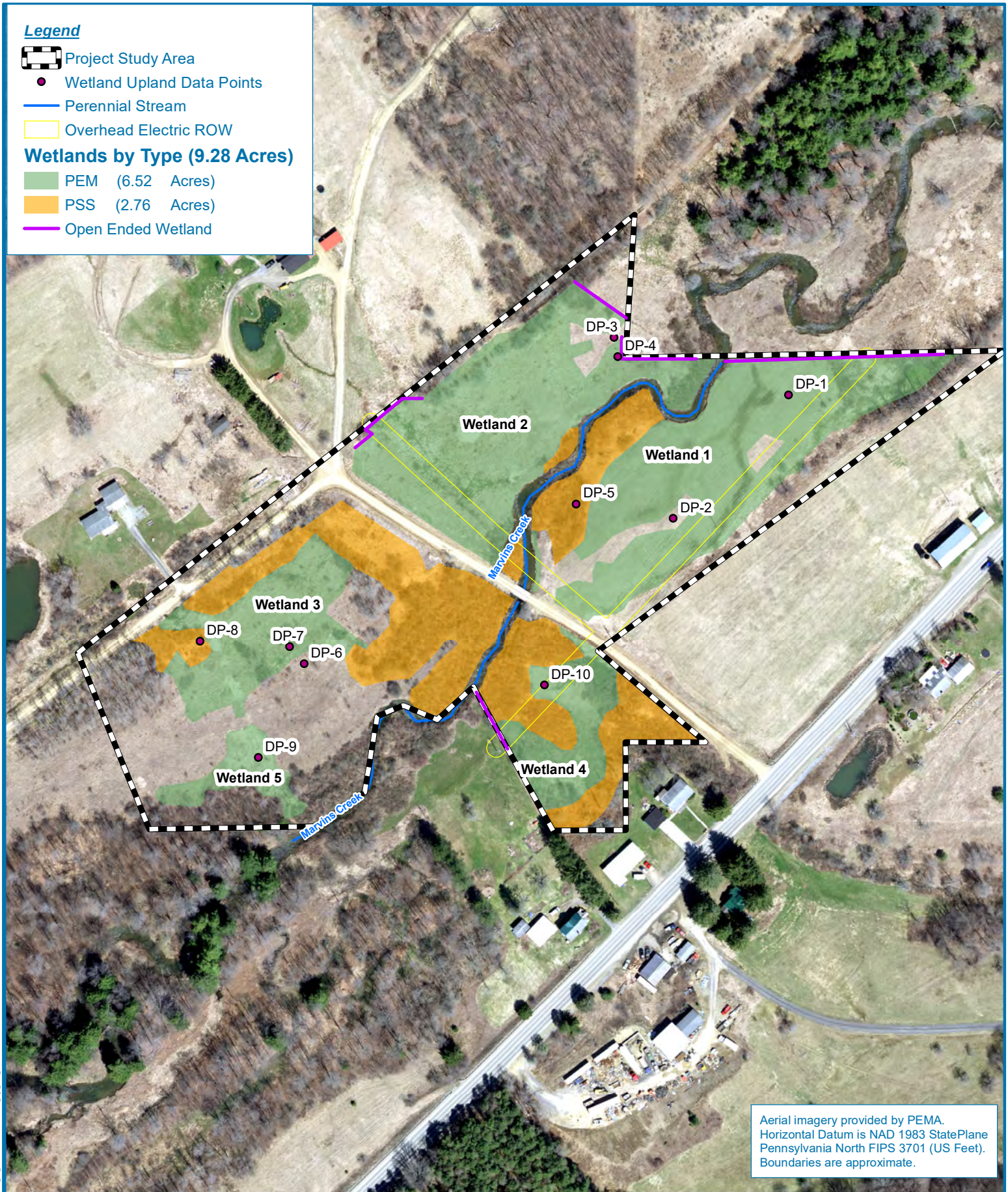

0 100 200
Feet

FIGURE 2

PERMITTEE-RESPONSIBLE MITIGATION FOR THE FM100 PROJECT
WILDCAT HOLLOW PRM
EXISTING CONDITIONS MAP

MCKEAN COUNTY, PENNSYLVANIA

Date: 9/5/2020
Drawn by: HK
Checked by: KW
1 in = 200 feet

res

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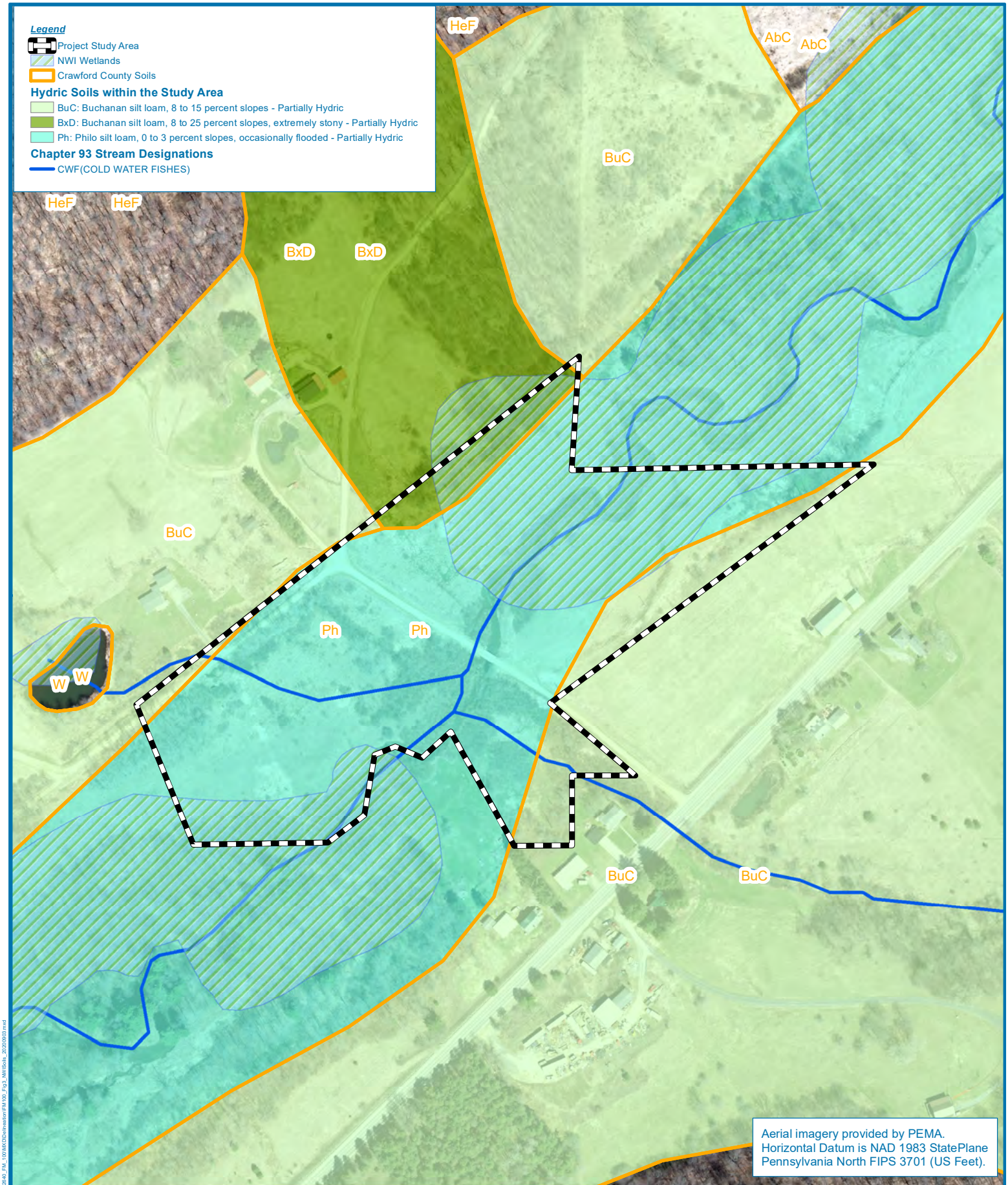

N
W E
S

0 125 250

Feet

FIGURE 3

PERMITTEE-RESPONSIBLE MITIGATION FOR THE FM100 PROJECT
WILDCAT HOLLOW PRM
NWI, HYDRIC SOILS AND CHAPTER 93 DESIGNATION MAP

MCKEAN COUNTY, PENNSYLVANIA

Date:	9/5/2020
Drawn by:	HK
Checked by:	KW
	1 in = 250 feet

res

Document Path: R:\Regional\Projects\Pit\10284.40_FM_100\MXD\Delineation\FM100_Fig3_NWISoils_20200903.mxd

ATTACHMENT 2

PHOTOGRAPHS

Photo Log

Photo 1: Wetland 1, Data Point 1 (DP-1), PEM, Facing SE

Photo 2: Wetland 1, DP-1, PEM, Facing NW

Photo 3: Wetland 1, Representative view of reed canary grass infestation, Facing NE

Photo 4: Upland Data Point DP-2, associated with Wetland 1, facing SE

Photo Log

Photo 5: Wetland 1, DP-5, PSS, Facing SE

Photo 6: Wetland 1, DP-5, PSS, Facing NW

Photo 7: Wetland 2, Representative view of PSS willow monocultures, Facing W

Photo 8: Upland DP-3, associated with Wetland 2, facing NW

Photo Log

Photo 9: Wetland 2, DP-4, PEM, Facing NW

Photo 10: Wetland 2, DP-4, PEM, Facing SW

Photo 11: Upland DP-6, associated with Wetland 3 and 4, Facing E

Photo 12: Wetland 3, DP-7, PEM facing E

Photo Log

Photo 13: Wetland 3, DP-7, PEM facing SW

Photo 14: Wetland 3, DP-8,PSS, Facing SW

Photo 15: Wetland 3, DP-8,PSS, dogwood thicket, Facing E

Photo 16: Wetland 3, Representative reed canary grass infestation, facing NW

Photo Log

Photo 17: Wetland 3, Reed canary infestation, facing NE

Photo 18: Wetland 5, DP-9, PEM, Reed canary grass wetland, Facing NE

Photo 19: Wetland 5, DP-9, PEM, Reed canary grass wetland, Facing SW

Photo 20: Wetland 4,DP-10, PEM, View of PSS component, facing SE

Photo Log

Photo 21: Wetland 4, DP-10, PEM, underneath electric ROW, facing NE

ATTACHMENT 3

WETLAND AND UPLAND DATA FORMS

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site:	Wildcat Hollow	City/County:	McKean	Sampling Date:	9/1//2020
Applicant/Owner:	First Pennsylvania Resource	State:	PA	Sampling Point:	DP1
Investigator(s):	H.Kalk/Z.Stephens	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Floodplain Complex	Local relief (concave, convex, none):	Concave	Slope (%):	00-05
Subregion (LRR or MLRA)	LRR N, MLRA 126	Lat.:	41.71955	Long:	-78.55666
Datum:	NAD 83				
Soil Map Unit Name:	Philo silt loam (Ph)			NWI Classification:	PEMC

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

Are vegetation No, soil No, or hydrology No significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation No, soil No, or hydrology No 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	**Is the sampled area within a wetland?**	**Yes**
Hydric soil present?	Yes		
Indicators of wetland hydrology present?	Yes		

Remarks:

Wetland Datapoint for Wetland 1 (PEM). Wetland 1 is a PEM/PSS complex in a fallow field between an overhead electric ROW and Marvin Creek.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

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)
X	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		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Wetland Hydrology Present? **Yes**

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants. Sampling Point: DP1

Tree Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0 = Total Cover		
50 % of total cover: 0.0	20 % of total cover: 0.0		

Sapling Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0 = Total Cover		
50 % of total cover: 0.0	20 % of total cover: 0.0		

Shrub Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0 = Total Cover		
50 % of total cover: 0.0	20 % of total cover: 0.0		

Herb Stratum (Plot Size: 5 x 5)	Absolute % Cover	Dominant Species?	Indicator Status
1 *Juncus effusus*	40	Yes	FACW
2 *Carex vulpinoidea*	25	Yes	OBL
3 *Phalaris arundinacea*	15	No	FACW
4 *Agrostis gigantea*	10	No	FACW
5 *Solidago rugosa*	5	No	FAC
6 *Scirpus atrovirens*	5	No	OBL
7 *Doellingeria umbellata*	5	No	FACW
8 *Carex lurida*	2	No	OBL
9			
10			
	107 = Total Cover		
50 % of total cover: 53.5	20 % of total cover: 21.4		

Woody Vine Stratum (Plot Size:)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
	0 = Total Cover		
50 % of total cover: 0.0	20 % of total cover: 0.0		

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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:
OBL species	32	x 1 = 32
FACW species	70	x 2 = 140
FAC species	5	x 3 = 15
FACU species	0	x 4 = 0
UPL species	0	x 5 = 0
Column totals	107 (A)	187 (B)

Prevalence Index = B/A = 1.75

Hydrophytic Vegetation Indicators:

X 1-Rapid test for hydrophytic vegetation

X 2-Dominance test is >50%

X 3-Prevalence index is ≤3.0*

___ 4-Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3-20 ft (1-6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site:	Wildcat Hollow	City/County:	McKean	Sampling Date:	9/1//2020
Applicant/Owner	First Pennsylvania Resource	State:	PA	Sampling Point:	DP2
Investigator(s):	H.Kalk/Z.Stephens	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Terrace	Local relief (concave, convex, none):	None	Slope (%):	00-05
Subregion (LRR or MLRA)	LRR N, MLRA 126	Lat.:	41.719	Long.:	-78.55733
Datum:	NAD 83				
Soil Map Unit Name:	Philo silt loam (Ph)	NWI Classification:	PEMC		

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

Are vegetation No, soil No, or hydrology No significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation No, soil No, or hydrology No 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?	No		
Hydric soil present?	No	**Is the sampled area within a wetland?**	**No**
Indicators of wetland hydrology present?	No		

Remarks:

Upland Datapoint for Wetland 1 (PEM). Upland is a raised area in a fallow field between an overhead electric ROW and Marvin Creek.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

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? **No**

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants. Sampling Point: DP2

Tree Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0 = Total Cover		
50 % of total cover:	0.0	20 % of total cover:	0.0

Sapling Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0 = Total Cover		
50 % of total cover:	0.0	20 % of total cover:	0.0

Shrub Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0 = Total Cover		
50 % of total cover:	0.0	20 % of total cover:	0.0

Herb Stratum (Plot Size: 5 x 5)	Absolute % Cover	Dominant Species?	Indicator Status
1 *Solidago rugosa*	10	No	FAC
2 *Solidago altissima*	20	Yes	FACU
3 *Euthamia graminifolia*	10	No	FAC
4 *Rosa multiflora*	15	No	FACU
5 *Plantago lanceolata*	10	No	UPL
6 *Potentilla simplex*	10	No	FACU
7 *Agrostis gigantea*	10	No	FACW
8 *Doellingeria umbellata*	5	No	FACW
9 *Daucus carota*	2	No	UPL
10 *Malus sp.*	2	No	UPL
	94 = Total Cover		
50 % of total cover:	47.0	20 % of total cover:	18.8

Woody Vine Stratum (Plot Size:)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
	0 = Total Cover		
50 % of total cover:	0.0	20 % of total cover:	0.0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	15	x 2 =	30
FAC species	20	x 3 =	60
FACU species	45	x 4 =	180
UPL species	14	x 5 =	70
Column totals	94 (A)		340 (B)

Prevalence Index = B/A = 3.62

Hydrophytic Vegetation Indicators:

___ 1-Rapid test for hydrophytic vegetation

___ 2-Dominance test is >50%

___ 3-Prevalence index is ≤3.0*

___ 4-Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3-20 ft (1-6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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

SOIL **Sampling Point:** DP2

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-10	10YR 4/3	100					SiSa	
10-16	10YR 5/6	75					Sa	
	10YR 4/2	25					SiSa	

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Suface (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*:**

- 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)

***Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric soil present? **No**

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site:	Wildcat Hollow	City/County:	McKean	Sampling Date:	9/1//2020
Applicant/Owner:	First Pennsylvania Resource	State:	PA	Sampling Point:	DP3
Investigator(s):	H.Kalk/Z.Stephens	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Slope	Local relief (concave, convex, none):	Convex	Slope (%):	10-15
Subregion (LRR or MLRA)	LRR N, MLRA 126	Lat.:	41.71979	Long.:	-78.55768
Datum:	NAD 83				
Soil Map Unit Name:	Philo silt loam (Ph)	NWI Classification:	PEMC		

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

Are vegetation No, soil No, or hydrology No significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation No, soil No, or hydrology No 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?	No		
Hydric soil present?	No	**Is the sampled area within a wetland?**	**No**
Indicators of wetland hydrology present?	No		

Remarks:

Upland Datapoint for Wetland 2. Upland is a hillslope within an fallow field between a railroad berm and Marvin Creek.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

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? **No**

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants. Sampling Point: DP3

Tree Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0	= Total Cover	
50 % of total cover:	0.0	20 % of total cover:	0.0

Sapling Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0	= Total Cover	
50 % of total cover:	0.0	20 % of total cover:	0.0

Shrub Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0	= Total Cover	
50 % of total cover:	0.0	20 % of total cover:	0.0

Herb Stratum (Plot Size: 5 x 5)	Absolute % Cover	Dominant Species?	Indicator Status
1 *Solidago altissima*	60	Yes	FACU
2 *Rubus sp.*	15	No	FAC
3 *Agrostis gigantea*	10	No	FACW
4 *Carex vulpinoidea*	5	No	OBL
5 *Daucus carota*	2	No	UPL
6 *Taraxacum officinale*	2	No	FACU
7			
8			
9			
10			
	94	= Total Cover	
50 % of total cover:	47.0	20 % of total cover:	18.8

Woody Vine Stratum (Plot Size:)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
	0	= Total Cover	
50 % of total cover:	0.0	20 % of total cover:	0.0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 0.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	5	x 1 =	5
FACW species	10	x 2 =	20
FAC species	15	x 3 =	45
FACU species	62	x 4 =	248
UPL species	2	x 5 =	10
Column totals	94 (A)		328 (B)

Prevalence Index = B/A = 3.49

Hydrophytic Vegetation Indicators:

___ 1-Rapid test for hydrophytic vegetation

___ 2-Dominance test is >50%

___ 3-Prevalence index is ≤3.0*

___ 4-Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3-20 ft (1-6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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

Rubus sp. could not be identified due to seasonality. Estimated to be a minimum of FAC due to geomorphic position and lack of wetland hydrology.

SOIL **Sampling Point:** DP3

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-8	10YR 4/3	100					SiL	Roots
8+								Rock

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Suface (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*:**

- 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)

***Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type: Rock

Depth (inches): 8

Hydric soil present? **No**

Remarks:

SOIL **Sampling Point:** DP1

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-3	10YR 4/4	100					SaSi	
3-16	10YR 4/1	65	10YR 4/6	30	C	M	SiL	
				5	C	PL		

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

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

***Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric soil present? **Yes**

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site:	Wildcat Hollow	City/County:	McKean	Sampling Date:	9/1//2020
Applicant/Owner:	First Pennsylvania Resource	State:	PA	Sampling Point:	DP4
Investigator(s):	H.Kalk/Z.Stephens	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Floodplain Complex	Local relief (concave, convex, none):	Concave	Slope (%):	00-05
Subregion (LRR or MLRA)	LRR N, MLRA 126	Lat.:	41.71971	Long:	-78.55766
Datum:	NAD 83				
Soil Map Unit Name:	Philo silt loam (Ph)			NWI Classification:	PEMC

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

Are vegetation No, soil No, or hydrology No significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation No, soil No, or hydrology No 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	**Is the sampled area within a wetland?**	**Yes**
Hydric soil present?	Yes		
Indicators of wetland hydrology present?	Yes		

Remarks:

Wetland Datapoint for Wetland 2 (PEM). Wetland 2 is a PEM/PSS complex in a fallow field between a railroad berm and Marvin Creek.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

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)
X	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		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Wetland Hydrology Present? **Yes**

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants. Sampling Point: DP4

Tree Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0	= Total Cover	
50 % of total cover:	0.0	20 % of total cover:	0.0

Sapling Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0	= Total Cover	
50 % of total cover:	0.0	20 % of total cover:	0.0

Shrub Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1 *Cornus amomum*	10	Yes	FACW
2 *Salix sericea*	3	Yes	OBL
3			
4			
5			
	13	= Total Cover	
50 % of total cover:	6.5	20 % of total cover:	2.6

Herb Stratum (Plot Size: 5 x 5)	Absolute % Cover	Dominant Species?	Indicator Status
1 *Euthamia graminifolia*	30	Yes	FAC
2 *Carex vulpinoidea*	30	Yes	OBL
3 *Doellingeria umbellata*	15	No	FACW
4 *Scirpus cyperinus*	10	No	FACW
5 *Phalaris arundinacea*	20	No	FACW
6 *Agrostis gigantea*	10	No	FACW
7 *Elymus virginicus*	10	No	FACW
8 *Carex lurida*	5	No	FACW
9 *Carex crinita*	10	No	OBL
10 *Eupatorium perfoliatum*	5	No	FACW
	145	= Total Cover	
50 % of total cover:	72.5	20 % of total cover:	29.0

Woody Vine Stratum (Plot Size:)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
	0	= Total Cover	
50 % of total cover:	0.0	20 % of total cover:	0.0

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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	43	x 1 =	43
FACW species	85	x 2 =	170
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	158 (A)		303 (B)

Prevalence Index = B/A = 1.92

Hydrophytic Vegetation Indicators:

- ___ 1-Rapid test for hydrophytic vegetation
- X 2-Dominance test is >50%
- X 3-Prevalence index is ≤3.0*
- ___ 4-Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3-20 ft (1-6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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

SOIL **Sampling Point:** DP4

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-16	10YR 4/1	85	10 YR 4/6	10	C	M	SiL	
				5	C	PL		

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) (LRR N)
- ___ Depleted Below Dark Suface (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*:**

- ___ 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)

***Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric soil present? **Yes**

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site:	Wildcat Hollow	City/County:	McKean	Sampling Date:	9/1//2020
Applicant/Owner:	First Pennsylvania Resource	State:	PA	Sampling Point:	DP5
Investigator(s):	H.Kalk/Z.Stephens	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Floodplain Complex	Local relief (concave, convex, none):	Concave	Slope (%):	00-05
Subregion (LRR or MLRA)	LRR N, MLRA 126	Lat.:		Long:	Datum: NAD 83
Soil Map Unit Name:	Philo silt loam (Ph)			NWI Classification:	PEMC

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

Are vegetation No, soil No, or hydrology No significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation No, soil No, or hydrology No 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	**Is the sampled area within a wetland?**	**Yes**
Hydric soil present?	Yes		
Indicators of wetland hydrology present?	Yes		

Remarks:

Wetland Datapoint for Wetland 1 (PSS). Wetland 1 is a PEM/PSS complex in a fallow field between an overhead electric ROW and Marvin Creek.

HYDROLOGY

Wetland Hydrology Indicators:

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

	Surface Water (A1)		True Aquatic Plants (B14)		Surface Soil Cracks (B6)
	High Water Table (A2)		Hydrogen Sulfide Odor (C1)	X	Sparsely Vegetated Concave Surface (B8)
	Saturation (A3)	X	Oxidized Rhizospheres on Living Roots (C3)	X	Drainage Patterns (B10)
	Water Marks (B1)		Presence of Reduced Iron (C4)		Moss Trim Lines (B16)
	Sediment Deposits (B2)		Recent Iron Reduction in Tilled Soils (C6)		Dry-Season Water Table (C2)
	Drift Deposits (B3)		Thin Muck Surface (C7)		Crayfish Burrows (C8)
	Algal Mat or Crust (B4)		Other (Explain in Remarks)	X	Saturation Visible on Aerial Imagery (C9)
	Iron Deposits (B5)				Stunted or Stressed Plants (D1)
	Inundation Visible on Aerial Imagery (B7)			X	Geomorphic Position (D2)
X	Water-Stained Leaves (B9)				Shallow Aquitard (D3)
	Aquatic Fauna (B13)				Microtopographic Relief (D4)
					FAC-Neutral Test (D5)

Secondary Indicators (minimum of two required)

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**

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants. Sampling Point: DP5

Tree Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0 = Total Cover		
50 % of total cover: 0.0	20 % of total cover: 0.0		

Sapling Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0 = Total Cover		
50 % of total cover: 0.0	20 % of total cover: 0.0		

Shrub Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1 *Salix sericea*	75	Yes	FACW
2			
3			
4			
5			
	75 = Total Cover		
50 % of total cover: 37.5	20 % of total cover: 15.0		

Herb Stratum (Plot Size: 5 x 5)	Absolute % Cover	Dominant Species?	Indicator Status
1 *Ludwigia palustris*	15	No	OBL
2 *Onoclea sensibilis*	20	Yes	FACW
3 *Lysimachia ciliata*	20	Yes	FACW
4 *Carex sp.*	15	No	FACW
5 *Impatiens capensis*	5	No	FACW
6 *Solidago rugosa*	5	No	FAC
7			
8			
9			
10			
	80 = Total Cover		
50 % of total cover: 40.0	20 % of total cover: 16.0		

Woody Vine Stratum (Plot Size:)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
	0 = Total Cover		
50 % of total cover: 0.0	20 % of total cover: 0.0		

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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	15	x 1 =	15
FACW species	135	x 2 =	270
FAC species	5	x 3 =	15
FACU species	0 UPL	x 4 =	0
species	0	x 5 =	0
Column totals	155 (A)		300 (B)

Prevalence Index = B/A = 1.93

Hydrophytic Vegetation Indicators:

- X 1-Rapid test for hydrophytic vegetation
- X 2-Dominance test is >50%
- X 3-Prevalence index is ≤3.0*
- ___ 4-Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- ___ Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3-20 ft (1-6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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

SOIL **Sampling Point:** DP5

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-16	10YR 5/1		7.5YR 4/4	10	C	M	SiL	
				20	C	PL		

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- ___ Histisol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5)
- ___ 2 cm Muck (A10) (LRR N)
- ___ Depleted Below Dark Suface (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*:**

- ___ 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)

***Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric soil present? **Yes**

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site:	Wildcat Hollow	City/County:	McKean	Sampling Date:	9/1//2020
Applicant/Owner:	First Pennsylvania Resource	State:	PA	Sampling Point:	DP6
Investigator(s):	H.Kalk/Z.Stephens	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Terrace	Local relief (concave, convex, none):	Convex	Slope (%):	5-10
Subregion (LRR or MLRA)	LRR N, MLRA 126	Lat.:	41.71835	Long.:	-78.55948	Datum:	NAD 83
Soil Map Unit Name:	Philo silt loam (Ph)			NWI Classification:	N/A

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

Are vegetation No, soil No, or hydrology No significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation No, soil No, or hydrology No 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?	No	**Is the sampled area within a wetland?**	**No**
Hydric soil present?	No		
Indicators of wetland hydrology present?	No		

Remarks:

Upland Datapoint for Wetland 3. Upland is within a fallow field between Wetland 3 and Marvin Creek.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

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? **No**

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants. Sampling Point: DP6

Tree Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1 *Betula lenta*	10	Yes	FACU
2			
3			
4			
5			
	10 = Total Cover		
50 % of total cover: 5.0	20 % of total cover: 2.0		

Sapling Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0 = Total Cover		
50 % of total cover: 0.0	20 % of total cover: 0.0		

Shrub Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1 *Craetagus sp.*	5	Yes	FAC
2 *Malus sp.*	10	Yes	UPL
3			
4			
5			
	15 = Total Cover		
50 % of total cover: 7.5	20 % of total cover: 3.0		

Herb Stratum (Plot Size: 5 x 5)	Absolute % Cover	Dominant Species?	Indicator Status
1 *Solidago altissima*	35	Yes	FACU
2 *Phleum pratense*	30	Yes	FAC
3 *Doellingeria umbellata*	20	Yes	FACW
4 *Achillea millefolium*	5	No	FACU
5 *Rubus sp.*	3	No	FAC
6			
7			
8			
9			
10			
	93 = Total Cover		
50 % of total cover: 46.5	20 % of total cover: 18.6		

Woody Vine Stratum (Plot Size:)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
	0 = Total Cover		
50 % of total cover: 0.0	20 % of total cover: 0.0		

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across all Strata: 6 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 50.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	x 2 =	40
FAC species	38	x 3 =	114
FACU species	50	x 4 =	200
UPL species	10	x 5 =	50
Column totals	118 (A)		404 (B)

Prevalence Index = B/A = 3.42

Hydrophytic Vegetation Indicators:

___ 1-Rapid test for hydrophytic vegetation

___ 2-Dominance test is >50%

___ 3-Prevalence index is ≤3.0*

___ 4-Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3-20 ft (1-6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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

Rubus sp. could not be identified due to seasonality. Estimated to be a minimum of FAC due to geomorphic position and lack of wetland hydrology.

SOIL **Sampling Point:** DP6

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-16	10YR 3/3	95	10YR 5/6	5	C	M	SiL	Roots and rock

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- Histisol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (LRR N)
- Depleted Below Dark Suface (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*:**

- 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)

***Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric soil present? **No**

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site:	Wildcat Hollow	City/County:	McKean	Sampling Date:	9/1//2020
Applicant/Owner:	First Pennsylvania Resource	State:	PA	Sampling Point:	DP7
Investigator(s):	H.Kalk/Z.Stephens	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Floodplain Complex	Local relief (concave, convex, none):	Concave	Slope (%):	00-05
Subregion (LRR or MLRA)	LRR N, MLRA 126	Lat.:	41.71842	Long:	-78.55957
Datum:	NAD 83				
Soil Map Unit Name:	Philo silt loam (Ph)	NWI Classification:	N/A		

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

Are vegetation No, soil No, or hydrology No significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation No, soil No, or hydrology No 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		
Hydric soil present?	Yes	**Is the sampled area within a wetland?**	**Yes**
Indicators of wetland hydrology present?	Yes		

Remarks:

Wetland Datapoint for Wetland 3 (PEM). Wetland 3 is a PEM/PSS complex in a fallow field between an abandoned railroad berm and Marvin Creek.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

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)
X	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**

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants. Sampling Point: DP7

Tree Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0	= Total Cover	
50 % of total cover:	0.0	20 % of total cover:	0.0

Sapling Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0	= Total Cover	
50 % of total cover:	0.0	20 % of total cover:	0.0

Shrub Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1 *Rosa multiflora*	10	Yes	FACU
2 *Cornus amomum*	3	Yes	FACW
3			
4			
5			
	13	= Total Cover	
50 % of total cover:	6.5	20 % of total cover:	2.6

Herb Stratum (Plot Size: 5 x 5)	Absolute % Cover	Dominant Species?	Indicator Status
1 *Scirpus atrovirens*	30	Yes	OBL
2 *Euthamia graminifolia*	20	No	FAC
3 *Solidago rugosa*	15	No	FAC
4 *Carex lurida*	15	No	OBL
5 *Agrostis gigantea*	10	No	FACW
6 *Juncus effusus*	10	No	FACW
7 *Symphyotrichum novae-angliae*	5	No	FACW
8			
9			
10			
	105	= Total Cover	
50 % of total cover:	52.5	20 % of total cover:	21.0

Woody Vine Stratum (Plot Size:)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
	0	= Total Cover	
50 % of total cover:	0.0	20 % of total cover:	0.0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 2 (A)

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

Percent of Dominant Species that are OBL, FACW, or FAC: 66.67% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	45	x 1 =	45
FACW species	28	x 2 =	56
FAC species	35	x 3 =	105
FACU species	10	x 4 =	40
UPL species	0	x 5 =	0
Column totals	118 (A)		246 (B)

Prevalence Index = B/A = 2.08

Hydrophytic Vegetation Indicators:

- ___ 1-Rapid test for hydrophytic vegetation
- X 2-Dominance test is >50%
- X 3-Prevalence index is ≤3.0*
- ___ 4-Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)
- Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3-20 ft (1-6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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

SOIL **Sampling Point:** DP7

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-16	10YR 51	80	10YR 3/6	10	C	PL	SiL	
				10	C	M		

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- [ ] Histisol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5)
- [ ] 2 cm Muck (A10) (LRR N)
- [ ] Depleted Below Dark Suface (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*:**

- [ ] 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)

***Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric soil present? **Yes**

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site:	Wildcat Hollow	City/County:	McKean	Sampling Date:	9/1//2020
Applicant/Owner:	First Pennsylvania Resource	State:	PA	Sampling Point:	DP8
Investigator(s):	H.Kalk/Z.Stephens	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Floodplain Complex	Local relief (concave, convex, none):	Concave	Slope (%):	00-05
Subregion (LRR or MLRA)	LRR N, MLRA 126	Lat.:	41.71845	Long:	-78.56009
Datum:	NAD 83				
Soil Map Unit Name:	Philo silt loam (Ph)	NWI Classification:	N/A		

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

Are vegetation No, soil No, or hydrology No significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation No, soil No, or hydrology No 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	**Is the sampled area within a wetland?**	**Yes**
Hydric soil present?	Yes		
Indicators of wetland hydrology present?	Yes		

Remarks:

Wetland Datapoint for Wetland3 (PSS). Wetland 3 is a PEM/PSS complex in a fallow field between an abandoned railroad berm and Marvin Creek. Culverts drain hydrology from the west of the berm into the wetlands.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

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)
X	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**

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants. Sampling Point: DP8

Tree Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0 = Total Cover		
50 % of total cover:	0.0	20 % of total cover:	0.0

Sapling Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0 = Total Cover		
50 % of total cover:	0.0	20 % of total cover:	0.0

Shrub Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1 *Cornus amomum*	30	Yes	FACW
2 *Salix sericea*	20	Yes	OBL
3			
4			
5			
	50 = Total Cover		
50 % of total cover:	25.0	20 % of total cover:	10.0

Herb Stratum (Plot Size: 5 x 5)	Absolute % Cover	Dominant Species?	Indicator Status
1 *Scirpus cyperinus*	30	Yes	FACW
2 *Euthamia graminifolia*	30	Yes	FAC
3 *Phalaris arundinacea*	30	Yes	FACW
4 *Typha angustifolia*	15	No	FACW
5 *Leersia oryzoides*	10	No	OBL
6 *Onoclea sensibilis*	10	No	FACW
7 *Eupatorium perfoliatum*	10	No	FACW
8 *Symphyotrichum novae-angliae*	5	No	FACW
9			
10			
	140 = Total Cover		
50 % of total cover:	70.0	20 % of total cover:	28.0

Woody Vine Stratum (Plot Size:)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
	0 = Total Cover		
50 % of total cover:	0.0	20 % of total cover:	0.0

Dominance Test Worksheet

Number of Dominant Species that are OBL, FACW, or FAC: 5 (A)

Total Number of Dominant Species Across all Strata: 5 (B)

Percent of Dominant Species that are OBL, FACW, or FAC: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:	
OBL species	30	x 1 =	30
FACW species	130	x 2 =	260
FAC species	30	x 3 =	90
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column totals	190 (A)		380 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

- ___ 1-Rapid test for hydrophytic vegetation
- X 2-Dominance test is >50%
- X 3-Prevalence index is ≤3.0*
- ___ 4-Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3-20 ft (1-6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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

SOIL **Sampling Point:** DP8

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-16	10YR 4/1	80	10 YR 3/6	5	C	M	SiL	
				15	C	PL		

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- [ ] Histisol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5)
- [ ] 2 cm Muck (A10) (LRR N)
- [ ] Depleted Below Dark Suface (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*:**

- [ ] 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)

***Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric soil present? **Yes**

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site:	Wildcat Hollow	City/County:	McKean	Sampling Date:	9/1//2020
Applicant/Owner:	First Pennsylvania Resource	State:	PA	Sampling Point:	DP9
Investigator(s):	H.Kalk/Z.Stephens	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Depressional	Local relief (concave, convex, none):	Concave	Slope (%):	00-05
Subregion (LRR or MLRA)	LRR N, MLRA 126	Lat.:	41.71794	Long:	-78.55975
Soil Map Unit Name:	Philo silt loam (Ph)			NWI Classification:	PEMC

Datum: NAD 83

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

Are vegetation No, soil No, or hydrology No significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation No, soil No, or hydrology No 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	**Is the sampled area within a wetland?**	**Yes**
Hydric soil present?	Yes		
Indicators of wetland hydrology present?	Yes		

Remarks:

Wetland Datapoint for Wetland 5 (PEM). Wetland 5 is a PEM depression in a fallow field abutting Marvin Creek. Hydrology likely drains from Wetland 3 to the north.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

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		No	X	Depth (inches):	
Saturation present? (includes capillary fringe)	Yes		No	X	Depth (inches):	

Wetland Hydrology Present? **Yes**

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants. Sampling Point: DP9

Tree Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0 = Total Cover		
50 % of total cover: 0.0	20 % of total cover: 0.0		

Sapling Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0 = Total Cover		
50 % of total cover: 0.0	20 % of total cover: 0.0		

Shrub Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0 = Total Cover		
50 % of total cover: 0.0	20 % of total cover: 0.0		

Herb Stratum (Plot Size: 5 x 5)	Absolute % Cover	Dominant Species?	Indicator Status
1 *Phalaris arundinacea*	90	Yes	FACW
2 *Doellingeria umbellata*	5	No	FACW
3 *Scirpus cyperinus*	10	No	FACW
4			
5			
6			
7			
8			
9			
10			
	105 = Total Cover		
50 % of total cover: 52.5	20 % of total cover: 21.0		

Woody Vine Stratum (Plot Size:)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
	0 = Total Cover		
50 % of total cover: 0.0	20 % of total cover: 0.0		

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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:
OBL species	0	x 1 = 0
FACW species	105	x 2 = 210
FAC species	0	x 3 = 0
FACU species	0	x 4 = 0
UPL species	0	x 5 = 0
Column totals	105 (A)	210 (B)

Prevalence Index = B/A = 2.00

Hydrophytic Vegetation Indicators:

X 1-Rapid test for hydrophytic vegetation

X 2-Dominance test is >50%

X 3-Prevalence index is ≤3.0*

___ 4-Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3-20 ft (1-6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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

SOIL **Sampling Point:** DP9

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-16	10YR 4/1	80	10 YR 3/6	10	C	M	SiL	
				10	C	PL		

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- [ ] Histisol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5)
- [ ] 2 cm Muck (A10) (LRR N)
- [ ] Depleted Below Dark Suface (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*:**

- [ ] 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)

***Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric soil present? **Yes**

Remarks:

WETLAND DETERMINATION DATA FORM - Eastern Mountains and Piedmont Region

Project/Site:	Wildcat Hollow	City/County:	McKean	Sampling Date:	9/1//2020
Applicant/Owner:	First Pennsylvania Resource	State:	PA	Sampling Point:	DP10
Investigator(s):	H.Kalk/Z.Stephens	Section, Township, Range:			
Landform (hillslope, terrace, etc.):	Floodplain Complex	Local relief (concave, convex, none):	Concave	Slope (%):	00-05
Subregion (LRR or MLRA)	LRR N, MLRA 126	Lat.:	41.71827	Long:	-78.55807
Datum:	NAD 83				
Soil Map Unit Name:	Philo silt loam (Ph)	NWI Classification:	N/A		

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

Are vegetation No, soil No, or hydrology No significantly disturbed? Are "normal circumstances" present? Yes

Are vegetation No, soil No, or hydrology No 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	**Is the sampled area within a wetland?**	**Yes**
Hydric soil present?	Yes		
Indicators of wetland hydrology present?	Yes		

Remarks:

Wetland Datapoint for Wetland 4 (PEM). Wetland 4 is a PEM/PSS complex between Marvin Creek and two roadways. An overhead electric ROW cuts through the complex. There is what seems to be an old pond which has filled in to the south of the ROW.

HYDROLOGY

Wetland Hydrology Indicators:

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

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

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)
X	Saturation Visible on Aerial Imagery (C9)
	Stunted or Stressed Plants (D1)
X	Geomorphic Position (D2)
	Shallow Aquitard (D3)
	Microtopographic Relief (D4)
X	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**

Describe recorded data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

VEGETATION (Five Strata) - Use scientific names of plants. Sampling Point: DP10

Tree Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0 = Total Cover		
50 % of total cover: 0.0	20 % of total cover: 0.0		

Sapling Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0 = Total Cover		
50 % of total cover: 0.0	20 % of total cover: 0.0		

Shrub Stratum (Plot Size: 15 x 15)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
5			
	0 = Total Cover		
50 % of total cover: 0.0	20 % of total cover: 0.0		

Herb Stratum (Plot Size: 5 x 5)	Absolute % Cover	Dominant Species?	Indicator Status
1 *Mentha arvensis*	40	Yes	FACW
2 *Scirpus atrovirens*	45	Yes	OBL
3 *Impatiens capensis*	10	No	FACW
4 *Glyceria grandis*	10	No	OBL
5			
6			
7			
8			
9			
10			
	105 = Total Cover		
50 % of total cover: 52.5	20 % of total cover: 21.0		

Woody Vine Stratum (Plot Size:)	Absolute % Cover	Dominant Species?	Indicator Status
1			
2			
3			
4			
	0 = Total Cover		
50 % of total cover: 0.0	20 % of total cover: 0.0		

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: 100.00% (A/B)

Prevalence Index Worksheet

Total % Cover of:		Multiply by:
OBL species	55	x 1 = 55
FACW species	50	x 2 = 100
FAC species	0	x 3 = 0
FACU species	0	x 4 = 0
UPL species	0	x 5 = 0
Column totals	105 (A)	155 (B)

Prevalence Index = B/A = 1.48

Hydrophytic Vegetation Indicators:

X 1-Rapid test for hydrophytic vegetation

X 2-Dominance test is >50%

X 3-Prevalence index is ≤3.0*

___ 4-Morphogical adaptations* (provide supporting data in Remarks or on a separate sheet)

Problematic hydrophytic vegetation* (explain)

*Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic

Definitions of Vegetation Strata:

Tree - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling - Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub - Woody plants, excluding woody vines, approximately 3-20 ft (1-6 m) in height.

Herb - All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine - All woody vines, regardless of height.

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

SOIL **Sampling Point:** DP10

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

Depth (Inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type*	Loc**		
0-4	10YR 5/1	80	10 YR 4/6	10	C	M	SiL	
				10	C	PL		
4-16	10YR 5/1	75	10YR 4/6	25	C	M	SiC	

*Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains **Location: PL=Pore Lining, M=Matrix

Hydric Soil Indicators:

- [ ] Histisol (A1)
- [ ] Histic Epipedon (A2)
- [ ] Black Histic (A3)
- [ ] Hydrogen Sulfide (A4)
- [ ] Stratified Layers (A5)
- [ ] 2 cm Muck (A10) (LRR N)
- [ ] Depleted Below Dark Suface (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*:**

- [ ] 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)

***Indicators of hydrophytic vegetation and weltand hydrology must be present, unless disturbed or problematic

Restrictive Layer (if observed):

Type:

Depth (inches):

Hydric soil present? **Yes**

Remarks:

APPENDIX D
PA WETLAND CONDITION LEVEL 2 RAPID ASSESSMENT FORMS

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
456456	NFG FM100 Project	10/04/17	0.71	W004, W004B	1.00	

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
T. Malecki, M. Groomer	41.703887	-78.496159	WD058ATMM, PEM wetland

General Comments: PEM wetland located on hilltop depression. Multiple access roads cross the wetland channelizing it with culverts. PEM wetland adjacent to access roads, crosses well pad, and extends into maintained pipeline ROW (0.71 acres in ECL). PEM wetland upslope of existing ROW (4.32 acres delineated). PEM and PFO wetlands beyond existing ROW, downslope of Project (5.16 acres delineated) beyond ECL. Impacts occur only to the PEM wetland area. AA includes 0.71 acres of PEM and 0.29 acres of PEM upslope of Project area.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	0%	0%	60%	**0%**	**40%**	**0%**	**Total Score:**
	Score:	0	0	12	**0**	**4**	**0**	**0.44**
	Total Sub-score:	0.00	0.00	7.20	0.00	1.60	0.00	**8.80**

Comments: Area includes maintained pipeline ROW with access roads and gas well pad. Adjacent forest has maintained understory.

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary **Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting. Gravel access road to gas well pad.

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary **Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	14	* (0.67)	9	
b. Roadbed 100-300:	14	* (0.33)	5	**0.70**
		Total Score:	**14**	

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting. Gravel access road to gas well pad.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No Invasive Species identified in wetland AA.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments:

Maintained pipeline ROW and maintenance road/ATV trail.

a. Invasive Sub-Score:	20	**Total Score**
b. Vegetation Sub-Score:	12	**32**

CI = Total Score/40 **0.80**

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Within ROW alteration caused by pipeline maintenance and ATV use. Ditch and culverts on access roads near gas well pad.

Score:	**12**

CI = Total Score/20 **0.60**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: Two stressors identified due to ROW maintenance, ATV use, and cleared area for gas well pad.

Score:	**14**

CI = Total Score/20 **0.70**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No stressors identified.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No stressors identified.

a. Eutrophication Score	20	**Total Score:**
b. Contaminant Score	20	**40**

CI = Total Score/40 **1.00**

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.71**

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

Roadbed Worksheet

Project Name / Identifier			Date	Name(s) of Evaluator(s)
NFG FM100 Project			10/04/17	T. Malecki, M. Groomer
Resource Identifier	**AA #**	**Lat (dd)**	**Long (dd)**	**Notes:**
WD058ATMM	W004, W0	41.703887	-78.496159	Pipeline access roads and gas well pad

Roadbeds: Record the number of occurrences by roadbed type and distance category. Multiply the number of occurrences by the weighting factors for each roadbed type and distance category then sum the total score for each distance category. The total scores for each distance category are then compared to the condition category descriptions.

Roadbed Type	Distance	Occurrences	Weighting Factor	Score	Distance	Occurrences	Weighting Factor	Score
≥ 4 Lane Paved	0-100 ft.		4	0	100-300 ft.		4	0
2 Lane Paved	0-100 ft.		2	0	100-300 ft.		2	0
1 Lane Paved	0-100 ft.		1	0	100-300 ft.		1	0
Gravel Road	0-100 ft.	1	1	1	100-300 ft.	1	1	1
Dirt Road	0-100 ft.	1	2	2	100-300 ft.	1	2	2
Railroad	0-100 ft.		2	0	100-300 ft.		2	0
Other Roadbeds	0-100 ft.		1, 2 or 4	0	100-300 ft.		1, 2 or 4	0
Total Scores:	0-100 ft.	3			100-300 ft.	3		

Road Comments: Dirt access road/atv trail used for pipeline inspection and maintenance. Gravel access road to gas well pad.

Pennsylvania Wetland Condition Level 2 Rapid Assessment	10/04/17		
(Document No. 310-2137-002)	Occurrence		
Pennsylvania Department of Environmental Protection	in AA		
STRESSOR WORKSHEET	**Y**	**#'s**	**N**
Vegetation Alteration			
Mowing	X		
Moderate livestock grazing (within one year)			X
Crops (annual row crops, within one year)			X
Selective tree harvesting/cutting (>50% removal, within 5 years)			X
Right-of-way clearing (mechanical or chemical)	X	1	
Clear cutting or Brush cutting (mechanized removal of shrubs and saplings)	X		
Removal of woody debris			X
Aquatic weed control (mechanical or herbicide)			X
Excessive herbivory (deer, muskrat, nutria, carp, insects, etc.)			X
Plantation (conversion from typical natural tree species, including orchards)			X
Other:			X
Total Number:	**3**		
Hydrologic Modification			
Ditching, tile draining, or other dewatering methods	X		
Dike/weir/dam			X
Filling/grading			X
Dredging/excavation			X
Stormwater inputs (culvert or similar concentrated urban runoff)	X		
Microtopographic alterations (e.g., plowing, forestry bedding, skidder/ATV tracks)	X		
Dead or dying trees (trunks still standing) *			X
Stream alteration (channelization or incision)			X
Other:			X
Total Number:	**3**		
Sedimentation			
Sediment deposits/plumes			X
Eroding banks/slopes			X
Active construction (earth disturbance for development)	X		
Active plowing (plowing for crop planting in past year)			X
Intensive livestock grazing (in one year, ground is >50% bare)			X
Active selective forestry harvesting (within one year)			X
Active forest harvesting (within two years, includes roads, borrow areas, pads, etc.)	X		
Turbidity (moderate concentration of suspended solids in the water column, obvious sediment discharges)			X
Other:			X
Total Number:	**2**		
Eutrophication			
Direct discharges from agricultural feedlots, manure pits, etc.			X
Direct discharges from septic or sewage treatment plants, fish hatcheries, etc.			X
Heavy or moderately heavy formation of algal mats			X
Other:			X
Total Number:	**0**		
Contaminant/Toxicity			
Severe vegetation stress (source unknown or suspected)			X
Obvious spills, discharges, plumes, odors, etc.			X
Acidic drainages (mined sites, quarries, road cuts)			X
Point discharges from adjacent industrial facilities, landfills, railroad yards, or comparable sites			X
Chemical defoliation (majority of herbaceous and woody plants affected, within one year)			X
Fish or wildlife kills or obvious disease or abnormalities observed			X
Excessive garbage/dumping			X
Other:			X
Total Number:	**0**		

Pennsylvania Wetland Condition Level 2 Rapid Assessment
(Document No. 310-2137-002)
Pennsylvania Department of Environmental Protection

Invasive Species Presence Worksheet

Are invasive species (from list) present at the site in any layer? YES NO

If listed species present, enter the percent areal coverage for each species below:

Species Code	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%	*Species Code*	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%

Total % relative cover of all invasives, collectively on site: 0 %

Comments:

Common Invasives/Aggressives List

Code	Common Name	*Scientific*	Status	Code	Common Name	*Scientific*	Status
aggi2	Redtop	*Agrostis gigantea*	FACW	luhe	Water primrose	*Ludwigia hexapetala*	OBLW
algl2	European Alder	*Alnus glutinosa*	FACW	lyvu	Garden loosestrife	*Lysimachia vulgaris*	OBLW
arhi3	Carpetgrass	*Arthraxon hispidus*	FAC-	lysa2	Purple loosestrife	*Lythrum salicaria*	FACW
beth	Japanese barberry	*Berberis thunbergii*	FACW	maqu	European waterclover	*Marsilea quadrifolia*	OBLW
bevu	European barberry	*Berberis vulgaris*	FACW	mivi	Japanese stiltgrass	*Microstegium vimineum*	FAC
butom	Flowering Rush	*Butomus umbellatus*	OBLW	nami2	Water cress	*Nasturtium officinale*	OBLW
calli6	Pond water-starwort	*Callitriche stagnalis*	OBLW	pelo	Low smartweed	*Persicaria longiseta*	FACW
egde	Brazilian waterweed	*Egeria densa*	OBLW	phar	Reed canary grass	*Phalaris arundinacea*	FACW
elan	Russian olive	*Elaeagnus angustifolia*	FACU	phau7	Common Reed	*Phragmites australis*	OBLW
elum	Autumn olive	*Elaeagnus umbellata*	FACU	potr	Rough bluegrass	*Poa trivialis*	FACW
ephi	Hairy willow-herb	*Epilobium hirsutum*	FACW	pocu6	Japanese knotweed	*Polygonum (Faloia) cuspidatum*	FAC-
eppa5	Willow-herb	*Epilobium parviflorum*	FACW	pgpf	Mile-a-minute	*Polygonum perfoliatum*	FAC-
fasa	Giant knotweed	*Fallopia sachalinensis*	OBLW	puera	Kudzu-vine	*Pueraria lobata*	FAC-
gldi	Mudmats	*Glossostigma diandrum*	OBLW	pysp1	Apple/crabapple/pear	*Pyrus sp.*	FAC?
hola	Velvetgrass	*Holcus lanatus*	FAC	rhfr	Glossy Buckthorn	*Rhamnus frangula*	FAC-
huja	Japanese Hops	*Humulus japonicus*	FACU	romu	Multiflora rose	*Rosa multiflora*	FACU
loja	Japanese honeysuckle	*Lonicera japonica*	FAC-	tyan	Cattail (hybrid)	*Typha angustifolia*	OBLW
lomo	Morrow's honeysuckle	*Lonicera morrowii*	NI	tygl	Hybrid cattail	*Typha x glauca*	OBLW
lota	Tartarian honeysuckle	*Lonicera tatarica*					

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)
456456	NFG FM100 Project	10/9/17	1.02	W007, W007A, W007B	1.02

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
J. Miner, C. Maier, M. Groomer	41.709785	-78.483244	WD083JLM, PEM and PFO wetlands

General Comments: Wetland includes approximately 15-20 percent upland. Hummocky ground where the larger hummocks are upland, primarily around bases of maple trees, wetland in depressions between hummocks. Wetland drains to stream. PEM and PFO wetlands in maintained pipeline ROW (1.02 acres in ECL). PEM and PFO wetland beyond existing ROW, upslope and downslope of Project (2.35 acres delineated) beyond ECL. Impacts occur only to the PEM and PFO wetland area in the disturbed ROW. AA includes 0.82 acres of PEM (W007) and 0.20 acres of PFO (W007A and W007B) within the Project area.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	0%	0%	60%	10%	30%	0%	Total Score:
	Score:	0	0	13	7	4	0	0.49
	Total Sub-score:	0.00	0.00	7.80	0.70	1.20	0.00	9.70

Comments: Area includes maintained pipeline ROW with access road/ATV trail. Adjacent forest has maintained understory.

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary **Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting.

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary **Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	0.85
		Total Score:	17	

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
a. Invasive Species Presence	**High Optimal:** No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No Invasive Species identified in wetland AA.

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.					**CI = Total Score/40**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments:

Maintained pipeline ROW and maintenance road/ATV trail.

a. Invasive Sub-Score:	20	**Total Score**
b. Vegetation Sub-Score:	12	**32**

0.80

4. Hydrologic Modification Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.					**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	**0.85**

Comments: Within ROW alteration caused by pipeline maintenance and ATV use.

Score:	**17**

5. Sediment Stressor Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.					**CI = Total Score/20**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	**0.85**

Comments: One stressor identified due to ROW maintenance and ATV use.

Score:	**17**

6. Water Quality Stressor Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No stressors identified.

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.					**CI = Total Score/40**
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No stressors identified.

a. Eutrophication Score	20	**Total Score:**
b. Contaminant Score	20	**40**

1.00

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.81**

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

Roadbed Worksheet

Project Name / Identifier			Date	Name(s) of Evaluator(s)
NFG FM100 Project			10/9/17	J. Miner, C. Maier, M. Groomer
Resource Identifier	**AA #**	**Lat (dd)**	**Long (dd)**	**Notes:**
WD083JLM	W007, W007A, W007B	41.709785	-78.483244	Pipeline access road/ATV trail

Roadbeds: Record the number of occurrences by roadbed type and distance category. Multiply the number of occurrences by the weighting factors for each roadbed type and distance category then sum the total score for each distance category. The total scores for each distance category are then compared to the condition category descriptions.

Roadbed Type	Distance	Occurrences	Weighting Factor	Score	Distance	Occurrences	Weighting Factor	Score
≥ 4 Lane Paved	0-100 ft.		4	0	100-300 ft.		4	0
2 Lane Paved	0-100 ft.		2	0	100-300 ft.		2	0
1 Lane Paved	0-100 ft.		1	0	100-300 ft.		1	0
Gravel Road	0-100 ft.		1	0	100-300 ft.		1	0
Dirt Road	0-100 ft.	1	2	2	100-300 ft.	1	2	2
Railroad	0-100 ft.		2	0	100-300 ft.		2	0
Other Roadbeds	0-100 ft.		1, 2 or 4	0	100-300 ft.		1, 2 or 4	0
Total Scores:	0-100 ft.	2			100-300 ft.	2		

Road Comments: Unimproved access road/ATV trail used for pipeline inspection and maintenance. Not an improved road, no gravel, no grading.

Pennsylvania Wetland Condition Level 2 Rapid Assessment	10/9/17		
(Document No. 310-2137-002)	Occurrence		
Pennsylvania Department of Environmental Protection	in AA		
STRESSOR WORKSHEET	**Y**	**#'s**	**N**
Vegetation Alteration			
Mowing	X		
Moderate livestock grazing (within one year)			X
Crops (annual row crops, within one year)			X
Selective tree harvesting/cutting (>50% removal, within 5 years)			X
Right-of-way clearing (mechanical or chemical)	X	1	
Clear cutting or Brush cutting (mechanized removal of shrubs and saplings)	X		
Removal of woody debris			X
Aquatic weed control (mechanical or herbicide)			X
Excessive herbivory (deer, muskrat, nutria, carp, insects, etc.)			X
Plantation (conversion from typical natural tree species, including orchards)			X
Other:			X
Total Number:	**3**		
Hydrologic Modification			
Ditching, tile draining, or other dewatering methods			X
Dike/weir/dam			X
Filling/grading			X
Dredging/excavation			X
Stormwater inputs (culvert or similar concentrated urban runoff)			X
Microtopographic alterations (e.g., plowing, forestry bedding, skidder/ATV tracks)	X		
Dead or dying trees (trunks still standing) *			X
Stream alteration (channelization or incision)			X
Other:			X
Total Number:	**1**		
Sedimentation			
Sediment deposits/plumes			X
Eroding banks/slopes			X
Active construction (earth disturbance for development)			X
Active plowing (plowing for crop planting in past year)			X
Intensive livestock grazing (in one year, ground is >50% bare)			X
Active selective forestry harvesting (within one year)			X
Active forest harvesting (within two years, includes roads, borrow areas, pads, etc.)			X
Turbidity (moderate concentration of suspended solids in the water column, obvious sediment discharges)			X
Other:	X		
Total Number:	**1**		
Eutrophication			
Direct discharges from agricultural feedlots, manure pits, etc.			X
Direct discharges from septic or sewage treatment plants, fish hatcheries, etc.			X
Heavy or moderately heavy formation of algal mats			X
Other:			X
Total Number:	**0**		
Contaminant/Toxicity			
Severe vegetation stress (source unknown or suspected)			X
Obvious spills, discharges, plumes, odors, etc.			X
Acidic drainages (mined sites, quarries, road cuts)			X
Point discharges from adjacent industrial facilities, landfills, railroad yards, or comparable sites			X
Chemical defoliation (majority of herbaceous and woody plants affected, within one year)			X
Fish or wildlife kills or obvious disease or abnormalities observed			X
Excessive garbage/dumping			X
Other:			X
Total Number:	**0**		

Pennsylvania Wetland Condition Level 2 Rapid Assessment
(Document No. 310-2137-002)
Pennsylvania Department of Environmental Protection

Invasive Species Presence Worksheet

Are invasive species (from list) present at the site in any layer? YES NO

If listed species present, enter the percent areal coverage for each species below:

Species Code		<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%	*Species Code*	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%

Total % relative cover of all invasives, collectively on site: 0 %

Comments:

Common Invasives/Aggressives List

Code	Common Name	*Scientific*	Status	Code	Common Name	*Scientific*	Status
aggi2	Redtop	*Agrostis gigantea*	FACW	luhe	Water primrose	*Ludwigia hexapetala*	OBLW
algl2	European Alder	*Alnus glutinosa*	FACW	lyvu	Garden loosestrife	*Lysimachia vulgaris*	OBLW
arhi3	Carpetgrass	*Arthraxon hispidus*	FAC-	lysa2	Purple loosestrife	*Lythrum salicaria*	FACW
beth	Japanese barberry	*Berberis thunbergii*	FACW	maqu	European waterclover	*Marsilea quadrifolia*	OBLW
bevu	European barberry	*Berberis vulgaris*	FACW	mivi	Japanese stiltgrass	*Microstegium vimineum*	FAC
butom	Flowering Rush	*Butomus umbellatus*	OBLW	nami2	Water cress	*Nasturtium officinale*	OBLW
calli6	Pond water-starwort	*Callitriche stagnalis*	OBLW	pelo	Low smartweed	*Persicaria longiseta*	FACW
egde	Brazilian waterweed	*Egeria densa*	OBLW	phar	Reed canary grass	*Phalaris arundinacea*	FACW
elan	Russian olive	*Elaeagnus angustifolia*	FACU	phau7	Common Reed	*Phragmites australis*	OBLW
elum	Autumn olive	*Elaeagnus umbellata*	FACU	potr	Rough bluegrass	*Poa trivialis*	FACW
ephi	Hairy willow-herb	*Epilobium hirsutum*	FACW	pocu6	Japanese knotweed	*Polygonum (Faloia) cuspidatum*	FAC-
eppa5	Willow-herb	*Epilobium parviflorum*	FACW	pgpf	Mile-a-minute	*Polygonum perfoliatum*	FAC-
fasa	Giant knotweed	*Fallopia sachalinensis*	OBLW	puera	Kudzu-vine	*Pueraria lobata*	FAC-
gldi	Mudmats	*Glossostigma diandrum*	OBLW	pysp1	Apple/crabapple/pear	*Pyrus sp.*	FAC?
hola	Velvetgrass	*Holcus lanatus*	FAC	rhfr	Glossy Buckthorn	*Rhamnus frangula*	FAC-
huja	Japanese Hops	*Humulus japonicus*	FACU	romu	Multiflora rose	*Rosa multiflora*	FACU
loja	Japanese honeysuckle	*Lonicera japonica*	FAC-	tyan	Cattail (hybrid)	*Typha angustifolia*	OBLW
lomo	Morrow's honeysuckle	*Lonicera morrowii*	NI	tygl	Hybrid cattail	*Typha x glauca*	OBLW
lota	Tartarian honeysuckle	*Lonicera tatarica*					

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
456456	NFG FM100 Project	10/9/17	1.27	W009, W009A, W009B, Pond 03	1.28	

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
J. Miner, C. Maier, M. Groomer	41.7115590	-78.4800720	RW081JLM, PEM and PFO wetlands

General Comments: Perennial stream runs through wetlands and connects to two ponds. Wetlands drain to stream. Wetlands and pond in maintained pipeline ROW (1.28 acres in ECL). PEM and PFO wetland beyond existing ROW, upslope and downslope of Project (2.52 acres delineated) beyond ECL. Impacts occur only to the PEM and PFO wetland area in the disturbed ROW. AA includes 1.09 acres of PEM (W009), 0.17 acres of PFO (W009A and W009B), and 0.02 acres of Pond 03 within the Project area.

1. Wetland Zone of Influence Condition Index

	Condition Category															
	Optimal		Suboptimal				Marginal				Poor					
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.		**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	0%	0%	60%	**10%**	**30%**	**0%**	**Total Score:**
	Score:	0	0	13	**7**	**4**	**0**	
	Total Sub-score:	0.00	0.00	7.80	0.70	1.20	0.00	**9.70**

0.49

Comments: Area includes maintained pipeline ROW with access road/ATV trail, other wetlands, and streams. Adjacent forest has maintained understory.

2. Roadbed Presence Index

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary		**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.			**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.		**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.			**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.		**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.			**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting.

	Condition Categories																				
	Optimal					Suboptimal					Marginal					Poor					
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary		**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.			**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.		**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.			**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.		**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.			**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	17	*** (0.67)**	11
b. Roadbed 100-300:	17	*** (0.33)**	6
		Total Score:	**17**

0.85

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting.

3. Vegetation Condition Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
a. Invasive Species Presence	**High Optimal:** No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.					

10/9/2017

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsylvania except those found within the banks of a watercourse.

SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No Invasive Species identified in wetland AA.

	Condition Category																				
b. Vegetation Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**					**CI = Total Score/40**
	High Optimal: No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments:

Maintained pipeline ROW and maintenance road/ATV trail.

a. Invasive Sub-Score:	20	**Total Score**	**0.80**
b. Vegetation Sub-Score:	12	**32**	

4. Hydrologic Modification Index

	Condition Category																				
Hydrologic Modification Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**					**CI = Total Score/20**
	High Optimal: No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	**0.85**

Comments: Within ROW alteration caused by pipeline maintenance and ATV use.

Score:	**17**

5. Sediment Stressor Index

	Condition Category																				
Sediment Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**					**CI = Total Score/20**
	High Optimal: No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	**0.85**

Comments: One stressor identified due to ROW maintenance and ATV use.

Score:	**17**

6. Water Quality Stressor Index

	Condition Category																				
a. Eutro-phication Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**					
	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No stressors identified.

	Condition Category																				
b. Contaminant / Toxicity Stressor Presence	**Optimal**					**Suboptimal**					**Marginal**					**Poor**					**CI = Total Score/40**
	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments: No stressors identified.

a. Eutrophication Score	20	**Total Score:**	**1.00**
b. Contaminant Score	20	**40**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.81**

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

Roadbed Worksheet

Project Name / Identifier			Date	Name(s) of Evaluator(s)
NFG FM100 Project			10/9/17	J. Miner, C. Maier, M. Groomer
Resource Identifier	**AA #**	**Lat (dd)**	**Long (dd)**	**Notes:**
RW081JLM	W009, W009A, W009B, Pond 03	41.7115590	-78.4800720	Pipeline access road/ATV trail

Roadbeds: Record the number of occurrences by roadbed type and distance category. Multiply the number of occurrences by the weighting factors for each roadbed type and distance category then sum the total score for each distance category. The total scores for each distance category are then compared to the condition category descriptions.

Roadbed Type	Distance	Occurrences	Weighting Factor	Score	Distance	Occurrences	Weighting Factor	Score
≥ 4 Lane Paved	0-100 ft.		4	0	100-300 ft.		4	0
2 Lane Paved	0-100 ft.		2	0	100-300 ft.		2	0
1 Lane Paved	0-100 ft.		1	0	100-300 ft.		1	0
Gravel Road	0-100 ft.		1	0	100-300 ft.		1	0
Dirt Road	0-100 ft.	1	2	2	100-300 ft.	1	2	2
Railroad	0-100 ft.		2	0	100-300 ft.		2	0
Other Roadbeds	0-100 ft.		1, 2 or 4	0	100-300 ft.		1, 2 or 4	0
Total Scores:	0-100 ft.	2			100-300 ft.	2		

Road Comments: Unimproved access road/ATV trail used for pipeline inspection and maintenance. Not an improved road, no gravel, no grading.

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

STRESSOR WORKSHEET

10/9/17

	Occurrence in AA		
	Y	#'s	N
Vegetation Alteration			
Mowing	X		
Moderate livestock grazing (within one year)			X
Crops (annual row crops, within one year)			X
Selective tree harvesting/cutting (>50% removal, within 5 years)			X
Right-of-way clearing (mechanical or chemical)	X	1	
Clear cutting or Brush cutting (mechanized removal of shrubs and saplings)	X		
Removal of woody debris			X
Aquatic weed control (mechanical or herbicide)			X
Excessive herbivory (deer, muskrat, nutria, carp, insects, etc.)			X
Plantation (conversion from typical natural tree species, including orchards)			X
Other:			X
Total Number:	**3**		
Hydrologic Modification			
Ditching, tile draining, or other dewatering methods			X
Dike/weir/dam			X
Filling/grading			X
Dredging/excavation			X
Stormwater inputs (culvert or similar concentrated urban runoff)			X
Microtopographic alterations (e.g., plowing, forestry bedding, skidder/ATV tracks)	X		
Dead or dying trees (trunks still standing) *			X
Stream alteration (channelization or incision)			X
Other:			X
Total Number:	**1**		
Sedimentation			
Sediment deposits/plumes			X
Eroding banks/slopes			X
Active construction (earth disturbance for development)			X
Active plowing (plowing for crop planting in past year)			X
Intensive livestock grazing (in one year, ground is >50% bare)			X
Active selective forestry harvesting (within one year)			X
Active forest harvesting (within two years, includes roads, borrow areas, pads, etc.)			X
Turbidity (moderate concentration of suspended solids in the water column, obvious sediment discharges)			X
Other:	X		
Total Number:	**1**		
Eutrophication			
Direct discharges from agricultural feedlots, manure pits, etc.			X
Direct discharges from septic or sewage treatment plants, fish hatcheries, etc.			X
Heavy or moderately heavy formation of algal mats			X
Other:			X
Total Number:	**0**		
Contaminant/Toxicity			
Severe vegetation stress (source unknown or suspected)			X
Obvious spills, discharges, plumes, odors, etc.			X
Acidic drainages (mined sites, quarries, road cuts)			X
Point discharges from adjacent industrial facilities, landfills, railroad yards, or comparable sites			X
Chemical defoliation (majority of herbaceous and woody plants affected, within one year)			X
Fish or wildlife kills or obvious disease or abnormalities observed			X
Excessive garbage/dumping			X
Other:			X
Total Number:	**0**		

**** Dead or dying trees attributed to beaver activity or emerald ash borer (or other identifiable insect infestation) should not be recorded as a stressor present. The assessor is responsible for recording observations in the comment section concerning presence of these conditions.***

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

Invasive Species Presence Worksheet

Are invasive species (from list) present at the site in any layer? YES NO

If listed species present, enter the percent areal coverage for each species below:

Species Code	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%	*Species Code*	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%

Total % relative cover of all invasives, collectively on site: 0 %

Comments:

Common Invasives/Aggressives List

Code	Common Name	*Scientific*	Status	Code	Common Name	*Scientific*	Status
aggi2	Redtop	*Agrostis gigantea*	FACW	luhe	Water primrose	*Ludwigia hexapetala*	OBLW
algl2	European Alder	*Alnus glutinosa*	FACW	lyvu	Garden loosestrife	*Lysimachia vulgaris*	OBLW
arhi3	Carpetgrass	*Arthraxon hispidus*	FAC-	lysa2	Purple loosestrife	*Lythrum salicaria*	FACW
beth	Japanese barberry	*Berberis thunbergii*	FACW	maqu	European waterclover	*Marsilea quadrifolia*	OBLW
bevu	European barberry	*Berberis vulgaris*	FACW	mivi	Japanese stiltgrass	*Microstegium vimineum*	FAC
butom	Flowering Rush	*Butomus umbellatus*	OBLW	nami2	Water cress	*Nasturtium officinale*	OBLW
calli6	Pond water-starwort	*Callitriche stagnalis*	OBLW	pelo	Low smartweed	*Persicaria longiseta*	FACW
egde	Brazilian waterweed	*Egeria densa*	OBLW	phar	Reed canary grass	*Phalaris arundinacea*	FACW
elan	Russian olive	*Elaeagnus angustifolia*	FACU	phau7	Common Reed	*Phragmites australis*	OBLW
elum	Autumn olive	*Elaeagnus umbellata*	FACU	potr	Rough bluegrass	*Poa trivialis*	FACW
ephi	Hairy willow-herb	*Epilobium hirsutum*	FACW	pocu6	Japanese knotweed	*Polygonum (Faloia) cuspidatum*	FAC-
eppa5	Willow-herb	*Epilobium parviflorum*	FACW	pgpf	Mile-a-minute	*Polygonum perfoliatum*	FAC-
fasa	Giant knotweed	*Fallopia sachalinensis*	OBLW	puera	Kudzu-vine	*Pueraria lobata*	FAC-
gldi	Mudmats	*Glossostigma diandrum*	OBLW	pysp1	Apple/crabapple/pear	*Pyrus sp.*	FAC?
hola	Velvetgrass	*Holcus lanatus*	FAC	rhfr	Glossy Buckthorn	*Rhamnus frangula*	FAC-
huja	Japanese Hops	*Humulus japonicus*	FACU	romu	Multiflora rose	*Rosa multiflora*	FACU
loja	Japanese honeysuckle	*Lonicera japonica*	FAC-	tyan	Cattail (hybrid)	*Typha angustifolia*	OBLW
lomo	Morrow's honeysuckle	*Lonicera morrowii*	NI	tygl	Hybrid cattail	*Typha x glauca*	OBLW
lota	Tartarian honeysuckle	*Lonicera tatarica*					

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
456456	NFG FM100 Project	10/09/17	1.44	W010, W010A, W010B	1.44	

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
T. Malecki, M. Groomer	41.713516	-78.476277	WD089TMM, PEM and PFO wetlands

General Comments: PEM wetland located on hillside and extends into valley bottom draining into stream. PEM wetland adjacent to forest and occurs within maintained pipeline ROW (1.22 acres in ECL). PEM wetland continues downslope of existing ROW (0.91 acres delineated). PFO wetlands beyond existing ROW, upslope of Project (3.39 acres delineated) beyond ECL. Impacts mainly occur to the PEM wetland area, but also include a small portion of the PFO wetland area. AA includes 1.22 acres of PEM (W010) and 0.22 acres of PFO (W010A and W010B) upslope of Project area.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	0%	0%	80%	0%	20%	0%	Total Score:
	Score:	0	0	12	0	4	0	0.52
	Total Sub-score:	0.00	0.00	9.60	0.00	0.80	0.00	10.40

Comments: Area includes maintained pipeline ROW with access road/ATV trail. Adjacent forest has maintained understory.

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary **Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting.

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary **Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	0.85
		Total Score:	17	

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting.

Wetland Condition Assessment Form

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For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No Invasive Species identified in wetland AA.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments:

Maintained pipeline ROW and maintenance road/ATV trail.

a. Invasive Sub-Score:	20	**Total Score**
b. Vegetation Sub-Score:	12	**32**

0.80

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: Within ROW alteration caused by pipeline maintenance and ATV use.

Score:	**17**	

0.85

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/20

Comments: One stressor identified due to ROW maintenance and ATV use.

Score:	**17**	

0.85

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

Comments: No stressors identified.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**

CI = Total Score/40

Comments: No stressors identified.

a. Eutrophication Score	20	**Total Score:**
b. Contaminant Score	20	**40**

1.00

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.81**

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

Roadbed Worksheet

Project Name / Identifier			Date	Name(s) of Evaluator(s)
NFG FM100 Project			10/09/17	T. Malecki, M. Groomer
Resource Identifier	**AA #**	**Lat (dd)**	**Long (dd)**	**Notes:**
WD089TMM	W010, W010A, W010B	41.713516	-78.476277	Pipeline access road/ATV trail

Roadbeds: Record the number of occurrences by roadbed type and distance category. Multiply the number of occurrences by the weighting factors for each roadbed type and distance category then sum the total score for each distance category. The total scores for each distance category are then compared to the condition category descriptions.

Roadbed Type	Distance	Occurrences	Weighting Factor	Score	Distance	Occurrences	Weighting Factor	Score
≥ 4 Lane Paved	0-100 ft.		4	0	100-300 ft.		4	0
2 Lane Paved	0-100 ft.		2	0	100-300 ft.		2	0
1 Lane Paved	0-100 ft.		1	0	100-300 ft.		1	0
Gravel Road	0-100 ft.		1	0	100-300 ft.		1	0
Dirt Road	0-100 ft.	1	2	2	100-300 ft.	1	2	2
Railroad	0-100 ft.		2	0	100-300 ft.		2	0
Other Roadbeds	0-100 ft.		1, 2 or 4	0	100-300 ft.		1, 2 or 4	0
Total Scores:	0-100 ft.	2			100-300 ft.	2		

Road Comments: Dirt access road/ATV trail used for pipeline inspection and maintenance. Not an improved road, no gravel, no grading.

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

STRESSOR WORKSHEET

10/09/17

	Occurrence in AA		
	Y	#'s	N
Vegetation Alteration			
Mowing	X		
Moderate livestock grazing (within one year)			X
Crops (annual row crops, within one year)			X
Selective tree harvesting/cutting (>50% removal, within 5 years)			X
Right-of-way clearing (mechanical or chemical)	X	1	
Clear cutting or Brush cutting (mechanized removal of shrubs and saplings)	X		
Removal of woody debris			X
Aquatic weed control (mechanical or herbicide)			X
Excessive herbivory (deer, muskrat, nutria, carp, insects, etc.)			X
Plantation (conversion from typical natural tree species, including orchards)			X
Other:			X
Total Number:	**3**		
Hydrologic Modification			
Ditching, tile draining, or other dewatering methods			X
Dike/weir/dam			X
Filling/grading			X
Dredging/excavation			X
Stormwater inputs (culvert or similar concentrated urban runoff)			X
Microtopographic alterations (e.g., plowing, forestry bedding, skidder/ATV tracks)	X		
Dead or dying trees (trunks still standing) *			X
Stream alteration (channelization or incision)			X
Other:			X
Total Number:	**1**		
Sedimentation			
Sediment deposits/plumes			X
Eroding banks/slopes			X
Active construction (earth disturbance for development)			X
Active plowing (plowing for crop planting in past year)			X
Intensive livestock grazing (in one year, ground is >50% bare)			X
Active selective forestry harvesting (within one year)			X
Active forest harvesting (within two years, includes roads, borrow areas, pads, etc.)			X
Turbidity (moderate concentration of suspended solids in the water column, obvious sediment discharges)			X
Other:	X		
Total Number:	**1**		
Eutrophication			
Direct discharges from agricultural feedlots, manure pits, etc.			X
Direct discharges from septic or sewage treatment plants, fish hatcheries, etc.			X
Heavy or moderately heavy formation of algal mats			X
Other:			X
Total Number:	**0**		
Contaminant/Toxicity			
Severe vegetation stress (source unknown or suspected)			X
Obvious spills, discharges, plumes, odors, etc.			X
Acidic drainages (mined sites, quarries, road cuts)			X
Point discharges from adjacent industrial facilities, landfills, railroad yards, or comparable sites			X
Chemical defoliation (majority of herbaceous and woody plants affected, within one year)			X
Fish or wildlife kills or obvious disease or abnormalities observed			X
Excessive garbage/dumping			X
Other:			X
Total Number:	**0**		

Pennsylvania Wetland Condition Level 2 Rapid Assessment
(Document No. 310-2137-002)
Pennsylvania Department of Environmental Protection

Invasive Species Presence Worksheet

Are invasive species (from list) present at the site in any layer? YES NO

If listed species present, enter the percent areal coverage for each species below:

Species Code		<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%	*Species Code*	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%

Total % relative cover of all invasives, collectively on site: 0 %

Comments:

Common Invasives/Aggressives List

Code	Common Name	*Scientific*	Status	Code	Common Name	*Scientific*	Status
aggi2	Redtop	*Agrostis gigantea*	FACW	luhe	Water primrose	*Ludwigia hexapetala*	OBLW
algl2	European Alder	*Alnus glutinosa*	FACW	lyvu	Garden loosestrife	*Lysimachia vulgaris*	OBLW
arhi3	Carpetgrass	*Arthraxon hispidus*	FAC-	lysa2	Purple loosestrife	*Lythrum salicaria*	FACW
beth	Japanese barberry	*Berberis thunbergii*	FACW	maqu	European waterclover	*Marsilea quadrifolia*	OBLW
bevu	European barberry	*Berberis vulgaris*	FACW	mivi	Japanese stiltgrass	*Microstegium vimineum*	FAC
butom	Flowering Rush	*Butomus umbellatus*	OBLW	nami2	Water cress	*Nasturtium officinale*	OBLW
calli6	Pond water-starwort	*Callitriche stagnalis*	OBLW	pelo	Low smartweed	*Persicaria longiseta*	FACW
egde	Brazilian waterweed	*Egeria densa*	OBLW	phar	Reed canary grass	*Phalaris arundinacea*	FACW
elan	Russian olive	*Elaeagnus angustifolia*	FACU	phau7	Common Reed	*Phragmites australis*	OBLW
elum	Autumn olive	*Elaeagnus umbellata*	FACU	potr	Rough bluegrass	*Poa trivialis*	FACW
ephi	Hairy willow-herb	*Epilobium hirsutum*	FACW	pocu6	Japanese knotweed	*Polygonum (Faloia) cuspidatum*	FAC-
eppa5	Willow-herb	*Epilobium parviflorum*	FACW	pgpf	Mile-a-minute	*Polygonum perfoliatum*	FAC-
fasa	Giant knotweed	*Fallopia sachalinensis*	OBLW	puera	Kudzu-vine	*Pueraria lobata*	FAC-
gldi	Mudmats	*Glossostigma diandrum*	OBLW	pysp1	Apple/crabapple/pear	*Pyrus sp.*	FAC?
hola	Velvetgrass	*Holcus lanatus*	FAC	rhfr	Glossy Buckthorn	*Rhamnus frangula*	FAC-
huja	Japanese Hops	*Humulus japonicus*	FACU	romu	Multiflora rose	*Rosa multiflora*	FACU
loja	Japanese honeysuckle	*Lonicera japonica*	FAC-	tyan	Cattail (hybrid)	*Typha angustifolia*	OBLW
lomo	Morrow's honeysuckle	*Lonicera morrowii*	NI	tygl	Hybrid cattail	*Typha x glauca*	OBLW
lota	Tartarian honeysuckle	*Lonicera tatarica*					

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)
456456	NFG FM100 Project	10/08/17	0.41	W016, W016A, W016B	1.00

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
T. Malecki, M. Groomer	41.720256	-78.465447	WD081TMM, PEM and PFO wetlands

General Comments: PEM wetland located in valley bottom. Multiple man-made ponds and intermittent streams within wetland boundary. PEM wetland occurs within maintained pipeline ROW (0.40 acres in ECL) and is adjacent to forest. PEM wetland continues downslope of Project (0.12 acres delineated) beyond ECL. PFO wetland occurs partially within pipeline ROW (0.01 acres in ECL) and extends upslope of Project (0.97 acres delineated) beyond ECL. AA includes 0.52 acres of the PEM wetlands (W016A and W016B) and 0.48 acres of the PFO wetland.

1. Wetland Zone of Influence Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:																			
Scoring:	% ZOI Area:	0%			0%			80%			**0%**			**20%**			**0%**		**Total Score:**	
	Score:	0			0			12			**0**			**4**			**0**			**0.52**
	Total Sub-score:	0.00			0.00			9.60			0.00			0.80			0.00		**10.40**	

Comments: Area includes maintained pipeline ROW with access road/ATV trail. Streams and ponds occur within ZOI. Adjecent forest has maintained understory.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting.

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary			**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.		**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.			**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.		**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.		**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	CI = Total Score/20
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	
		Total Score:	17	**0.85**

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No Invasive Species identified in wetland AA.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

Area includes maintained pipeline ROW and maintenance road/ATV trail.

a. Invasive Sub-Score:	20	**Total Score**
b. Vegetation Sub-Score:	12	**32**

CI = Total Score/40 **0.80**

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Two stressors identified due to culvert, and ROW alteration caused by pipeline maintenance and ATV use.

Score:	**14**

CI = Total Score/20 **0.70**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One stressor identified due to ROW maintenance and ATV use.

Score:	**17**

CI = Total Score/20 **0.85**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No stressors identified.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No stressors identified.

a. Eutrophication Score	20	**Total Score:**
b. Contaminant Score	20	**40**

CI = Total Score/40 **1.00**

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.79**

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

Roadbed Worksheet

Project Name / Identifier			Date	Name(s) of Evaluator(s)
NFG FM100 Project			10/08/17	T. Malecki, M. Groomer
Resource Identifier	**AA #**	**Lat (dd)**	**Long (dd)**	**Notes:**
WD081TMM	W016, W016A, W016B	41.720256	-78.465447	Pipeline access road/ATV trail

Roadbeds: Record the number of occurrences by roadbed type and distance category. Multiply the number of occurrences by the weighting factors for each roadbed type and distance category then sum the total score for each distance category. The total scores for each distance category are then compared to the condition category descriptions.

Roadbed Type	Distance	Occurrences	Weighting Factor	Score	Distance	Occurrences	Weighting Factor	Score
≥ 4 Lane Paved	0-100 ft.		4	0	100-300 ft.		4	0
2 Lane Paved	0-100 ft.		2	0	100-300 ft.		2	0
1 Lane Paved	0-100 ft.		1	0	100-300 ft.		1	0
Gravel Road	0-100 ft.		1	0	100-300 ft.		1	0
Dirt Road	0-100 ft.	1	2	2	100-300 ft.	1	2	2
Railroad	0-100 ft.		2	0	100-300 ft.		2	0
Other Roadbeds	0-100 ft.		1, 2 or 4	0	100-300 ft.		1, 2 or 4	0
Total Scores:	0-100 ft.	2			100-300 ft.	2		

Road Comments: Dirt access road/ATV trail used for pipeline inspection and maintenance. Not an improved road, no gravel, no grading.

Pennsylvania Wetland Condition Level 2 Rapid Assessment	10/08/17		
(Document No. 310-2137-002)	Occurrence		
Pennsylvania Department of Environmental Protection	in AA		
STRESSOR WORKSHEET	**Y**	**#'s**	**N**
Vegetation Alteration			
Mowing	X		
Moderate livestock grazing (within one year)			X
Crops (annual row crops, within one year)			X
Selective tree harvesting/cutting (>50% removal, within 5 years)			X
Right-of-way clearing (mechanical or chemical)	X	1	
Clear cutting or Brush cutting (mechanized removal of shrubs and saplings)	X		
Removal of woody debris			X
Aquatic weed control (mechanical or herbicide)			X
Excessive herbivory (deer, muskrat, nutria, carp, insects, etc.)			X
Plantation (conversion from typical natural tree species, including orchards)			X
Other:			X
Total Number:	**3**		
Hydrologic Modification			
Ditching, tile draining, or other dewatering methods			X
Dike/weir/dam			X
Filling/grading			X
Dredging/excavation			X
Stormwater inputs (culvert or similar concentrated urban runoff)	X	4	
Microtopographic alterations (e.g., plowing, forestry bedding, skidder/ATV tracks)	X		
Dead or dying trees (trunks still standing) *			X
Stream alteration (channelization or incision)			X
Other:			X
Total Number:	**2**		
Sedimentation			
Sediment deposits/plumes			X
Eroding banks/slopes			X
Active construction (earth disturbance for development)			X
Active plowing (plowing for crop planting in past year)			X
Intensive livestock grazing (in one year, ground is >50% bare)			X
Active selective forestry harvesting (within one year)			X
Active forest harvesting (within two years, includes roads, borrow areas, pads, etc.)			X
Turbidity (moderate concentration of suspended solids in the water column, obvious sediment discharges)			X
Other:	X		
Total Number:	**1**		
Eutrophication			
Direct discharges from agricultural feedlots, manure pits, etc.			X
Direct discharges from septic or sewage treatment plants, fish hatcheries, etc.			X
Heavy or moderately heavy formation of algal mats			X
Other:			X
Total Number:	**0**		
Contaminant/Toxicity			
Severe vegetation stress (source unknown or suspected)			X
Obvious spills, discharges, plumes, odors, etc.			X
Acidic drainages (mined sites, quarries, road cuts)			X
Point discharges from adjacent industrial facilities, landfills, railroad yards, or comparable sites			X
Chemical defoliation (majority of herbaceous and woody plants affected, within one year)			X
Fish or wildlife kills or obvious disease or abnormalities observed			X
Excessive garbage/dumping			X
Other:			X
Total Number:	**0**		

Pennsylvania Wetland Condition Level 2 Rapid Assessment
(Document No. 310-2137-002)
Pennsylvania Department of Environmental Protection

Invasive Species Presence Worksheet

Are invasive species (from list) present at the site in any layer? YES NO

If listed species present, enter the percent areal coverage for each species below:

Species Code	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%	*Species Code*	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%

Total % relative cover of all invasives, collectively on site: 0 %

Comments:

Common Invasives/Aggressives List

Code	Common Name	*Scientific*	Status	Code	Common Name	*Scientific*	Status
aggi2	Redtop	*Agrostis gigantea*	FACW	luhe	Water primrose	*Ludwigia hexapetala*	OBLW
algl2	European Alder	*Alnus glutinosa*	FACW	lyvu	Garden loosestrife	*Lysimachia vulgaris*	OBLW
arhi3	Carpetgrass	*Arthraxon hispidus*	FAC-	lysa2	Purple loosestrife	*Lythrum salicaria*	FACW
beth	Japanese barberry	*Berberis thunbergii*	FACW	maqu	European waterclover	*Marsilea quadrifolia*	OBLW
bevu	European barberry	*Berberis vulgaris*	FACW	mivi	Japanese stiltgrass	*Microstegium vimineum*	FAC
butom	Flowering Rush	*Butomus umbellatus*	OBLW	nami2	Water cress	*Nasturtium officinale*	OBLW
calli6	Pond water-starwort	*Callitriche stagnalis*	OBLW	pelo	Low smartweed	*Persicaria longiseta*	FACW
egde	Brazilian waterweed	*Egeria densa*	OBLW	phar	Reed canary grass	*Phalaris arundinacea*	FACW
elan	Russian olive	*Elaeagnus angustifolia*	FACU	phau7	Common Reed	*Phragmites australis*	OBLW
elum	Autumn olive	*Elaeagnus umbellata*	FACU	potr	Rough bluegrass	*Poa trivialis*	FACW
ephi	Hairy willow-herb	*Epilobium hirsutum*	FACW	pocu6	Japanese knotweed	*Polygonum (Faloia) cuspidatum*	FAC-
eppa5	Willow-herb	*Epilobium parviflorum*	FACW	pgpf	Mile-a-minute	*Polygonum perfoliatum*	FAC-
fasa	Giant knotweed	*Fallopia sachalinensis*	OBLW	puera	Kudzu-vine	*Pueraria lobata*	FAC-
gldi	Mudmats	*Glossostigma diandrum*	OBLW	pysp1	Apple/crabapple/pear	*Pyrus sp.*	FAC?
hola	Velvetgrass	*Holcus lanatus*	FAC	rhfr	Glossy Buckthorn	*Rhamnus frangula*	FAC-
huja	Japanese Hops	*Humulus japonicus*	FACU	romu	Multiflora rose	*Rosa multiflora*	FACU
loja	Japanese honeysuckle	*Lonicera japonica*	FAC-	tyan	Cattail (hybrid)	*Typha angustifolia*	OBLW
lomo	Morrow's honeysuckle	*Lonicera morrowii*	NI	tygl	Hybrid cattail	*Typha x glauca*	OBLW
lota	Tartarian honeysuckle	*Lonicera tatarica*					

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)
456456	NFG FM100 Project	10/10/17	0.72	W020, W020A	1.00

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
T. Malecki, M. Groomer	41.729827	-78.447915	WD092TMM, PFO and PEM wetland

General Comments: Large PEM and PFO wetland complex with streams throughout. PFO wetland located in valley bottom in existing pipeline ROW (0.23 acres in ECL) and forested hillside. PFO wetland continues upslope of Project (0.45 acres delineated) beyond ECL. PEM wetland occurs within maintained pipeline ROW (0.49 acres in ECL) and continues downslope of Project (0.70 acres delineated) beyond ECL. Impacts occur within both the PEM and PFO wetland. AA includes 0.72 acres of the proposed impacted area to PEM and PFO wetland, and 0.28 acres of the wetland complex that will not be impacted.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	0%	0%	90%	**0%**	**10%**	**0%**	**Total Score:**
	Score:	0	0	12	**0**	**4**	**0**	
	Total Sub-score:	0.00	0.00	10.80	0.00	0.40	0.00	**11.20**

0.56

Comments: Area includes maintained pipeline ROW with access road/ATV trail. Streams and other wetlands occur within ZOI. Adjecent forest has maintained understory.

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary **Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting.

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary **Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	17	* (0.67)	11
b. Roadbed 100-300:	17	* (0.33)	6
		Total Score:	17

0.85

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No Invasive Species identified in wetland AA.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

Area includes maintained pipeline ROW and maintenance road/ATV trail.

a. Invasive Sub-Score:	20	**Total Score**
b. Vegetation Sub-Score:	12	**32**

CI = Total Score/40 **0.80**

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One stressor identified due to ROW alteration caused by pipeline maintenance and ATV use.

Score:	**17**

CI = Total Score/20 **0.85**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One stressor identified due to ROW maintenance and ATV use.

Score:	**17**

CI = Total Score/20 **0.85**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No stressors identified.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No stressors identified.

a. Eutrophication Score	20	**Total Score:**
b. Contaminant Score	20	**40**

CI = Total Score/40 **1.00**

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.82**

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

Roadbed Worksheet

Project Name / Identifier			Date	Name(s) of Evaluator(s)
NFG FM100 Project			10/10/17	T. Malecki, M. Groomer
Resource Identifier	**AA #**	**Lat (dd)**	**Long (dd)**	**Notes:**
WD092TMM	W020, W020A	41.729827	-78.447915	Pipeline access road/ATV trail

Roadbeds: Record the number of occurrences by roadbed type and distance category. Multiply the number of occurrences by the weighting factors for each roadbed type and distance category then sum the total score for each distance category. The total scores for each distance category are then compared to the condition category descriptions.

Roadbed Type	Distance	Occurrences	Weighting Factor	Score	Distance	Occurrences	Weighting Factor	Score
≥ 4 Lane Paved	0-100 ft.		4	0	100-300 ft.		4	0
2 Lane Paved	0-100 ft.		2	0	100-300 ft.		2	0
1 Lane Paved	0-100 ft.		1	0	100-300 ft.		1	0
Gravel Road	0-100 ft.		1	0	100-300 ft.		1	0
Dirt Road	0-100 ft.	1	2	2	100-300 ft.	1	2	2
Railroad	0-100 ft.		2	0	100-300 ft.		2	0
Other Roadbeds	0-100 ft.		1, 2 or 4	0	100-300 ft.		1, 2 or 4	0
Total Scores:	0-100 ft.	2			100-300 ft.	2		

Road Comments: Dirt access road/ATV trail used for pipeline inspection and maintenance. Not an improved road, no gravel, no grading.

Pennsylvania Wetland Condition Level 2 Rapid Assessment	10/10/17		
(Document No. 310-2137-002)	Occurrence		
Pennsylvania Department of Environmental Protection	in AA		
STRESSOR WORKSHEET	**Y**	**#'s**	**N**
Vegetation Alteration			
Mowing	X		
Moderate livestock grazing (within one year)			X
Crops (annual row crops, within one year)			X
Selective tree harvesting/cutting (>50% removal, within 5 years)			X
Right-of-way clearing (mechanical or chemical)	X	1	
Clear cutting or Brush cutting (mechanized removal of shrubs and saplings)	X		
Removal of woody debris			X
Aquatic weed control (mechanical or herbicide)			X
Excessive herbivory (deer, muskrat, nutria, carp, insects, etc.)			X
Plantation (conversion from typical natural tree species, including orchards)			X
Other:			X
Total Number:	**3**		
Hydrologic Modification			
Ditching, tile draining, or other dewatering methods			X
Dike/weir/dam			X
Filling/grading			X
Dredging/excavation			X
Stormwater inputs (culvert or similar concentrated urban runoff)			X
Microtopographic alterations (e.g., plowing, forestry bedding, skidder/ATV tracks)	X		
Dead or dying trees (trunks still standing) *			X
Stream alteration (channelization or incision)			X
Other:			X
Total Number:	**1**		
Sedimentation			
Sediment deposits/plumes			X
Eroding banks/slopes			X
Active construction (earth disturbance for development)			X
Active plowing (plowing for crop planting in past year)			X
Intensive livestock grazing (in one year, ground is >50% bare)			X
Active selective forestry harvesting (within one year)			X
Active forest harvesting (within two years, includes roads, borrow areas, pads, etc.)			X
Turbidity (moderate concentration of suspended solids in the water column, obvious sediment discharges)			X
Other:	X		
Total Number:	**1**		
Eutrophication			
Direct discharges from agricultural feedlots, manure pits, etc.			X
Direct discharges from septic or sewage treatment plants, fish hatcheries, etc.			X
Heavy or moderately heavy formation of algal mats			X
Other:			X
Total Number:	**0**		
Contaminant/Toxicity			
Severe vegetation stress (source unknown or suspected)			X
Obvious spills, discharges, plumes, odors, etc.			X
Acidic drainages (mined sites, quarries, road cuts)			X
Point discharges from adjacent industrial facilities, landfills, railroad yards, or comparable sites			X
Chemical defoliation (majority of herbaceous and woody plants affected, within one year)			X
Fish or wildlife kills or obvious disease or abnormalities observed			X
Excessive garbage/dumping			X
Other:			X
Total Number:	**0**		

Pennsylvania Wetland Condition Level 2 Rapid Assessment
(Document No. 310-2137-002)
Pennsylvania Department of Environmental Protection

Invasive Species Presence Worksheet

Are invasive species (from list) present at the site in any layer? YES NO

If listed species present, enter the percent areal coverage for each species below:

Species Code	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%	*Species Code*	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%

Total % relative cover of all invasives, collectively on site: 0 %

Comments:

Common Invasives/Aggressives List

Code	Common Name	*Scientific*	Status	Code	Common Name	*Scientific*	Status
aggi2	Redtop	*Agrostis gigantea*	FACW	luhe	Water primrose	*Ludwigia hexapetala*	OBLW
algl2	European Alder	*Alnus glutinosa*	FACW	lyvu	Garden loosestrife	*Lysimachia vulgaris*	OBLW
arhi3	Carpetgrass	*Arthraxon hispidus*	FAC-	lysa2	Purple loosestrife	*Lythrum salicaria*	FACW
beth	Japanese barberry	*Berberis thunbergii*	FACW	maqu	European waterclover	*Marsilea quadrifolia*	OBLW
bevu	European barberry	*Berberis vulgaris*	FACW	mivi	Japanese stiltgrass	*Microstegium vimineum*	FAC
butom	Flowering Rush	*Butomus umbellatus*	OBLW	nami2	Water cress	*Nasturtium officinale*	OBLW
calli6	Pond water-starwort	*Callitriche stagnalis*	OBLW	pelo	Low smartweed	*Persicaria longiseta*	FACW
egde	Brazilian waterweed	*Egeria densa*	OBLW	phar	Reed canary grass	*Phalaris arundinacea*	FACW
elan	Russian olive	*Elaeagnus angustifolia*	FACU	phau7	Common Reed	*Phragmites australis*	OBLW
elum	Autumn olive	*Elaeagnus umbellata*	FACU	potr	Rough bluegrass	*Poa trivialis*	FACW
ephi	Hairy willow-herb	*Epilobium hirsutum*	FACW	pocu6	Japanese knotweed	*Polygonum (Faloia) cuspidatum*	FAC-
eppa5	Willow-herb	*Epilobium parviflorum*	FACW	pgpf	Mile-a-minute	*Polygonum perfoliatum*	FAC-
fasa	Giant knotweed	*Fallopia sachalinensis*	OBLW	puera	Kudzu-vine	*Pueraria lobata*	FAC-
gldi	Mudmats	*Glossostigma diandrum*	OBLW	pysp1	Apple/crabapple/pear	*Pyrus sp.*	FAC?
hola	Velvetgrass	*Holcus lanatus*	FAC	rhfr	Glossy Buckthorn	*Rhamnus frangula*	FAC-
huja	Japanese Hops	*Humulus japonicus*	FACU	romu	Multiflora rose	*Rosa multiflora*	FACU
loja	Japanese honeysuckle	*Lonicera japonica*	FAC-	tyan	Cattail (hybrid)	*Typha angustifolia*	OBLW
lomo	Morrow's honeysuckle	*Lonicera morrowii*	NI	tygl	Hybrid cattail	*Typha x glauca*	OBLW
lota	Tartarian honeysuckle	*Lonicera tatarica*					

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)
456456	NFG FM100 Project	10/10/17	0.55	W026, W026A	1.00

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
J. Miner, C. Maier, M. Groomer	41.733336	-78.443875	WD079JLM and WD091JLM, PEM and PSS wetlands

General Comments: Site mowed routinely across ROW. Willow community present. Distinct elevation/slope break at edge of floodplain. Large wetland complex, W079 is PSS/PEM and W091 is PSS. PSS/PEM wetlands in maintained pipeline ROW (0.55 acres in ECL). Wetland continues beyond existing ROW, upslope and downslope of Project (3.10 acres delineated) beyond ECL. Impacts occur only to the PSS/PEM wetland area in the disturbed ROW. AA includes 0.55 acres of PSS/PEM within and 0.45 acres beyond the Project area.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	0%	0%	60%	10%	30%	0%	Total Score:
	Score:	0	0	13	7	4	0	0.49
	Total Sub-score:	0.00	0.00	7.80	0.70	1.20	0.00	9.70

Comments: Area includes maintained pipeline ROW with access road/ATV trail, other wetlands, and streams. Adjacent forest has maintained understory.

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary **Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting.

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary **Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	17	* (0.33)	6	0.85
		Total Score:	17	

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting.

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3. Vegetation Condition Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No Invasive Species identified in wetland AA.

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.					**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments:

Maintained pipeline ROW and maintenance road/ATV trail.

a. Invasive Sub-Score:	20	**Total Score**
b. Vegetation Sub-Score:	12	**32**

0.80

4. Hydrologic Modification Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.					**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0.70**

Comments: Within ROW alteration caused by pipeline maintenance and ATV use. One culvert in AA.

Score:	**14**

5. Sediment Stressor Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.					**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0.85**

Comments: One stressor identified due to ROW maintenance and ATV use.

Score:	**17**

6. Water Quality Stressor Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No stressors identified.

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.					**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No stressors identified.

a. Eutrophication Score	20	**Total Score:**
b. Contaminant Score	20	**40**

1.00

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.78**

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

Roadbed Worksheet

Project Name / Identifier			Date	Name(s) of Evaluator(s)
NFG FM100 Project			10/10/17	J. Miner, C. Maier, M. Groomer
Resource Identifier	**AA #**	**Lat (dd)**	**Long (dd)**	**Notes:**
WD079JLM, WD091JLM	W026, W026A	41.733336	-78.443875	Pipeline access road/ATV trail

Roadbeds: Record the number of occurrences by roadbed type and distance category. Multiply the number of occurrences by the weighting factors for each roadbed type and distance category then sum the total score for each distance category. The total scores for each distance category are then compared to the condition category descriptions.

Roadbed Type	Distance	Occurrences	Weighting Factor	Score	Distance	Occurrences	Weighting Factor	Score
≥ 4 Lane Paved	0-100 ft.		4	0	100-300 ft.		4	0
2 Lane Paved	0-100 ft.		2	0	100-300 ft.		2	0
1 Lane Paved	0-100 ft.		1	0	100-300 ft.		1	0
Gravel Road	0-100 ft.		1	0	100-300 ft.		1	0
Dirt Road	0-100 ft.	1	2	2	100-300 ft.	1	2	2
Railroad	0-100 ft.		2	0	100-300 ft.		2	0
Other Roadbeds	0-100 ft.		1, 2 or 4	0	100-300 ft.		1, 2 or 4	0
Total Scores:	0-100 ft.	2			100-300 ft.	2		

Road Comments: Unimproved access road/ATV trail used for pipeline inspection and maintenance. Not an improved road, no gravel, no grading.

Pennsylvania Wetland Condition Level 2 Rapid Assessment	10/10/17		
(Document No. 310-2137-002)	Occurrence		
Pennsylvania Department of Environmental Protection	in AA		
STRESSOR WORKSHEET	**Y**	**#'s**	**N**
Vegetation Alteration			
Mowing	X		
Moderate livestock grazing (within one year)			X
Crops (annual row crops, within one year)			X
Selective tree harvesting/cutting (>50% removal, within 5 years)			X
Right-of-way clearing (mechanical or chemical)	X	1	
Clear cutting or Brush cutting (mechanized removal of shrubs and saplings)	X		
Removal of woody debris			X
Aquatic weed control (mechanical or herbicide)			X
Excessive herbivory (deer, muskrat, nutria, carp, insects, etc.)			X
Plantation (conversion from typical natural tree species, including orchards)			X
Other:			X
Total Number:	**3**		
Hydrologic Modification			
Ditching, tile draining, or other dewatering methods			X
Dike/weir/dam			X
Filling/grading			X
Dredging/excavation			X
Stormwater inputs (culvert or similar concentrated urban runoff)	X	1	
Microtopographic alterations (e.g., plowing, forestry bedding, skidder/ATV tracks)	X		
Dead or dying trees (trunks still standing) *			X
Stream alteration (channelization or incision)			X
Other:			X
Total Number:	**2**		
Sedimentation			
Sediment deposits/plumes			X
Eroding banks/slopes			X
Active construction (earth disturbance for development)			X
Active plowing (plowing for crop planting in past year)			X
Intensive livestock grazing (in one year, ground is >50% bare)			X
Active selective forestry harvesting (within one year)			X
Active forest harvesting (within two years, includes roads, borrow areas, pads, etc.)			X
Turbidity (moderate concentration of suspended solids in the water column, obvious sediment discharges)			X
Other:	X		
Total Number:	**1**		
Eutrophication			
Direct discharges from agricultural feedlots, manure pits, etc.			X
Direct discharges from septic or sewage treatment plants, fish hatcheries, etc.			X
Heavy or moderately heavy formation of algal mats			X
Other:			X
Total Number:	**0**		
Contaminant/Toxicity			
Severe vegetation stress (source unknown or suspected)			X
Obvious spills, discharges, plumes, odors, etc.			X
Acidic drainages (mined sites, quarries, road cuts)			X
Point discharges from adjacent industrial facilities, landfills, railroad yards, or comparable sites			X
Chemical defoliation (majority of herbaceous and woody plants affected, within one year)			X
Fish or wildlife kills or obvious disease or abnormalities observed			X
Excessive garbage/dumping			X
Other:			X
Total Number:	**0**		

Pennsylvania Wetland Condition Level 2 Rapid Assessment
(Document No. 310-2137-002)
Pennsylvania Department of Environmental Protection

Invasive Species Presence Worksheet

Are invasive species (from list) present at the site in any layer? YES NO

If listed species present, enter the percent areal coverage for each species below:

Species Code	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%	*Species Code*	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%

Total % relative cover of all invasives, collectively on site: 0 %

Comments:

Common Invasives/Aggressives List

Code	Common Name	*Scientific*	Status	Code	Common Name	*Scientific*	Status
aggi2	Redtop	*Agrostis gigantea*	FACW	luhe	Water primrose	*Ludwigia hexapetala*	OBLW
algl2	European Alder	*Alnus glutinosa*	FACW	lyvu	Garden loosestrife	*Lysimachia vulgaris*	OBLW
arhi3	Carpetgrass	*Arthraxon hispidus*	FAC-	lysa2	Purple loosestrife	*Lythrum salicaria*	FACW
beth	Japanese barberry	*Berberis thunbergii*	FACW	maqu	European waterclover	*Marsilea quadrifolia*	OBLW
bevu	European barberry	*Berberis vulgaris*	FACW	mivi	Japanese stiltgrass	*Microstegium vimineum*	FAC
butom	Flowering Rush	*Butomus umbellatus*	OBLW	nami2	Water cress	*Nasturtium officinale*	OBLW
calli6	Pond water-starwort	*Callitriche stagnalis*	OBLW	pelo	Low smartweed	*Persicaria longiseta*	FACW
egde	Brazilian waterweed	*Egeria densa*	OBLW	phar	Reed canary grass	*Phalaris arundinacea*	FACW
elan	Russian olive	*Elaeagnus angustifolia*	FACU	phau7	Common Reed	*Phragmites australis*	OBLW
elum	Autumn olive	*Elaeagnus umbellata*	FACU	potr	Rough bluegrass	*Poa trivialis*	FACW
ephi	Hairy willow-herb	*Epilobium hirsutum*	FACW	pocu6	Japanese knotweed	*Polygonum (Faloia) cuspidatum*	FAC-
eppa5	Willow-herb	*Epilobium parviflorum*	FACW	pgpf	Mile-a-minute	*Polygonum perfoliatum*	FAC-
fasa	Giant knotweed	*Fallopia sachalinensis*	OBLW	puera	Kudzu-vine	*Pueraria lobata*	FAC-
gldi	Mudmats	*Glossostigma diandrum*	OBLW	pysp1	Apple/crabapple/pear	*Pyrus sp.*	FAC?
hola	Velvetgrass	*Holcus lanatus*	FAC	rhfr	Glossy Buckthorn	*Rhamnus frangula*	FAC-
huja	Japanese Hops	*Humulus japonicus*	FACU	romu	Multiflora rose	*Rosa multiflora*	FACU
loja	Japanese honeysuckle	*Lonicera japonica*	FAC-	tyan	Cattail (hybrid)	*Typha angustifolia*	OBLW
lomo	Morrow's honeysuckle	*Lonicera morrowii*	NI	tygl	Hybrid cattail	*Typha x glauca*	OBLW
lota	Tartarian honeysuckle	*Lonicera tatarica*					

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)
456456	NFG FM100 Project	10/07/17	0.33	W031, W031A	1.00

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
T. Malecki, M. Groomer	41.74408	-78.426119	WD078TMM, PFO and PEM wetland

General Comments: Large PEM and PFO wetland complex. Two ephemeral streams occur within the PEM wetland. PFO wetland located on forested hilltop and is fed by multiple seeps that drain into stream at headwaters. PFO wetland occurs in existing pipeline ROW (0.15 acres in ECL) and continues upslope of Project (1.98 acres delineated) beyond ECL. PEM wetland occurs within maintained pipeline ROW (0.18 acres in ECL) and continues downslope of Project (0.10 acres delineated) beyond ECL. Impacts occur within both the PEM and PFO wetland. AA includes 0.33 acres of the proposed impacted area to PEM and PFO wetland, and 0.67 acres of the wetland complex that will not be impacted.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	0%	0%	80%	**0%**	**20%**	**0%**	**Total Score:**
	Score:	0	0	12	**0**	**4**	**0**	**0.52**
	Total Sub-score:	0.00	0.00	9.60	0.00	0.80	0.00	**10.40**

Comments: Area includes maintained pipeline ROW with access road/ATV trail. Streams and other wetlands occur within ZOI. Adjecent forest has maintained understory.

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary **Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting.

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary **Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	16	* (0.33)	5	**0.83**
		Total Score:	17	

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting. Temporary dirt access road connecting to pipeline ROW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No Invasive Species identified in wetland AA.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments:

Area includes maintained pipeline ROW and maintenance road/ATV trail.

a. Invasive Sub-Score:	20	**Total Score**
b. Vegetation Sub-Score:	12	**32**

0.80

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Two stressors identified due to culvets, and ROW alteration caused by pipeline maintenance and ATV use.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: One stressor identified due to ROW maintenance and ATV use.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No stressors identified.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No stressors identified.

a. Eutrophication Score	20	**Total Score:**
b. Contaminant Score	20	**40**

1.00

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:** **0.78**

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

Roadbed Worksheet

Project Name / Identifier			Date	Name(s) of Evaluator(s)
NFG FM100 Project			10/07/17	T. Malecki, M. Groomer
Resource Identifier	**AA #**	**Lat (dd)**	**Long (dd)**	**Notes:**
WD078TMM	W031, W031A	41.74408	-78.426119	Pipeline access road/ATV trail

Roadbeds: Record the number of occurrences by roadbed type and distance category. Multiply the number of occurrences by the weighting factors for each roadbed type and distance category then sum the total score for each distance category. The total scores for each distance category are then compared to the condition category descriptions.

Roadbed Type	Distance	Occurrences	Weighting Factor	Score	Distance	Occurrences	Weighting Factor	Score
≥ 4 Lane Paved	0-100 ft.		4	0	100-300 ft.		4	0
2 Lane Paved	0-100 ft.		2	0	100-300 ft.		2	0
1 Lane Paved	0-100 ft.		1	0	100-300 ft.		1	0
Gravel Road	0-100 ft.		1	0	100-300 ft.		1	0
Dirt Road	0-100 ft.	1	2	2	100-300 ft.	2	2	4
Railroad	0-100 ft.		2	0	100-300 ft.		2	0
Other Roadbeds	0-100 ft.		1, 2 or 4	0	100-300 ft.		1, 2 or 4	0
Total Scores:	0-100 ft.	2			100-300 ft.	4		

Road Comments: Dirt access road/ATV trail used for pipeline inspection and maintenance. Not an improved road, no gravel, no grading. Temporary dirt access road connecting to pipeline ROW.

Pennsylvania Wetland Condition Level 2 Rapid Assessment	10/07/17		
(Document No. 310-2137-002)	Occurrence		
Pennsylvania Department of Environmental Protection	in AA		
STRESSOR WORKSHEET	**Y**	**#'s**	**N**
Vegetation Alteration			
Mowing	X		
Moderate livestock grazing (within one year)			X
Crops (annual row crops, within one year)			X
Selective tree harvesting/cutting (>50% removal, within 5 years)			X
Right-of-way clearing (mechanical or chemical)	X	1	
Clear cutting or Brush cutting (mechanized removal of shrubs and saplings)	X		
Removal of woody debris			X
Aquatic weed control (mechanical or herbicide)			X
Excessive herbivory (deer, muskrat, nutria, carp, insects, etc.)			X
Plantation (conversion from typical natural tree species, including orchards)			X
Other:			X
Total Number:	**3**		
Hydrologic Modification			
Ditching, tile draining, or other dewatering methods			X
Dike/weir/dam			X
Filling/grading			X
Dredging/excavation			X
Stormwater inputs (culvert or similar concentrated urban runoff)	X	2	
Microtopographic alterations (e.g., plowing, forestry bedding, skidder/ATV tracks)	X		
Dead or dying trees (trunks still standing) *			X
Stream alteration (channelization or incision)			X
Other:			X
Total Number:	**2**		
Sedimentation			
Sediment deposits/plumes			X
Eroding banks/slopes			X
Active construction (earth disturbance for development)			X
Active plowing (plowing for crop planting in past year)			X
Intensive livestock grazing (in one year, ground is >50% bare)			X
Active selective forestry harvesting (within one year)			X
Active forest harvesting (within two years, includes roads, borrow areas, pads, etc.)			X
Turbidity (moderate concentration of suspended solids in the water column, obvious sediment discharges)			X
Other:	X		
Total Number:	**1**		
Eutrophication			
Direct discharges from agricultural feedlots, manure pits, etc.			X
Direct discharges from septic or sewage treatment plants, fish hatcheries, etc.			X
Heavy or moderately heavy formation of algal mats			X
Other:			X
Total Number:	**0**		
Contaminant/Toxicity			
Severe vegetation stress (source unknown or suspected)			X
Obvious spills, discharges, plumes, odors, etc.			X
Acidic drainages (mined sites, quarries, road cuts)			X
Point discharges from adjacent industrial facilities, landfills, railroad yards, or comparable sites			X
Chemical defoliation (majority of herbaceous and woody plants affected, within one year)			X
Fish or wildlife kills or obvious disease or abnormalities observed			X
Excessive garbage/dumping			X
Other:			X
Total Number:	**0**		

Pennsylvania Wetland Condition Level 2 Rapid Assessment
(Document No. 310-2137-002)
Pennsylvania Department of Environmental Protection

Invasive Species Presence Worksheet

Are invasive species (from list) present at the site in any layer? YES NO

If listed species present, enter the percent areal coverage for each species below:

Species Code	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%	*Species Code*	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%

Total % relative cover of all invasives, collectively on site: 0 %

Comments:

Common Invasives/Aggressives List

Code	Common Name	*Scientific*	Status	Code	Common Name	*Scientific*	Status
aggi2	Redtop	*Agrostis gigantea*	FACW	luhe	Water primrose	*Ludwigia hexapetala*	OBLW
algl2	European Alder	*Alnus glutinosa*	FACW	lyvu	Garden loosestrife	*Lysimachia vulgaris*	OBLW
arhi3	Carpetgrass	*Arthraxon hispidus*	FAC-	lysa2	Purple loosestrife	*Lythrum salicaria*	FACW
beth	Japanese barberry	*Berberis thunbergii*	FACW	maqu	European waterclover	*Marsilea quadrifolia*	OBLW
bevu	European barberry	*Berberis vulgaris*	FACW	mivi	Japanese stiltgrass	*Microstegium vimineum*	FAC
butom	Flowering Rush	*Butomus umbellatus*	OBLW	nami2	Water cress	*Nasturtium officinale*	OBLW
calli6	Pond water-starwort	*Callitriche stagnalis*	OBLW	pelo	Low smartweed	*Persicaria longiseta*	FACW
egde	Brazilian waterweed	*Egeria densa*	OBLW	phar	Reed canary grass	*Phalaris arundinacea*	FACW
elan	Russian olive	*Elaeagnus angustifolia*	FACU	phau7	Common Reed	*Phragmites australis*	OBLW
elum	Autumn olive	*Elaeagnus umbellata*	FACU	potr	Rough bluegrass	*Poa trivialis*	FACW
ephi	Hairy willow-herb	*Epilobium hirsutum*	FACW	pocu6	Japanese knotweed	*Polygonum (Faloia) cuspidatum*	FAC-
eppa5	Willow-herb	*Epilobium parviflorum*	FACW	pgpf	Mile-a-minute	*Polygonum perfoliatum*	FAC-
fasa	Giant knotweed	*Fallopia sachalinensis*	OBLW	puera	Kudzu-vine	*Pueraria lobata*	FAC-
gldi	Mudmats	*Glossostigma diandrum*	OBLW	pysp1	Apple/crabapple/pear	*Pyrus sp.*	FAC?
hola	Velvetgrass	*Holcus lanatus*	FAC	rhfr	Glossy Buckthorn	*Rhamnus frangula*	FAC-
huja	Japanese Hops	*Humulus japonicus*	FACU	romu	Multiflora rose	*Rosa multiflora*	FACU
loja	Japanese honeysuckle	*Lonicera japonica*	FAC-	tyan	Cattail (hybrid)	*Typha angustifolia*	OBLW
lomo	Morrow's honeysuckle	*Lonicera morrowii*	NI	tygl	Hybrid cattail	*Typha x glauca*	OBLW
lota	Tartarian honeysuckle	*Lonicera tatarica*					

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)
456456	NFG FM100 Project	10/06/17	0.04	W034	0.35

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
T. Malecki, M. Groomer	41.752795	-78.396898	WD071TMM, PSS wetland

General Comments: PSS wetland located in relic slough within floodplain of stream. Wetland occurs in maintained pipeline ROW (0.04 acres in ECL) and continues downslope of Project (0.31 acres delineated) beyond ECL. AA includes entire 0.35 acres of the PEM wetland.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:								
Scoring:	% ZOI Area:	0%	0%	30%	**20%**	**30%**	**20%**	**Total Score:**	
	Score:	0	0	12	**7**	**4**	**2**		**0.33**
	Total Sub-score:	0.00	0.00	3.60	1.40	1.20	0.40	**6.60**	

Comments: Area includes maintained pipeline ROW with access road/ATV trail. Streams, other wetlands, cleared areas and agricultural land occur within ZOI. Adjecent forest has maintained understory.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary		**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.			**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.		**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.			**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.		**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.			**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.		**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary		**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.			**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.		**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.			**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.		**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.			**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.		**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	14	* (0.33)	5	**0.80**
		Total Score:	**16**	

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting. Temporary dirt access road connecting paved road to pipeline ROW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No Invasive Species identified in wetland AA.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments:

Area includes maintained pipeline ROW and maintenance road/ATV trail.

Cleared area and agricultural land occur in and around wetland.

a. Invasive Sub-Score:	20	**Total Score**
b. Vegetation Sub-Score:	9	**29**

0.73

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: One stressor identified due to ROW alteration caused by pipeline maintenance and ATV use.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Two stressors identified due to agriculture, and ROW alteration caused by pipeline maintenance and ATV use.

Score:	**14**

0.70

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No stressors identified.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No stressors identified.

a. Eutrophication Score	20	**Total Score:**
b. Contaminant Score	20	**40**

1.00

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.73**

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

Roadbed Worksheet

Project Name / Identifier			Date	Name(s) of Evaluator(s)
NFG FM100 Project			10/06/17	T. Malecki, M. Groomer
Resource Identifier	**AA #**	**Lat (dd)**	**Long (dd)**	**Notes:**
WD071TMM	W034	41.752795	-78.396898	Pipeline access road/ATV trail

Roadbeds: Record the number of occurrences by roadbed type and distance category. Multiply the number of occurrences by the weighting factors for each roadbed type and distance category then sum the total score for each distance category. The total scores for each distance category are then compared to the condition category descriptions.

Roadbed Type	Distance	Occurrences	Weighting Factor	Score	Distance	Occurrences	Weighting Factor	Score
≥ 4 Lane Paved	0-100 ft.		4	0	100-300 ft.		4	0
2 Lane Paved	0-100 ft.		2	0	100-300 ft.		2	0
1 Lane Paved	0-100 ft.		1	0	100-300 ft.	1	1	1
Gravel Road	0-100 ft.		1	0	100-300 ft.		1	0
Dirt Road	0-100 ft.	1	2	2	100-300 ft.	1	2	2
Railroad	0-100 ft.		2	0	100-300 ft.		2	0
Other Roadbeds	0-100 ft.		1, 2 or 4	0	100-300 ft.		1, 2 or 4	0
Total Scores:	0-100 ft.	2			100-300 ft.	3		

Road Comments: Dirt access road/ATV trail used for pipeline inspection and maintenance. Not an improved road, no gravel, no grading. Temporary dirt access road connecting paved road to pipeline ROW.

Pennsylvania Wetland Condition Level 2 Rapid Assessment	10/06/17		
(Document No. 310-2137-002)	Occurrence		
Pennsylvania Department of Environmental Protection	in AA		
STRESSOR WORKSHEET	**Y**	**#'s**	**N**
Vegetation Alteration			
Mowing	X		
Moderate livestock grazing (within one year)			X
Crops (annual row crops, within one year)	X		
Selective tree harvesting/cutting (>50% removal, within 5 years)			X
Right-of-way clearing (mechanical or chemical)	X	1	
Clear cutting or Brush cutting (mechanized removal of shrubs and saplings)	X		
Removal of woody debris			X
Aquatic weed control (mechanical or herbicide)			X
Excessive herbivory (deer, muskrat, nutria, carp, insects, etc.)			X
Plantation (conversion from typical natural tree species, including orchards)			X
Other:			X
Total Number:	**4**		
Hydrologic Modification			
Ditching, tile draining, or other dewatering methods			X
Dike/weir/dam			X
Filling/grading			X
Dredging/excavation			X
Stormwater inputs (culvert or similar concentrated urban runoff)			X
Microtopographic alterations (e.g., plowing, forestry bedding, skidder/ATV tracks)	X		
Dead or dying trees (trunks still standing) *			X
Stream alteration (channelization or incision)			X
Other:			X
Total Number:	**1**		
Sedimentation			
Sediment deposits/plumes			X
Eroding banks/slopes			X
Active construction (earth disturbance for development)			X
Active plowing (plowing for crop planting in past year)	X		
Intensive livestock grazing (in one year, ground is >50% bare)			X
Active selective forestry harvesting (within one year)			X
Active forest harvesting (within two years, includes roads, borrow areas, pads, etc.)			X
Turbidity (moderate concentration of suspended solids in the water column, obvious sediment discharges)			X
Other:	X		
Total Number:	**2**		
Eutrophication			
Direct discharges from agricultural feedlots, manure pits, etc.			X
Direct discharges from septic or sewage treatment plants, fish hatcheries, etc.			X
Heavy or moderately heavy formation of algal mats			X
Other:			X
Total Number:	**0**		
Contaminant/Toxicity			
Severe vegetation stress (source unknown or suspected)			X
Obvious spills, discharges, plumes, odors, etc.			X
Acidic drainages (mined sites, quarries, road cuts)			X
Point discharges from adjacent industrial facilities, landfills, railroad yards, or comparable sites			X
Chemical defoliation (majority of herbaceous and woody plants affected, within one year)			X
Fish or wildlife kills or obvious disease or abnormalities observed			X
Excessive garbage/dumping			X
Other:			X
Total Number:	**0**		

Pennsylvania Wetland Condition Level 2 Rapid Assessment
(Document No. 310-2137-002)
Pennsylvania Department of Environmental Protection

Invasive Species Presence Worksheet

Are invasive species (from list) present at the site in any layer? YES NO

If listed species present, enter the percent areal coverage for each species below:

Species Code		<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%	*Species Code*	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%

Total % relative cover of all invasives, collectively on site: 0 %

Comments:

Common Invasives/Aggressives List

Code	Common Name	*Scientific*	Status	Code	Common Name	*Scientific*	Status
aggi2	Redtop	*Agrostis gigantea*	FACW	luhe	Water primrose	*Ludwigia hexapetala*	OBLW
algl2	European Alder	*Alnus glutinosa*	FACW	lyvu	Garden loosestrife	*Lysimachia vulgaris*	OBLW
arhi3	Carpetgrass	*Arthraxon hispidus*	FAC-	lysa2	Purple loosestrife	*Lythrum salicaria*	FACW
beth	Japanese barberry	*Berberis thunbergii*	FACW	maqu	European waterclover	*Marsilea quadrifolia*	OBLW
bevu	European barberry	*Berberis vulgaris*	FACW	mivi	Japanese stiltgrass	*Microstegium vimineum*	FAC
butom	Flowering Rush	*Butomus umbellatus*	OBLW	nami2	Water cress	*Nasturtium officinale*	OBLW
calli6	Pond water-starwort	*Callitriche stagnalis*	OBLW	pelo	Low smartweed	*Persicaria longiseta*	FACW
egde	Brazilian waterweed	*Egeria densa*	OBLW	phar	Reed canary grass	*Phalaris arundinacea*	FACW
elan	Russian olive	*Elaeagnus angustifolia*	FACU	phau7	Common Reed	*Phragmites australis*	OBLW
elum	Autumn olive	*Elaeagnus umbellata*	FACU	potr	Rough bluegrass	*Poa trivialis*	FACW
ephi	Hairy willow-herb	*Epilobium hirsutum*	FACW	pocu6	Japanese knotweed	*Polygonum (Faloia) cuspidatum*	FAC-
eppa5	Willow-herb	*Epilobium parviflorum*	FACW	pgpf	Mile-a-minute	*Polygonum perfoliatum*	FAC-
fasa	Giant knotweed	*Fallopia sachalinensis*	OBLW	puera	Kudzu-vine	*Pueraria lobata*	FAC-
gldi	Mudmats	*Glossostigma diandrum*	OBLW	pysp1	Apple/crabapple/pear	*Pyrus sp.*	FAC?
hola	Velvetgrass	*Holcus lanatus*	FAC	rhfr	Glossy Buckthorn	*Rhamnus frangula*	FAC-
huja	Japanese Hops	*Humulus japonicus*	FACU	romu	Multiflora rose	*Rosa multiflora*	FACU
loja	Japanese honeysuckle	*Lonicera japonica*	FAC-	tyan	Cattail (hybrid)	*Typha angustifolia*	OBLW
lomo	Morrow's honeysuckle	*Lonicera morrowii*	NI	tygl	Hybrid cattail	*Typha x glauca*	OBLW
lota	Tartarian honeysuckle	*Lonicera tatarica*					

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)
456456	NFG FM100 Project	10/06/17	0.07	W035, W035A	1.00

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
T. Malecki, M. Groomer	41.754615	-78.398383	WD071TMM, PSS and PEM wetland

General Comments: Large PEM and PSS wetland complex. Two streams occur within the wetland complex. PSS wetlands located within relic slough within floodplain of stream. The PSS wetland (W035) occurs within maintained pipeline ROW (0.05 acres in ECL) and continues upslope of Project (3.30 acres delineated) beyond ECL. The PEM wetland occurs within an access road (0.02 acres in ECL) and continues upslope of Project (1.11 acres delineated) beyond ECL. Impacts occur within both the PEM and PSS wetlands. AA includes 0.07 acres of the proposed impacted area to PEM and PSS wetlands, and 0.93 acres of the wetland complex that will not be impacted.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	0%	0%	20%	**20%**	**40%**	**20%**	**Total Score:**
	Score:	0	0	12	**7**	**4**	**2**	
	Total Sub-score:	0.00	0.00	2.40	1.40	1.60	0.40	**5.80**

0.29

Comments: Area includes maintained pipeline ROW with access road/ATV trail. Streams, other wetlands, cleared areas and agricultural land occur within ZOI. Adjecent forest has maintained understory.

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary **Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting.

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary **Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	17	* (0.67)	11
b. Roadbed 100-300:	14	* (0.33)	5
		Total Score:	16

0.80

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting. Temporary dirt access road connecting paved road to pipeline ROW.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No Invasive Species identified in wetland AA.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments:

Area includes maintained pipeline ROW and maintenance road/ATV trail.

Cleared area and agricultural land occur in and around wetland.

a. Invasive Sub-Score:	20	**Total Score**
b. Vegetation Sub-Score:	9	**29**

0.73

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: One stressor identified due to ROW alteration caused by pipeline maintenance and ATV use.

Score:	**17**

0.85

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Two stressors identified due to agriculture, and ROW alteration caused by pipeline maintenance and ATV use.

Score:	**14**

0.70

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No stressors identified.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No stressors identified.

a. Eutrophication Score	20	**Total Score:**
b. Contaminant Score	20	**40**

1.00

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.73**

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

Roadbed Worksheet

Project Name / Identifier			Date	Name(s) of Evaluator(s)
NFG FM100 Project			10/06/17	T. Malecki, M. Groomer
Resource Identifier	**AA #**	**Lat (dd)**	**Long (dd)**	**Notes:**
WD071TMM	W035, W035A	41.754615	-78.398383	Pipeline access road/ATV trail

Roadbeds: Record the number of occurrences by roadbed type and distance category. Multiply the number of occurrences by the weighting factors for each roadbed type and distance category then sum the total score for each distance category. The total scores for each distance category are then compared to the condition category descriptions.

Roadbed Type	Distance	Occurrences	Weighting Factor	Score	Distance	Occurrences	Weighting Factor	Score
≥ 4 Lane Paved	0-100 ft.		4	0	100-300 ft.		4	0
2 Lane Paved	0-100 ft.		2	0	100-300 ft.		2	0
1 Lane Paved	0-100 ft.		1	0	100-300 ft.	1	1	1
Gravel Road	0-100 ft.		1	0	100-300 ft.		1	0
Dirt Road	0-100 ft.	1	2	2	100-300 ft.	1	2	2
Railroad	0-100 ft.		2	0	100-300 ft.		2	0
Other Roadbeds	0-100 ft.		1, 2 or 4	0	100-300 ft.		1, 2 or 4	0
Total Scores:	0-100 ft.	2			100-300 ft.	3		

Road Comments: Dirt access road/ATV trail used for pipeline inspection and maintenance. Not an improved road, no gravel, no grading. Temporary dirt access road connecting paved road to pipeline ROW.

Pennsylvania Wetland Condition Level 2 Rapid Assessment	10/06/17		
(Document No. 310-2137-002)	Occurrence		
Pennsylvania Department of Environmental Protection	in AA		
STRESSOR WORKSHEET	**Y**	**#'s**	**N**
Vegetation Alteration			
Mowing	X		
Moderate livestock grazing (within one year)			X
Crops (annual row crops, within one year)	X		
Selective tree harvesting/cutting (>50% removal, within 5 years)			X
Right-of-way clearing (mechanical or chemical)	X	1	
Clear cutting or Brush cutting (mechanized removal of shrubs and saplings)	X		
Removal of woody debris			X
Aquatic weed control (mechanical or herbicide)			X
Excessive herbivory (deer, muskrat, nutria, carp, insects, etc.)			X
Plantation (conversion from typical natural tree species, including orchards)			X
Other:			X
Total Number:	**4**		
Hydrologic Modification			
Ditching, tile draining, or other dewatering methods			X
Dike/weir/dam			X
Filling/grading			X
Dredging/excavation			X
Stormwater inputs (culvert or similar concentrated urban runoff)			X
Microtopographic alterations (e.g., plowing, forestry bedding, skidder/ATV tracks)	X		
Dead or dying trees (trunks still standing) *			X
Stream alteration (channelization or incision)			X
Other:			X
Total Number:	**1**		
Sedimentation			
Sediment deposits/plumes			X
Eroding banks/slopes			X
Active construction (earth disturbance for development)			X
Active plowing (plowing for crop planting in past year)	X		
Intensive livestock grazing (in one year, ground is >50% bare)			X
Active selective forestry harvesting (within one year)			X
Active forest harvesting (within two years, includes roads, borrow areas, pads, etc.)			X
Turbidity (moderate concentration of suspended solids in the water column, obvious sediment discharges)			X
Other:	X		
Total Number:	**2**		
Eutrophication			
Direct discharges from agricultural feedlots, manure pits, etc.			X
Direct discharges from septic or sewage treatment plants, fish hatcheries, etc.			X
Heavy or moderately heavy formation of algal mats			X
Other:			X
Total Number:	**0**		
Contaminant/Toxicity			
Severe vegetation stress (source unknown or suspected)			X
Obvious spills, discharges, plumes, odors, etc.			X
Acidic drainages (mined sites, quarries, road cuts)			X
Point discharges from adjacent industrial facilities, landfills, railroad yards, or comparable sites			X
Chemical defoliation (majority of herbaceous and woody plants affected, within one year)			X
Fish or wildlife kills or obvious disease or abnormalities observed			X
Excessive garbage/dumping			X
Other:			X
Total Number:	**0**		

Pennsylvania Wetland Condition Level 2 Rapid Assessment
(Document No. 310-2137-002)
Pennsylvania Department of Environmental Protection

Invasive Species Presence Worksheet

Are invasive species (from list) present at the site in any layer? YES NO

If listed species present, enter the percent areal coverage for each species below:

Species Code		<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%	*Species Code*	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%

Total % relative cover of all invasives, collectively on site: 0 %

Comments:

Common Invasives/Aggressives List

Code	Common Name	*Scientific*	Status	Code	Common Name	*Scientific*	Status
aggi2	Redtop	*Agrostis gigantea*	FACW	luhe	Water primrose	*Ludwigia hexapetala*	OBLW
algl2	European Alder	*Alnus glutinosa*	FACW	lyvu	Garden loosestrife	*Lysimachia vulgaris*	OBLW
arhi3	Carpetgrass	*Arthraxon hispidus*	FAC-	lysa2	Purple loosestrife	*Lythrum salicaria*	FACW
beth	Japanese barberry	*Berberis thunbergii*	FACW	maqu	European waterclover	*Marsilea quadrifolia*	OBLW
bevu	European barberry	*Berberis vulgaris*	FACW	mivi	Japanese stiltgrass	*Microstegium vimineum*	FAC
butom	Flowering Rush	*Butomus umbellatus*	OBLW	nami2	Water cress	*Nasturtium officinale*	OBLW
calli6	Pond water-starwort	*Callitriche stagnalis*	OBLW	pelo	Low smartweed	*Persicaria longiseta*	FACW
egde	Brazilian waterweed	*Egeria densa*	OBLW	phar	Reed canary grass	*Phalaris arundinacea*	FACW
elan	Russian olive	*Elaeagnus angustifolia*	FACU	phau7	Common Reed	*Phragmites australis*	OBLW
elum	Autumn olive	*Elaeagnus umbellata*	FACU	potr	Rough bluegrass	*Poa trivialis*	FACW
ephi	Hairy willow-herb	*Epilobium hirsutum*	FACW	pocu6	Japanese knotweed	*Polygonum (Faloia) cuspidatum*	FAC-
eppa5	Willow-herb	*Epilobium parviflorum*	FACW	pgpf	Mile-a-minute	*Polygonum perfoliatum*	FAC-
fasa	Giant knotweed	*Fallopia sachalinensis*	OBLW	puera	Kudzu-vine	*Pueraria lobata*	FAC-
gldi	Mudmats	*Glossostigma diandrum*	OBLW	pysp1	Apple/crabapple/pear	*Pyrus sp.*	FAC?
hola	Velvetgrass	*Holcus lanatus*	FAC	rhfr	Glossy Buckthorn	*Rhamnus frangula*	FAC-
huja	Japanese Hops	*Humulus japonicus*	FACU	romu	Multiflora rose	*Rosa multiflora*	FACU
loja	Japanese honeysuckle	*Lonicera japonica*	FAC-	tyan	Cattail (hybrid)	*Typha angustifolia*	OBLW
lomo	Morrow's honeysuckle	*Lonicera morrowii*	NI	tygl	Hybrid cattail	*Typha x glauca*	OBLW
lota	Tartarian honeysuckle	*Lonicera tatarica*					

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
456456	NFG FM100 Project	10/06/17	0.17	W037B, W037C	1.00	

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
J. Miner, C. Maier, M. Groomer	41.753999	-78.394842	RW068CJLM, PEM and PSS wetlands

General Comments: Seasonal wet back channel to Potato Creek. PEM and PSS wetland in maintained pipeline ROW (0.17 acres in ECL). Wetland continues beyond existing ROW, upslope and downslope of Project (2.28 acres delineated) beyond ECL. Impacts occur only to the PEM and PSS wetland area in the disturbed ROW. AA includes 1.00 acre of PEM and PSS within and beyond the Project area.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	0%	0%	25%	25%	50%	5%	Total Score:
	Score:	0	0	13	7	4	1	0.35
	Total Sub-score:	0.00	0.00	3.25	1.75	2.00	0.05	7.05

Comments: Area includes maintained pipeline ROW with access road/ATV trail, other wetlands, a stream, agricultural pasture, and a paved road. Adjacent forest has maintained understory.

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary **Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting.

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary **Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	17	* (0.67)	11	
b. Roadbed 100-300:	14	* (0.33)	5	0.80
		Total Score:	16	

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting. Paved road within 300 feet of AA,

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

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3. Vegetation Condition Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: One Invasive Species identified in wetland AA.

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.					**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments:

Maintained pipeline ROW and maintenance road/ATV trail.

a. Invasive Sub-Score:	18	**Total Score**
b. Vegetation Sub-Score:	12	**30**

0.75

4. Hydrologic Modification Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.					**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0.85**

Comments: Within ROW alteration caused by pipeline maintenance and ATV use.

Score:	**17**

5. Sediment Stressor Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.					**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0.85**

Comments: One stressor identified due to ROW maintenance and ATV use.

Score:	**17**

6. Water Quality Stressor Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No stressors identified.

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.					**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No stressors identified.

a. Eutrophication Score	20	**Total Score:**
b. Contaminant Score	20	**40**

1.00

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.77**

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

Roadbed Worksheet

Project Name / Identifier			Date	Name(s) of Evaluator(s)
NFG FM100 Project			10/06/17	J. Miner, C. Maier, M. Groomer
Resource Identifier	**AA #**	**Lat (dd)**	**Long (dd)**	**Notes:**
RW068CJLM	W037B, W037C	41.753999	-78.394842	Pipeline access road/ATV trail

Roadbeds: Record the number of occurrences by roadbed type and distance category. Multiply the number of occurrences by the weighting factors for each roadbed type and distance category then sum the total score for each distance category. The total scores for each distance category are then compared to the condition category descriptions.

Roadbed Type	Distance	Occurrences	Weighting Factor	Score	Distance	Occurrences	Weighting Factor	Score
≥ 4 Lane Paved	0-100 ft.		4	0	100-300 ft.		4	0
2 Lane Paved	0-100 ft.		2	0	100-300 ft.	1	2	2
1 Lane Paved	0-100 ft.		1	0	100-300 ft.		1	0
Gravel Road	0-100 ft.		1	0	100-300 ft.		1	0
Dirt Road	0-100 ft.	1	2	2	100-300 ft.	1	2	2
Railroad	0-100 ft.		2	0	100-300 ft.		2	0
Other Roadbeds	0-100 ft.		1, 2 or 4	0	100-300 ft.		1, 2 or 4	0
Total Scores:	0-100 ft.		2		100-300 ft.		4	

Road Comments: Unimproved access road/ATV trail used for pipeline inspection and maintenance. Not an improved road, no gravel, no grading. Paved road within 300 feet of AA.

Pennsylvania Wetland Condition Level 2 Rapid Assessment	10/06/17		
(Document No. 310-2137-002)	Occurrence		
Pennsylvania Department of Environmental Protection	in AA		
STRESSOR WORKSHEET	**Y**	**#'s**	**N**
Vegetation Alteration			
Mowing	X		
Moderate livestock grazing (within one year)			X
Crops (annual row crops, within one year)			X
Selective tree harvesting/cutting (>50% removal, within 5 years)			X
Right-of-way clearing (mechanical or chemical)	X	1	
Clear cutting or Brush cutting (mechanized removal of shrubs and saplings)	X		
Removal of woody debris			X
Aquatic weed control (mechanical or herbicide)			X
Excessive herbivory (deer, muskrat, nutria, carp, insects, etc.)			X
Plantation (conversion from typical natural tree species, including orchards)			X
Other:			X
Total Number:	**3**		
Hydrologic Modification			
Ditching, tile draining, or other dewatering methods			X
Dike/weir/dam			X
Filling/grading			X
Dredging/excavation			X
Stormwater inputs (culvert or similar concentrated urban runoff)			X
Microtopographic alterations (e.g., plowing, forestry bedding, skidder/ATV tracks)	X		
Dead or dying trees (trunks still standing) *			X
Stream alteration (channelization or incision)			X
Other:			X
Total Number:	**1**		
Sedimentation			
Sediment deposits/plumes			X
Eroding banks/slopes			X
Active construction (earth disturbance for development)			X
Active plowing (plowing for crop planting in past year)			X
Intensive livestock grazing (in one year, ground is >50% bare)			X
Active selective forestry harvesting (within one year)			X
Active forest harvesting (within two years, includes roads, borrow areas, pads, etc.)			X
Turbidity (moderate concentration of suspended solids in the water column, obvious sediment discharges)			X
Other:	X		
Total Number:	**1**		
Eutrophication			
Direct discharges from agricultural feedlots, manure pits, etc.			X
Direct discharges from septic or sewage treatment plants, fish hatcheries, etc.			X
Heavy or moderately heavy formation of algal mats			X
Other:			X
Total Number:	**0**		
Contaminant/Toxicity			
Severe vegetation stress (source unknown or suspected)			X
Obvious spills, discharges, plumes, odors, etc.			X
Acidic drainages (mined sites, quarries, road cuts)			X
Point discharges from adjacent industrial facilities, landfills, railroad yards, or comparable sites			X
Chemical defoliation (majority of herbaceous and woody plants affected, within one year)			X
Fish or wildlife kills or obvious disease or abnormalities observed			X
Excessive garbage/dumping			X
Other:			X
Total Number:	**0**		

Pennsylvania Wetland Condition Level 2 Rapid Assessment
(Document No. 310-2137-002)
Pennsylvania Department of Environmental Protection

Invasive Species Presence Worksheet

Are invasive species (from list) present at the site in any layer? YES NO

If listed species present, enter the percent areal coverage for each species below:

Species Code		<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%	*Species Code*	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%
loja		1								

Total % relative cover of all invasives, collectively on site: 1 %

Comments:

Common Invasives/Aggressives List

Code	Common Name	*Scientific*	Status	Code	Common Name	*Scientific*	Status
aggi2	Redtop	*Agrostis gigantea*	FACW	luhe	Water primrose	*Ludwigia hexapetala*	OBLW
algl2	European Alder	*Alnus glutinosa*	FACW	lyvu	Garden loosestrife	*Lysimachia vulgaris*	OBLW
arhi3	Carpetgrass	*Arthraxon hispidus*	FAC-	lysa2	Purple loosestrife	*Lythrum salicaria*	FACW
beth	Japanese barberry	*Berberis thunbergii*	FACW	maqu	European waterclover	*Marsilea quadrifolia*	OBLW
bevu	European barberry	*Berberis vulgaris*	FACW	mivi	Japanese stiltgrass	*Microstegium vimineum*	FAC
butom	Flowering Rush	*Butomus umbellatus*	OBLW	nami2	Water cress	*Nasturtium officinale*	OBLW
calli6	Pond water-starwort	*Callitriche stagnalis*	OBLW	pelo	Low smartweed	*Persicaria longiseta*	FACW
egde	Brazilian waterweed	*Egeria densa*	OBLW	phar	Reed canary grass	*Phalaris arundinacea*	FACW
elan	Russian olive	*Elaeagnus angustifolia*	FACU	phau7	Common Reed	*Phragmites australis*	OBLW
elum	Autumn olive	*Elaeagnus umbellata*	FACU	potr	Rough bluegrass	*Poa trivialis*	FACW
ephi	Hairy willow-herb	*Epilobium hirsutum*	FACW	pocu6	Japanese knotweed	*Polygonum (Faloia) cuspidatum*	FAC-
eppa5	Willow-herb	*Epilobium parviflorum*	FACW	pgpf	Mile-a-minute	*Polygonum perfoliatum*	FAC-
fasa	Giant knotweed	*Fallopia sachalinensis*	OBLW	puera	Kudzu-vine	*Pueraria lobata*	FAC-
gldi	Mudmats	*Glossostigma diandrum*	OBLW	pysp1	Apple/crabapple/pear	*Pyrus sp.*	FAC?
hola	Velvetgrass	*Holcus lanatus*	FAC	rhfr	Glossy Buckthorn	*Rhamnus frangula*	FAC-
huja	Japanese Hops	*Humulus japonicus*	FACU	romu	Multiflora rose	*Rosa multiflora*	FACU
loja	Japanese honeysuckle	*Lonicera japonica*	FAC-	tyan	Cattail (hybrid)	*Typha angustifolia*	OBLW
lomo	Morrow's honeysuckle	*Lonicera morrowii*	NI	tygl	Hybrid cattail	*Typha x glauca*	OBLW
lota	Tartarian honeysuckle	*Lonicera tatarica*					

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)
456456	NFG FM100 Project	10/05/17	0.80	W091	1.00

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
J. Miner, C. Maier, M. Groomer	41.795333	-78.254476	WD058JLM, PSS wetland

General Comments: Large PSS wetland in a backwater of the Allgheny River. Forested areas occur outside of the plot. PSS located 0.80 acres in ECL and continues downslope of Project (4.2 acres delineated) beyond ECL. Impacts occur only to the PSS wetland area in the Project area. AA includes 0.80 acres of PSS within and 0.20 acres beyond the Project area.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal		Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14	13 12 11	10 9	8 7 6	5 4	3 2 1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	0%	40%	10%	10%	20%	20%	Total Score:
	Score:	0	13	9	7	4	1	
	Total Sub-score:	0.00	5.20	0.90	0.70	0.80	0.20	7.80

0.39

Comments: Area includes maintained pipeline ROW, paved roads, development, wetlands, and streams. Adjacent forest has maintained understory.

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal		Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.
SCORE	20 19 18 17 16	15 14	13 12 11		10 9	8 7 6	5 4	3 2 1

Comments: Maintained pipeline ROW and dirt road to residential development within 100 feet of wetland.

	Condition Categories				
	Optimal	Suboptimal	Marginal		Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.
SCORE	20 19 18 17 16	15 14	13 12 11		10 9	8 7 6	5 4	3 2 1

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	14	* (0.67)	9
b. Roadbed 100-300:	6	* (0.33)	2
		Total Score:	11

CI = Total Score/20: **0.57**

Comments: Maintained pipeline ROW, dirt road to residential development, and paved roads within 300 feet of wetland.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
a. Invasive Species Presence	**High Optimal:** No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No Invasive Species identified in wetland AA.

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.					**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments:

No stressors identified.

a. Invasive Sub-Score:	20	**Total Score**	**1.00**
b. Vegetation Sub-Score:	20	**40**	

4. Hydrologic Modification Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.					**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1.00**

Comments: No stressors identified.

Score:	**20**

5. Sediment Stressor Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.					**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**1.00**

Comments: No stressors identified.

Score:	**20**

6. Water Quality Stressor Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No stressors identified.

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.					**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No stressors identified.

a. Eutrophication Score	20	**Total Score:**	**1.00**
b. Contaminant Score	20	**40**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.83**

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

Roadbed Worksheet

Project Name / Identifier			Date	Name(s) of Evaluator(s)
NFG FM100 Project			10/05/17	J. Miner, C. Maier, M. Groomer
Resource Identifier	**AA #**	**Lat (dd)**	**Long (dd)**	**Notes:**
WD058JLM	W091	41.795333	-78.254476	

Roadbeds: Record the number of occurrences by roadbed type and distance category. Multiply the number of occurrences by the weighting factors for each roadbed type and distance category then sum the total score for each distance category. The total scores for each distance category are then compared to the condition category descriptions.

Roadbed Type	Distance	Occurrences	Weighting Factor	Score	Distance	Occurrences	Weighting Factor	Score
≥ 4 Lane Paved	0-100 ft.		4	0	100-300 ft.	1	4	4
2 Lane Paved	0-100 ft.		2	0	100-300 ft.	1	2	2
1 Lane Paved	0-100 ft.		1	0	100-300 ft.		1	0
Gravel Road	0-100 ft.		1	0	100-300 ft.		1	0
Dirt Road	0-100 ft.	2	2	4	100-300 ft.	2	2	4
Railroad	0-100 ft.		2	0	100-300 ft.		2	0
Other Roadbeds	0-100 ft.		1, 2 or 4	0	100-300 ft.		1, 2 or 4	0
Total Scores:	0-100 ft.	4			100-300 ft.	10		

Road Comments: Dirt roads to residential development within 100 feet and paved roads within 300 feet of wetland.

Pennsylvania Wetland Condition Level 2 Rapid Assessment	10/05/17		
(Document No. 310-2137-002)	Occurrence		
Pennsylvania Department of Environmental Protection	in AA		
STRESSOR WORKSHEET	**Y**	**#'s**	**N**
Vegetation Alteration			
Mowing			X
Moderate livestock grazing (within one year)			X
Crops (annual row crops, within one year)			X
Selective tree harvesting/cutting (>50% removal, within 5 years)			X
Right-of-way clearing (mechanical or chemical)			X
Clear cutting or Brush cutting (mechanized removal of shrubs and saplings)			X
Removal of woody debris			X
Aquatic weed control (mechanical or herbicide)			X
Excessive herbivory (deer, muskrat, nutria, carp, insects, etc.)			X
Plantation (conversion from typical natural tree species, including orchards)			X
Other:			X
Total Number:	**0**		
Hydrologic Modification			
Ditching, tile draining, or other dewatering methods			X
Dike/weir/dam			X
Filling/grading			X
Dredging/excavation			X
Stormwater inputs (culvert or similar concentrated urban runoff)			X
Microtopographic alterations (e.g., plowing, forestry bedding, skidder/ATV tracks)			X
Dead or dying trees (trunks still standing) *			X
Stream alteration (channelization or incision)			X
Other:			X
Total Number:	**0**		
Sedimentation			
Sediment deposits/plumes			X
Eroding banks/slopes			X
Active construction (earth disturbance for development)			X
Active plowing (plowing for crop planting in past year)			X
Intensive livestock grazing (in one year, ground is >50% bare)			X
Active selective forestry harvesting (within one year)			X
Active forest harvesting (within two years, includes roads, borrow areas, pads, etc.)			X
Turbidity (moderate concentration of suspended solids in the water column, obvious sediment discharges)			X
Other:			X
Total Number:	**0**		
Eutrophication			
Direct discharges from agricultural feedlots, manure pits, etc.			X
Direct discharges from septic or sewage treatment plants, fish hatcheries, etc.			X
Heavy or moderately heavy formation of algal mats			X
Other:			X
Total Number:	**0**		
Contaminant/Toxicity			
Severe vegetation stress (source unknown or suspected)			X
Obvious spills, discharges, plumes, odors, etc.			X
Acidic drainages (mined sites, quarries, road cuts)			X
Point discharges from adjacent industrial facilities, landfills, railroad yards, or comparable sites			X
Chemical defoliation (majority of herbaceous and woody plants affected, within one year)			X
Fish or wildlife kills or obvious disease or abnormalities observed			X
Excessive garbage/dumping			X
Other:			X
Total Number:	**0**		

Pennsylvania Wetland Condition Level 2 Rapid Assessment
(Document No. 310-2137-002)
Pennsylvania Department of Environmental Protection

Invasive Species Presence Worksheet

Are invasive species (from list) present at the site in any layer? YES NO

If listed species present, enter the percent areal coverage for each species below:

Species Code	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%	*Species Code*	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%

Total % relative cover of all invasives, collectively on site: 0 %

Comments:

Common Invasives/Aggressives List

Code	Common Name	*Scientific*	Status	Code	Common Name	*Scientific*	Status
aggi2	Redtop	*Agrostis gigantea*	FACW	luhe	Water primrose	*Ludwigia hexapetala*	OBLW
algl2	European Alder	*Alnus glutinosa*	FACW	lyvu	Garden loosestrife	*Lysimachia vulgaris*	OBLW
arhi3	Carpetgrass	*Arthraxon hispidus*	FAC-	lysa2	Purple loosestrife	*Lythrum salicaria*	FACW
beth	Japanese barberry	*Berberis thunbergii*	FACW	maqu	European waterclover	*Marsilea quadrifolia*	OBLW
bevu	European barberry	*Berberis vulgaris*	FACW	mivi	Japanese stiltgrass	*Microstegium vimineum*	FAC
butom	Flowering Rush	*Butomus umbellatus*	OBLW	nami2	Water cress	*Nasturtium officinale*	OBLW
calli6	Pond water-starwort	*Callitriche stagnalis*	OBLW	pelo	Low smartweed	*Persicaria longiseta*	FACW
egde	Brazilian waterweed	*Egeria densa*	OBLW	phar	Reed canary grass	*Phalaris arundinacea*	FACW
elan	Russian olive	*Elaeagnus angustifolia*	FACU	phau7	Common Reed	*Phragmites australis*	OBLW
elum	Autumn olive	*Elaeagnus umbellata*	FACU	potr	Rough bluegrass	*Poa trivialis*	FACW
ephi	Hairy willow-herb	*Epilobium hirsutum*	FACW	pocu6	Japanese knotweed	*Polygonum (Faloia) cuspidatum*	FAC-
eppa5	Willow-herb	*Epilobium parviflorum*	FACW	pgpf	Mile-a-minute	*Polygonum perfoliatum*	FAC-
fasa	Giant knotweed	*Fallopia sachalinensis*	OBLW	puera	Kudzu-vine	*Pueraria lobata*	FAC-
gldi	Mudmats	*Glossostigma diandrum*	OBLW	pysp1	Apple/crabapple/pear	*Pyrus sp.*	FAC?
hola	Velvetgrass	*Holcus lanatus*	FAC	rhfr	Glossy Buckthorn	*Rhamnus frangula*	FAC-
huja	Japanese Hops	*Humulus japonicus*	FACU	romu	Multiflora rose	*Rosa multiflora*	FACU
loja	Japanese honeysuckle	*Lonicera japonica*	FAC-	tyan	Cattail (hybrid)	*Typha angustifolia*	OBLW
lomo	Morrow's honeysuckle	*Lonicera morrowii*	NI	tygl	Hybrid cattail	*Typha x glauca*	OBLW
lota	Tartarian honeysuckle	*Lonicera tatarica*					

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
456456	NFG FM100 Project	08/03/18	0.14	W127	1.00	

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
J. Miner, M. Groomer	41.760453	-78.337957	WD207JLM, PFO and PEM wetland

General Comments: Wetland/upland mosaic that includes approximately 20-30 percent uplands. Wetland depressions with upland hummocks. PFO wetland in maintained pipeline ROW (0.14 acres in ECL). Wetland continues beyond existing ROW, upslope of Project (0.22 acres delineated) beyond ECL. Connected to PEM wetland within Project area and continues downslope of the Project (0.33 acres delineated) beyond ECL. PEM wetland is connected to another PFO wetland which has no impacts and does not occur within the Project area. Impacts occur only to the PFO and PEM wetland area in the disturbed ROW. AA includes 0.59 acres of PFO and PEM within the Project area and 0.41 acres beyond the Project area.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	Suboptimal	Marginal	Poor	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	0%	60%	10%	**10%**	**20%**	**0%**	Total Score:
	Score:	0	13	9	**7**	**4**	**0**	
	Total Sub-score:	0.00	7.80	0.90	0.70	0.80	0.00	**10.20**

0.51

Comments: Area includes maintained pipeline ROW with access road/ATV trail and other wetlands. Adjacent forest has maintained understory.

2. Roadbed Presence Index

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary **Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting.

	Condition Categories				
	Optimal	Suboptimal	Marginal	Poor	
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary **Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	17	* (0.67)	11
b. Roadbed 100-300:	17	* (0.33)	6
		Total Score:	17

0.85

Comments: Pipeline ROW maintenance road, two-track, vegetated, with rutting.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
a. Invasive Species Presence	**High Optimal:** No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: One Invasive Species identified in wetland AA.

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.					**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments:

Maintained pipeline ROW and maintenance road/ATV trail.

a. Invasive Sub-Score:	13	**Total Score**
b. Vegetation Sub-Score:	12	**25**

CI = Total Score/40: 0.63

4. Hydrologic Modification Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.					**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0.85**

Comments: Within ROW alteration caused by pipeline maintenance and ATV use.

Score:	**17**

5. Sediment Stressor Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.					**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0.85**

Comments: One stressor identified due to ROW maintenance and ATV use.

Score:	**17**

6. Water Quality Stressor Index

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No stressors identified.

	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.					**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No stressors identified.

a. Eutrophication Score	20	**Total Score:**
b. Contaminant Score	20	**40**

1.00

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index: 0.78**

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

Roadbed Worksheet

Project Name / Identifier			Date	Name(s) of Evaluator(s)
NFG FM100 Project			08/03/18	J. Miner, M. Groomer
Resource Identifier	**AA #**	**Lat (dd)**	**Long (dd)**	**Notes:**
WD207JLM	W127	41.760453	-78.337957	Pipeline access road/ATV trail

Roadbeds: Record the number of occurrences by roadbed type and distance category. Multiply the number of occurrences by the weighting factors for each roadbed type and distance category then sum the total score for each distance category. The total scores for each distance category are then compared to the condition category descriptions.

Roadbed Type	Distance	Occurrences	Weighting Factor	Score	Distance	Occurrences	Weighting Factor	Score
≥ 4 Lane Paved	0-100 ft.		4	0	100-300 ft.		4	0
2 Lane Paved	0-100 ft.		2	0	100-300 ft.		2	0
1 Lane Paved	0-100 ft.		1	0	100-300 ft.		1	0
Gravel Road	0-100 ft.		1	0	100-300 ft.		1	0
Dirt Road	0-100 ft.	1	2	2	100-300 ft.	1	2	2
Railroad	0-100 ft.		2	0	100-300 ft.		2	0
Other Roadbeds	0-100 ft.		1, 2 or 4	0	100-300 ft.		1, 2 or 4	0
Total Scores:	0-100 ft.	2			100-300 ft.	2		

Road Comments: Unimproved access road/ATV trail used for pipeline inspection and maintenance. Not an improved road, no gravel, no grading.

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

STRESSOR WORKSHEET

08/03/18

	Occurrence in AA		
	Y	#'s	N
Vegetation Alteration			
Mowing	X		
Moderate livestock grazing (within one year)			X
Crops (annual row crops, within one year)			X
Selective tree harvesting/cutting (>50% removal, within 5 years)			X
Right-of-way clearing (mechanical or chemical)	X	1	
Clear cutting or Brush cutting (mechanized removal of shrubs and saplings)	X		
Removal of woody debris			X
Aquatic weed control (mechanical or herbicide)			X
Excessive herbivory (deer, muskrat, nutria, carp, insects, etc.)			X
Plantation (conversion from typical natural tree species, including orchards)			X
Other:			X
Total Number:	**3**		
Hydrologic Modification			
Ditching, tile draining, or other dewatering methods			X
Dike/weir/dam			X
Filling/grading			X
Dredging/excavation			X
Stormwater inputs (culvert or similar concentrated urban runoff)			X
Microtopographic alterations (e.g., plowing, forestry bedding, skidder/ATV tracks)	X		
Dead or dying trees (trunks still standing) *			X
Stream alteration (channelization or incision)			X
Other:			X
Total Number:	**1**		
Sedimentation			
Sediment deposits/plumes			X
Eroding banks/slopes			X
Active construction (earth disturbance for development)			X
Active plowing (plowing for crop planting in past year)			X
Intensive livestock grazing (in one year, ground is >50% bare)			X
Active selective forestry harvesting (within one year)			X
Active forest harvesting (within two years, includes roads, borrow areas, pads, etc.)			X
Turbidity (moderate concentration of suspended solids in the water column, obvious sediment discharges)			X
Other:	X		
Total Number:	**1**		
Eutrophication			
Direct discharges from agricultural feedlots, manure pits, etc.			X
Direct discharges from septic or sewage treatment plants, fish hatcheries, etc.			X
Heavy or moderately heavy formation of algal mats			X
Other:			X
Total Number:	**0**		
Contaminant/Toxicity			
Severe vegetation stress (source unknown or suspected)			X
Obvious spills, discharges, plumes, odors, etc.			X
Acidic drainages (mined sites, quarries, road cuts)			X
Point discharges from adjacent industrial facilities, landfills, railroad yards, or comparable sites			X
Chemical defoliation (majority of herbaceous and woody plants affected, within one year)			X
Fish or wildlife kills or obvious disease or abnormalities observed			X
Excessive garbage/dumping			X
Other:			X
Total Number:	**0**		

Pennsylvania Wetland Condition Level 2 Rapid Assessment
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Invasive Species Presence Worksheet

Are invasive species (from list) present at the site in any layer? YES NO

If listed species present, enter the percent areal coverage for each species below:

Species Code	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%	*Species Code*	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%
mivi		10							

Total % relative cover of all invasives, collectively on site: 10 %

Comments:

Common Invasives/Aggressives List

Code	Common Name	*Scientific*	Status	Code	Common Name	*Scientific*	Status
aggi2	Redtop	*Agrostis gigantea*	FACW	luhe	Water primrose	*Ludwigia hexapetala*	OBLW
algl2	European Alder	*Alnus glutinosa*	FACW	lyvu	Garden loosestrife	*Lysimachia vulgaris*	OBLW
arhi3	Carpetgrass	*Arthraxon hispidus*	FAC-	lysa2	Purple loosestrife	*Lythrum salicaria*	FACW
beth	Japanese barberry	*Berberis thunbergii*	FACW	maqu	European waterclover	*Marsilea quadrifolia*	OBLW
bevu	European barberry	*Berberis vulgaris*	FACW	mivi	Japanese stiltgrass	*Microstegium vimineum*	FAC
butom	Flowering Rush	*Butomus umbellatus*	OBLW	nami2	Water cress	*Nasturtium officinale*	OBLW
calli6	Pond water-starwort	*Callitriche stagnalis*	OBLW	pelo	Low smartweed	*Persicaria longiseta*	FACW
egde	Brazilian waterweed	*Egeria densa*	OBLW	phar	Reed canary grass	*Phalaris arundinacea*	FACW
elan	Russian olive	*Elaeagnus angustifolia*	FACU	phau7	Common Reed	*Phragmites australis*	OBLW
elum	Autumn olive	*Elaeagnus umbellata*	FACU	potr	Rough bluegrass	*Poa trivialis*	FACW
ephi	Hairy willow-herb	*Epilobium hirsutum*	FACW	pocu6	Japanese knotweed	*Polygonum (Faloia) cuspidatum*	FAC-
eppa5	Willow-herb	*Epilobium parviflorum*	FACW	pgpf	Mile-a-minute	*Polygonum perfoliatum*	FAC-
fasa	Giant knotweed	*Fallopia sachalinensis*	OBLW	puera	Kudzu-vine	*Pueraria lobata*	FAC-
gldi	Mudmats	*Glossostigma diandrum*	OBLW	pysp1	Apple/crabapple/pear	*Pyrus sp.*	FAC?
hola	Velvetgrass	*Holcus lanatus*	FAC	rhfr	Glossy Buckthorn	*Rhamnus frangula*	FAC-
huja	Japanese Hops	*Humulus japonicus*	FACU	romu	Multiflora rose	*Rosa multiflora*	FACU
loja	Japanese honeysuckle	*Lonicera japonica*	FAC-	tyan	Cattail (hybrid)	*Typha angustifolia*	OBLW
lomo	Morrow's honeysuckle	*Lonicera morrowii*	NI	tygl	Hybrid cattail	*Typha x glauca*	OBLW
lota	Tartarian honeysuckle	*Lonicera tatarica*					

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
456456	NFG FM100 Project	08/01/2018	0.39	W141, W141A	1.00	

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
T. Malecki, M. Groomer	41.835692	-78.124825	WD206TMM, PSS and PEM wetland

General Comments: PSS wetland parallels intermittent stream on both sides and is connected to PEM wetland (W141A). PSS Wetland has 0.10 acres in ECL and continues downslope of Project (0.72 acres delineated) beyond ECL. PEM wetland occurs in mowed agricultural field (0.29 acres in ECL) and continues downslope of Project (0.18 acres delineated) beyond ECL where it connects to W141. AA includes entire 0.47 acres of the PEM wetland and 0.53 acres of the PSS wetland.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.		**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.			**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.		**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.		**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:																			
Scoring:	% ZOI Area:	0%		0%		50%		**0%**		**45%**		**5%**		**Total Score:**						
	Score:	0		0		12		**0**		**4**		**1**								**0.39**
	Total Sub-score:	0.00		0.00		6.00		0.00		1.80		0.05		**7.85**						

Comments: Area includes streams, agricultural fields, forest with maintained understory, and residential development.

2. Roadbed Presence Index

	Condition Categories																			
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary		**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.			**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.		**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.			**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.		**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.			**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.		**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No roadbeds present in ZOI.

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary		**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.			**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.		**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.			**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.		**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.			**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.		**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	20	* (0.67)	13	
b. Roadbed 100-300:	20	* (0.33)	7	**1.00**
		Total Score:	**20**	

Comments: No roadbeds present in ZOI.

Wetland Condition Assessment Form

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Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No Invasive Species identified in wetland AA.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments:

Maintaince on agricultural land.

a. Invasive Sub-Score:	20	**Total Score**
b. Vegetation Sub-Score:	14	**34**

0.85

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: Maintaince on agricultural land and presence of added spring boxes and PVC pipes placed along intermittent stream.

Score:	**14**

0.70

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/20

Comments: One stressor identified due to maintaince on agricultural land and active cow pasture.

Score:	**17**

0.85

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No stressors identified.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

CI = Total Score/40

Comments: No stressors identified.

a. Eutrophication Score	20	**Total Score:**
b. Contaminant Score	20	**40**

1.00

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.80**

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

Roadbed Worksheet

Project Name / Identifier			Date	Name(s) of Evaluator(s)
NFG FM100 Project			08/01/2018	T. Malecki, M. Groomer
Resource Identifier	**AA #**	**Lat (dd)**	**Long (dd)**	**Notes:**
WD206TMM	W141, W141A	41.835692	-78.124825	

Roadbeds: Record the number of occurrences by roadbed type and distance category. Multiply the number of occurrences by the weighting factors for each roadbed type and distance category then sum the total score for each distance category. The total scores for each distance category are then compared to the condition category descriptions.

Roadbed Type	Distance	Occurrences	Weighting Factor	Score	Distance	Occurrences	Weighting Factor	Score
≥ 4 Lane Paved	0-100 ft.		4	0	100-300 ft.		4	0
2 Lane Paved	0-100 ft.		2	0	100-300 ft.		2	0
1 Lane Paved	0-100 ft.		1	0	100-300 ft.		1	0
Gravel Road	0-100 ft.		1	0	100-300 ft.		1	0
Dirt Road	0-100 ft.		2	0	100-300 ft.		2	0
Railroad	0-100 ft.		2	0	100-300 ft.		2	0
Other Roadbeds	0-100 ft.		1, 2 or 4	0	100-300 ft.		1, 2 or 4	0
Total Scores:	0-100 ft.	0			100-300 ft.	0		

Road Comments: No roadbeds present in ZOI.

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

STRESSOR WORKSHEET

08/01/2018

	Occurrence in AA		
	Y	#'s	N
Vegetation Alteration			
Mowing	X		
Moderate livestock grazing (within one year)			X
Crops (annual row crops, within one year)	X		
Selective tree harvesting/cutting (>50% removal, within 5 years)			X
Right-of-way clearing (mechanical or chemical)			X
Clear cutting or Brush cutting (mechanized removal of shrubs and saplings)			X
Removal of woody debris			X
Aquatic weed control (mechanical or herbicide)			X
Excessive herbivory (deer, muskrat, nutria, carp, insects, etc.)			X
Plantation (conversion from typical natural tree species, including orchards)			X
Other:			X
Total Number:	**2**		
Hydrologic Modification			
Ditching, tile draining, or other dewatering methods			X
Dike/weir/dam			X
Filling/grading			X
Dredging/excavation			X
Stormwater inputs (culvert or similar concentrated urban runoff)	X	2	
Microtopographic alterations (e.g., plowing, forestry bedding, skidder/ATV tracks)	X		
Dead or dying trees (trunks still standing) *			X
Stream alteration (channelization or incision)			X
Other:			X
Total Number:	**2**		
Sedimentation			
Sediment deposits/plumes			X
Eroding banks/slopes			X
Active construction (earth disturbance for development)			X
Active plowing (plowing for crop planting in past year)	X		
Intensive livestock grazing (in one year, ground is >50% bare)			X
Active selective forestry harvesting (within one year)			X
Active forest harvesting (within two years, includes roads, borrow areas, pads, etc.)			X
Turbidity (moderate concentration of suspended solids in the water column, obvious sediment discharges)			X
Other:			X
Total Number:	**1**		
Eutrophication			
Direct discharges from agricultural feedlots, manure pits, etc.			X
Direct discharges from septic or sewage treatment plants, fish hatcheries, etc.			X
Heavy or moderately heavy formation of algal mats			X
Other:			X
Total Number:	**0**		
Contaminant/Toxicity			
Severe vegetation stress (source unknown or suspected)			X
Obvious spills, discharges, plumes, odors, etc.			X
Acidic drainages (mined sites, quarries, road cuts)			X
Point discharges from adjacent industrial facilities, landfills, railroad yards, or comparable sites			X
Chemical defoliation (majority of herbaceous and woody plants affected, within one year)			X
Fish or wildlife kills or obvious disease or abnormalities observed			X
Excessive garbage/dumping			X
Other:			X
Total Number:	**0**		

Pennsylvania Wetland Condition Level 2 Rapid Assessment
(Document No. 310-2137-002)
Pennsylvania Department of Environmental Protection

Invasive Species Presence Worksheet

Are invasive species (from list) present at the site in any layer? YES NO

If listed species present, enter the percent areal coverage for each species below:

Species Code		<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%	*Species Code*	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%

Total % relative cover of all invasives, collectively on site: 0 %

Comments:

Common Invasives/Aggressives List

Code	Common Name	*Scientific*	Status	Code	Common Name	*Scientific*	Status
aggi2	Redtop	*Agrostis gigantea*	FACW	luhe	Water primrose	*Ludwigia hexapetala*	OBLW
algl2	European Alder	*Alnus glutinosa*	FACW	lyvu	Garden loosestrife	*Lysimachia vulgaris*	OBLW
arhi3	Carpetgrass	*Arthraxon hispidus*	FAC-	lysa2	Purple loosestrife	*Lythrum salicaria*	FACW
beth	Japanese barberry	*Berberis thunbergii*	FACW	maqu	European waterclover	*Marsilea quadrifolia*	OBLW
bevu	European barberry	*Berberis vulgaris*	FACW	mivi	Japanese stiltgrass	*Microstegium vimineum*	FAC
butom	Flowering Rush	*Butomus umbellatus*	OBLW	nami2	Water cress	*Nasturtium officinale*	OBLW
calli6	Pond water-starwort	*Callitriche stagnalis*	OBLW	pelo	Low smartweed	*Persicaria longiseta*	FACW
egde	Brazilian waterweed	*Egeria densa*	OBLW	phar	Reed canary grass	*Phalaris arundinacea*	FACW
elan	Russian olive	*Elaeagnus angustifolia*	FACU	phau7	Common Reed	*Phragmites australis*	OBLW
elum	Autumn olive	*Elaeagnus umbellata*	FACU	potr	Rough bluegrass	*Poa trivialis*	FACW
ephi	Hairy willow-herb	*Epilobium hirsutum*	FACW	pocu6	Japanese knotweed	*Polygonum (Faloia) cuspidatum*	FAC-
eppa5	Willow-herb	*Epilobium parviflorum*	FACW	pgpf	Mile-a-minute	*Polygonum perfoliatum*	FAC-
fasa	Giant knotweed	*Fallopia sachalinensis*	OBLW	puera	Kudzu-vine	*Pueraria lobata*	FAC-
gldi	Mudmats	*Glossostigma diandrum*	OBLW	pysp1	Apple/crabapple/pear	*Pyrus sp.*	FAC?
hola	Velvetgrass	*Holcus lanatus*	FAC	rhfr	Glossy Buckthorn	*Rhamnus frangula*	FAC-
huja	Japanese Hops	*Humulus japonicus*	FACU	romu	Multiflora rose	*Rosa multiflora*	FACU
loja	Japanese honeysuckle	*Lonicera japonica*	FAC-	tyan	Cattail (hybrid)	*Typha angustifolia*	OBLW
lomo	Morrow's honeysuckle	*Lonicera morrowii*	NI	tygl	Hybrid cattail	*Typha x glauca*	OBLW
lota	Tartarian honeysuckle	*Lonicera tatarica*					

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
456456	NFG FM100 Project	08/02/2018	0.31	W142	0.96	

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
T. Malecki, M. Groomer	41.835602	-78.12785	WD207TMM, PSS/PEM wetland

General Comments: PSS wetland located on stream bank and extends to agricultural field built on a terrace. Wetland is classified as PEM wetland in agricultural areas that have been mowed. Abutts perennial stream, and is adjacent to W142A, W141, and W141A. Wetland has 0.31 acres in ECL and continues downslope of Project (0.65 acres delineated) beyond ECL. AA includes entire 0.96 acres of the PSS/PEM wetland.

1. Wetland Zone of Influence Condition Index

	Condition Category				
Wetland Zone of Influence (300 foot area around AA perimeter)	**Optimal**: ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**Suboptimal**: **High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. **Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**Marginal**: **High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover. **Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**Poor**: **High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition. **Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	0%	0%	10%	**20%**	**60%**	**10%**	**Total Score:**
	Score:	0	0	12	**7**	**4**	**1**	**0.26**
	Total Sub-score:	0.00	0.00	1.20	1.40	2.40	0.10	**5.10**

Comments: Area includes stream, another wetland, agricultural fields, maintained forest, a dirt road, and residential development.

2. Roadbed Presence Index

	Condition Categories				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**Optimal**: **High Optimal:** No roadbeds present within 100 feet of the AA boundary. **Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**Suboptimal**: **High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**Marginal**: **High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**Poor**: **High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

Comments: No roadbeds present within 100 feet of AA.

	Condition Categories				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**Optimal**: **High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary. **Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**Suboptimal**: **High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4. **Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**Marginal**: **High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8. **Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**Poor**: **High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12. **Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	CI = Total Score/20
SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1	

	Condition Score	Weighting	Sub-Scores	
a. Roadbed 0-100:	20	* **(0.67)**	13	
b. Roadbed 100-300:	17	* **(0.33)**	6	**0.95**
		Total Score:	**19**	

Comments: Dirt road for access to residential development within 300 feet of AA.

Wetland Condition Assessment Form

Pennsylvania Wetland Condition Level 2 Rapid Assessment (Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

For use in all wetland classifications found within Pennsyvlania except those found within the banks of a watercourse.

3. Vegetation Condition Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Invasive Species Presence	**High Optimal:** No invasives present.		**Low Optimal:** <5% of the total AA contains invasive species.			**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.		**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.			**High Marginal:** >20% but less than 30% of the total AA contains invasive species.		**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.			> 50% of the total AA contains invasive species.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One Invasive Species identified in wetland AA.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.		**Low Optimal:** One vegetation stressor present within the AA boundary.			**High Suboptimal:** Two vegetation stressors present within the AA boundary.		**Low Suboptimal:** Three vegetation stressors present within the AA boundary.			**High Marginal:** Four vegetation stressors present within the AA boundary.		**Low Marginal:** Five vegetation stressors present within the AA boundary.			Greater than five vegetation stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments:

Maintaince on agricultural land.

a. Invasive Sub-Score:	11	**Total Score**
b. Vegetation Sub-Score:	14	**25**

CI = Total Score/40: **0.63**

4. Hydrologic Modification Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.		**Low Optimal:** One hydrologic stressor present within the AA boundary.			**High Suboptimal:** Two hydrologic stressors present within the AA boundary.		**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.			**High Marginal:** Four hydrologic stressors present within the AA boundary.		**Low Marginal:** Five hydrologic stressors present within the AA boundary.			Greater than five hydrologic stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: Maintaince on agricultural land.

Score:	**17**

CI = Total Score/20: **0.85**

5. Sediment Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.		**Low Optimal:** One sediment stressor present within the AA boundary.			**High Suboptimal:** Two sediment stressors present within the AA boundary.		**Low Suboptimal:** Three sediment stressors present within the AA boundary.			**High Marginal:** Four sediment stressors present within the AA boundary.		**Low Marginal:** Five sediment stressors present within the AA boundary.			Greater than five sediment stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: One stressor identified due to maintaince on agricultural land.

Score:	**17**

CI = Total Score/20: **0.85**

6. Water Quality Stressor Index

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No stressors identified.

	Condition Category																			
	Optimal					Suboptimal					Marginal					Poor				
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.				
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1

Comments: No stressors identified.

a. Eutrophication Score	20	**Total Score:**
b. Contaminant Score	20	**40**

CI = Total Score/40: **1.00**

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.

Overall Condition Index: **0.76**

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

Roadbed Worksheet

Project Name / Identifier			Date	Name(s) of Evaluator(s)
NFG FM100 Project			08/02/2018	T. Malecki, M. Groomer
Resource Identifier	**AA #**	**Lat (dd)**	**Long (dd)**	**Notes:**
WD207TMM	W142	41.835602	-78.12785	

Roadbeds: Record the number of occurrences by roadbed type and distance category. Multiply the number of occurrences by the weighting factors for each roadbed type and distance category then sum the total score for each distance category. The total scores for each distance category are then compared to the condition category descriptions.

Roadbed Type	Distance	Occurrences	Weighting Factor	Score	Distance	Occurrences	Weighting Factor	Score
≥ 4 Lane Paved	0-100 ft.		4	0	100-300 ft.		4	0
2 Lane Paved	0-100 ft.		2	0	100-300 ft.		2	0
1 Lane Paved	0-100 ft.		1	0	100-300 ft.		1	0
Gravel Road	0-100 ft.		1	0	100-300 ft.		1	0
Dirt Road	0-100 ft.		2	0	100-300 ft.	1	2	2
Railroad	0-100 ft.		2	0	100-300 ft.		2	0
Other Roadbeds	0-100 ft.		1, 2 or 4	0	100-300 ft.		1, 2 or 4	0
Total Scores:	0-100 ft.	0			100-300 ft.	2		

Road Comments: Dirt road for access to residential development within 300 feet of AA.

Pennsylvania Wetland Condition Level 2 Rapid Assessment

(Document No. 310-2137-002)

Pennsylvania Department of Environmental Protection

STRESSOR WORKSHEET

08/02/2018

	Occurrence in AA		
	Y	#'s	N
Vegetation Alteration			
Mowing	X		
Moderate livestock grazing (within one year)			X
Crops (annual row crops, within one year)			X
Selective tree harvesting/cutting (>50% removal, within 5 years)			X
Right-of-way clearing (mechanical or chemical)			X
Clear cutting or Brush cutting (mechanized removal of shrubs and saplings)	X		
Removal of woody debris			X
Aquatic weed control (mechanical or herbicide)			X
Excessive herbivory (deer, muskrat, nutria, carp, insects, etc.)			X
Plantation (conversion from typical natural tree species, including orchards)			X
Other:			X
Total Number:	**2**		
Hydrologic Modification			
Ditching, tile draining, or other dewatering methods			X
Dike/weir/dam			X
Filling/grading			X
Dredging/excavation			X
Stormwater inputs (culvert or similar concentrated urban runoff)			X
Microtopographic alterations (e.g., plowing, forestry bedding, skidder/ATV tracks)	X		
Dead or dying trees (trunks still standing) *			X
Stream alteration (channelization or incision)			X
Other:			X
Total Number:	**1**		
Sedimentation			
Sediment deposits/plumes			X
Eroding banks/slopes			X
Active construction (earth disturbance for development)			X
Active plowing (plowing for crop planting in past year)			X
Intensive livestock grazing (in one year, ground is >50% bare)			X
Active selective forestry harvesting (within one year)			X
Active forest harvesting (within two years, includes roads, borrow areas, pads, etc.)			X
Turbidity (moderate concentration of suspended solids in the water column, obvious sediment discharges)			X
Other:	X		
Total Number:	**1**		
Eutrophication			
Direct discharges from agricultural feedlots, manure pits, etc.			X
Direct discharges from septic or sewage treatment plants, fish hatcheries, etc.			X
Heavy or moderately heavy formation of algal mats			X
Other:			X
Total Number:	**0**		
Contaminant/Toxicity			
Severe vegetation stress (source unknown or suspected)			X
Obvious spills, discharges, plumes, odors, etc.			X
Acidic drainages (mined sites, quarries, road cuts)			X
Point discharges from adjacent industrial facilities, landfills, railroad yards, or comparable sites			X
Chemical defoliation (majority of herbaceous and woody plants affected, within one year)			X
Fish or wildlife kills or obvious disease or abnormalities observed			X
Excessive garbage/dumping			X
Other:			X
Total Number:	**0**		

Pennsylvania Wetland Condition Level 2 Rapid Assessment
(Document No. 310-2137-002)
Pennsylvania Department of Environmental Protection

Invasive Species Presence Worksheet

Are invasive species (from list) present at the site in any layer? YES NO

If listed species present, enter the percent areal coverage for each species below:

Species Code	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%	*Species Code*	<5%	≥ 5-20%	≥ 20 - 50%	≥ 50%
loja		20%							

Total % relative cover of all invasives, collectively on site: 20 %

Comments:

Common Invasives/Aggressives List

Code	Common Name	*Scientific*	Status	Code	Common Name	*Scientific*	Status
aggi2	Redtop	*Agrostis gigantea*	FACW	luhe	Water primrose	*Ludwigia hexapetala*	OBLW
algl2	European Alder	*Alnus glutinosa*	FACW	lyvu	Garden loosestrife	*Lysimachia vulgaris*	OBLW
arhi3	Carpetgrass	*Arthraxon hispidus*	FAC-	lysa2	Purple loosestrife	*Lythrum salicaria*	FACW
beth	Japanese barberry	*Berberis thunbergii*	FACW	maqu	European waterclover	*Marsilea quadrifolia*	OBLW
bevu	European barberry	*Berberis vulgaris*	FACW	mivi	Japanese stiltgrass	*Microstegium vimineum*	FAC
butom	Flowering Rush	*Butomus umbellatus*	OBLW	nami2	Water cress	*Nasturtium officinale*	OBLW
calli6	Pond water-starwort	*Callitriche stagnalis*	OBLW	pelo	Low smartweed	*Persicaria longiseta*	FACW
egde	Brazilian waterweed	*Egeria densa*	OBLW	phar	Reed canary grass	*Phalaris arundinacea*	FACW
elan	Russian olive	*Elaeagnus angustifolia*	FACU	phau7	Common Reed	*Phragmites australis*	OBLW
elum	Autumn olive	*Elaeagnus umbellata*	FACU	potr	Rough bluegrass	*Poa trivialis*	FACW
ephi	Hairy willow-herb	*Epilobium hirsutum*	FACW	pocu6	Japanese knotweed	*Polygonum (Faloia) cuspidatum*	FAC-
eppa5	Willow-herb	*Epilobium parviflorum*	FACW	pgpf	Mile-a-minute	*Polygonum perfoliatum*	FAC-
fasa	Giant knotweed	*Fallopia sachalinensis*	OBLW	puera	Kudzu-vine	*Pueraria lobata*	FAC-
gldi	Mudmats	*Glossostigma diandrum*	OBLW	pysp1	Apple/crabapple/pear	*Pyrus sp.*	FAC?
hola	Velvetgrass	*Holcus lanatus*	FAC	rhfr	Glossy Buckthorn	*Rhamnus frangula*	FAC-
huja	Japanese Hops	*Humulus japonicus*	FACU	romu	Multiflora rose	*Rosa multiflora*	FACU
loja	Japanese honeysuckle	*Lonicera japonica*	FAC-	tyan	Cattail (hybrid)	*Typha angustifolia*	OBLW
lomo	Morrow's honeysuckle	*Lonicera morrowii*	NI	tygl	Hybrid cattail	*Typha x glauca*	OBLW
lota	Tartarian honeysuckle	*Lonicera tatarica*					

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
102640	FM100 - Wildcat Hollow - Exisiting Conditions	9/1/2020	0	1	6	

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
Hannah Kalk & Zachary Stephens	41.719341	-78.558201	Address: Brights Rd, Smethport, PA 16749

General Comments: Riverine Emergent/Scrub-Shrub complex alongside Marvin Creek. This level 2 assessment represents all delineated wetlands (Wetlands 1-5) since the AA contains them all, were historically connected, and because the wetlands are currently functionally similar. The wetlands are surrounded by multiple roadways: County Route 6, Brites Road, a railroad, and Railroad Grade Road. The wetlands have been historically degraded by agricultural impacts, roadway and utility right of way installation, but is starting to move towards a more recovered state.

1. Wetland Zone of Influence Condition Index

	Condition Category																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.					**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.			**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.		**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.			**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.			**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.			**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	10%	10%	20%	25%	25%	10%	**Total Score:**
	Score:	16	14	12	9	6	3	
	Total Sub-score:	1.60	1.40	2.40	2.25	1.50	0.30	**9.45**

0.47

Comments: Sections of the zone of influence contain emergent and scrub-shrub wetland habitat, with some sections of forest. The Lower quality regions of the zone of influence contain maintained lawns, active hayfield, old field, and road/utility right of ways.

2. Roadbed Presence Index

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary				**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.			**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.		**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.			**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.			**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

Comments:

	Condition Categories																			CI = Total Score/20
	Optimal					Suboptimal					Marginal					Poor				
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary				**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.			**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.		**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.			**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.			**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.			**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.			**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.		
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	5	*** (0.67)**	7
b. Roadbed 100-300:	10	*** (0.33)**	3
		Total Score:	**10**

0.52

Comments: The AA is surrounded by multiple roadways: County Route 6, Brites Road, a railroad, and Railroad Grade Road.

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3. Vegetation Condition Index

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: Reed Canarygrass, cattail, multiflora rose, and bush honeysuckle found throughout the wetland site.

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.					**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments:

Vegetative disturbances within the AA include: right of ways, selective cutting, roadways, and other disturbances.

a. Invasive Sub-Score:	8	**Total Score**	**0.35**
b. Vegetation Sub-Score:	6	**14**	

4. Hydrologic Modification Index

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.					**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0.45**

Comments: Disturbances are mostly historical in nature, but current hydrologic disturbaces can be associated with the roadways and utility right of ways**.**

Score:	**9**

5. Sediment Stressor Index

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.					**CI = Total Score/20**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	**0.60**

Comments: Sediment stressors can be associated with the roadways and recent utility right of way installation as well as the historic removal of the scrub-shrub and forest vegetative regime.

Score:	**12**

6. Water Quality Stressor Index

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: No direct eutrophication stressors observed. However, roadways and railroad beds create some stress to the water quality and wetland habitat.

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.					**CI = Total Score/40**
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments:

Roadways and railroad beds create some stress to the wetland habitat.

a. Eutrophication Score	18	**Total Score:**	**0.90**
b. Contaminant Score	18	**36**	

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.55**

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Pennsylvania Department of Environmental Protection

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Project #	Project Name	Date	Proposed Impact Size (acres)	AA #	AA Size (acres)	
102640	FM100 - Wildcat Hollow - Post Restoration	9/1/2020	0	1	6	

Name(s) of Evaluator(s)	Lat (dd)	Long (dd)	Notes:
Hannah Kalk & Zachary Stephens	41.719341	-78.558201	Address: Brights Rd, Smethport, PA 16749

General Comments: Riverine Emergent/Scrub-Shrub complex alongside Marvin Creek. This level 2 assessment represents all delineated wetlands (Wetlands 1-5) since the AA contains them all, were historically connected, and because the wetlands are currently functionally similar. Addtionally, this assessment represents the anticipated condition of the wetlands post restoration at maturity.

1. Wetland Zone of Influence Condition Index

	Condition Category				
	Optimal	**Suboptimal**		**Marginal**		**Poor**	
Wetland Zone of Influence (300 foot area around AA perimeter)	ZOI area vegetation consists of a tree stratum present (diameter at breast height (dbh) > 3 inches) with greater than or equal to 60% tree canopy cover. Areas comprised of stream channels, wetlands (regardless of classification or condition) and lacustrine resources ≥ 10 acres are scored as optimal.	**High Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	**Low Suboptimal:** ZOI area vegetation consists of a tree stratum (dbh > 3 inches) present, with greater than or equal to 30% and less than 60% tree canopy cover with a maintained understory.	**High Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation with either a shrub layer or a tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover.	**Low Marginal:** ZOI area vegetation consists of non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, areas of hay production, and ponds or open water areas (< 10 acres). If trees are present, tree stratum (dbh > 3 inches) present, with less than 30% tree canopy cover with maintained understory.	**High Poor:** ZOI area vegetation consists of lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, pervious trails, recently seeded and stabilized, or other comparable condition.	**Low Poor:** ZOI area vegetation consists of impervious surfaces; mine spoil lands, denuded surfaces, row crops, active feed lots, impervious trails, or other comparable conditions.	**CI = Total Score/20**
SCORE	**20 19 18 17 16**	**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**		

1. Identify all applicable Condition Category areas within the wetland zone of influence using the descriptors above.
2. Estimate the % area within each condition category. Calculators are provided for you below.
3. Enter the % ZOI Area in decimal form (0.00) and Score for each category in the blocks below.

Total Score = SUM(%Areas*Scores)

	Condition Category:							
Scoring:	% ZOI Area:	25%	20%	15%	20%	10%	5%	**Total Score:**
	Score:	19	15	13	10	8	5	
	Total Sub-score:	4.75	3.00	1.95	2.00	0.80	0.25	**12.75**

0.64

Comments: Sections of the zone of influence contain emergent and scrub-shrub wetland habitat, with some sections of forest. The Lower quality regions of the zone of influence contain maintained lawns, active hayfield, old field, and road/utility right of ways.

2. Roadbed Presence Index

	Condition Categories									
	Optimal		**Suboptimal**		**Marginal**		**Poor**		
a. Roadbed Presence (within 0 - 100 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 0-100 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 0-100 foot distance of the AA boundary is greater than 12.	
SCORE	**20 19 18 17 16**		**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**		

Comments:

	Condition Categories									
	Optimal		**Suboptimal**		**Marginal**		**Poor**		
b. Roadbed Presence (within 100 - 300 foot Wetland ZOI distance)	**High Optimal:** No roadbeds present within 100 - 300 feet of the AA boundary	**Low Optimal:** Roadbed presence score within 100 - 300 feet of the AA boundary equal to or less than 2.	**High Suboptimal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 2 but equal to or less than 4.	**Low Suboptimal:** Roadbed presence score within 100 - 300 feet AA boundary is greater than to 4 but less than or equal to 6.	**High Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 6 but less than or equal to 8.	**Low Marginal:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 8 but less than or equal to 10.	**High Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than to 10 but less than or equal to 12.	**Low Poor:** Roadbed presence score within 100 - 300 feet of the AA boundary is greater than 12.	**CI = Total Score/20**
SCORE	**20 19 18 17 16**		**15 14 13 12 11**		**10 9 8 7 6**		**5 4 3 2 1**		

	Condition Score	Weighting	Sub-Scores
a. Roadbed 0-100:	5	*** (0.67)**	7
b. Roadbed 100-300:	10	*** (0.33)**	3
		Total Score:	**10**

0.52

Comments: The AA is surrounded by multiple roadways: County Route 6, Brites Road, a railroad, and Railroad Grade Road.

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3. Vegetation Condition Index

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
a. Invasive Species Presence	**High Optimal:** No invasives present.			**Low Optimal:** <5% of the total AA contains invasive species.		**High Suboptimal:** >5% but less than 10% of the total AA contains invasive species.			**Low Suboptimal:** >10% but less than 20% of the total AA contains invasive species.		**High Marginal:** >20% but less than 30% of the total AA contains invasive species.			**Low Marginal:** >30% but less than 50% of the total AA contains invasive species.		> 50% of the total AA contains invasive species.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: Invasive species have been controlled and a native vegetative regime has been implemented.

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
b. Vegetation Stressor Presence	**High Optimal:** No vegetation stressors present within the AA boundary.			**Low Optimal:** One vegetation stressor present within the AA boundary.		**High Suboptimal:** Two vegetation stressors present within the AA boundary.			**Low Suboptimal:** Three vegetation stressors present within the AA boundary.		**High Marginal:** Four vegetation stressors present within the AA boundary.			**Low Marginal:** Five vegetation stressors present within the AA boundary.		Greater than five vegetation stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments:

The site has been revegetated and has been protected from outside disturbances with the exception of the utility right of way disturbances which are beyond the limits of the PRM.

a. Invasive Sub-Score:	19	**Total Score**	**0.95**
b. Vegetation Sub-Score:	19	**38**	

CI = Total Score/40

4. Hydrologic Modification Index

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
Hydrologic Modification Stressor Presence	**High Optimal:** No hydrologic stressors present within the AA boundary.			**Low Optimal:** One hydrologic stressor present within the AA boundary.		**High Suboptimal:** Two hydrologic stressors present within the AA boundary.			**Low Suboptimal:** Three hydrologic stressors present within the AA boundary.		**High Marginal:** Four hydrologic stressors present within the AA boundary.			**Low Marginal:** Five hydrologic stressors present within the AA boundary.		Greater than five hydrologic stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: By increasing the density of vegetation, the PRM has lowered the influence outside disturbance on the hydrology.

Score:	**16**	**0.80**

CI = Total Score/20

5. Sediment Stressor Index

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
Sediment Stressor Presence	**High Optimal:** No sediment stressors present within the AA boundary.			**Low Optimal:** One sediment stressor present within the AA boundary.		**High Suboptimal:** Two sediment stressors present within the AA boundary.			**Low Suboptimal:** Three sediment stressors present within the AA boundary.		**High Marginal:** Four sediment stressors present within the AA boundary.			**Low Marginal:** Five sediment stressors present within the AA boundary.		Greater than five sediment stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: By increasing the density of vegetation, the PRM has lowered the influence outside sedimentation.

Score:	**16**	**0.80**

CI = Total Score/20

6. Water Quality Stressor Index

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
a. Eutro-phication Stressor Presence	No eutrophication stressors present within the AA boundary.					One eutrophication stressors present within the AA boundary.					Two eutrophication stressors present within the AA boundary.					Three eutrophication stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments: The PRM increased the water quality of the area due to wetland enhancement activities.

	Condition Category																				
	Optimal					**Suboptimal**					**Marginal**					**Poor**					
b. Contaminant / Toxicity Stressor Presence	No contaminant / toxicity stressors present within the AA boundary.					One contaminant / toxicitystressors present within the AA boundary.					Two contaminant / toxicity stressors present within the AA boundary.					Three contaminant / toxicity stressors present within the AA boundary.					
SCORE	**20**	**19**	**18**	**17**	**16**	**15**	**14**	**13**	**12**	**11**	**10**	**9**	**8**	**7**	**6**	**5**	**4**	**3**	**2**	**1**	

Comments:

Roadways and railroad beds create some stress to the wetland habitat.

a. Eutrophication Score	19	**Total Score:**	**0.95**
b. Contaminant Score	19	**38**	

CI = Total Score/40

Overall Wetland Level 2 Condition Score: Sum all six of the Condition Indexes and divide by 6 to calculate the overall condition score.	**Overall Condition Index:**	**0.78**

APPENDIX E
PNDI RECEIPT

1. PROJECT INFORMATION

Project Name: **Wildcat Hollow Wetland Enhancement Site**
Date of Review: **9/9/2020 02:58:56 PM**
Project Category: **Habitat Conservation and Restoration, Wetland Restoration, Wetland Creation, or Wetland Enhancement**
Project Area: **28.33 acres**
County(s): **McKean**
Township/Municipality(s): **HAMLIN**
ZIP Code: **16735; 16749**
Quadrangle Name(s): **HAZEL HURST**
Watersheds HUC 8: **Upper Allegheny**
Watersheds HUC 12: **Marvin Creek**
Decimal Degrees: **41.718670, -78.557155**
Degrees Minutes Seconds: **41° 43' 7.2118" N, 78° 33' 25.7573" 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.

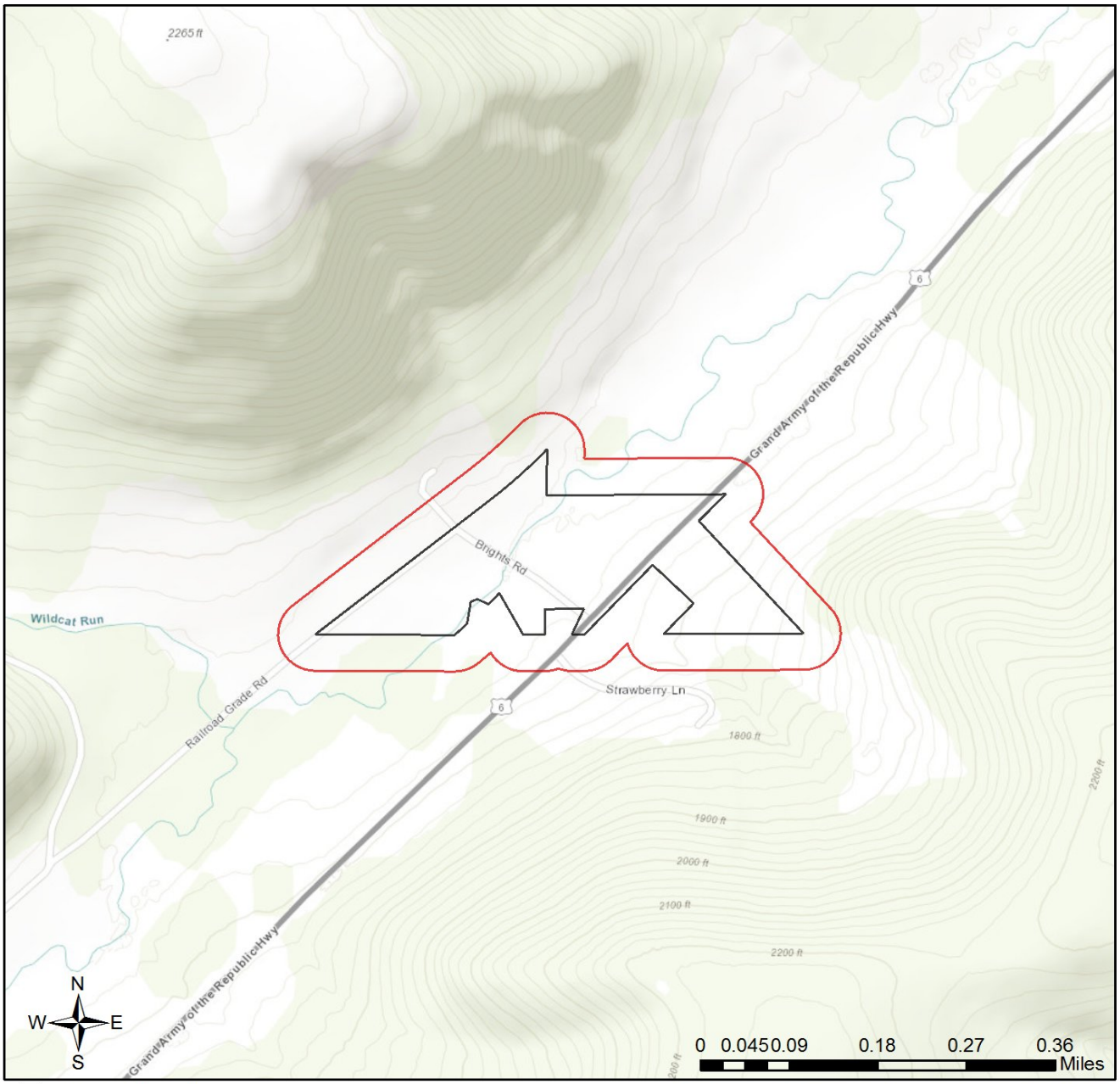
Wildcat Hollow Wetland Enhancement Site

Project Boundary

Buffered Project Boundary

Service Layer Credits: Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community
Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China

Wildcat Hollow Wetland Enhancement Site



Project Boundary

Buffered Project Boundary

Service Layer Credits: Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

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
Email: IR1_ESPenn@fws.gov
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

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Phone: (309) 269-6021 Fax: ( )
Email: Hkalk@res.us

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.

Hannah Kalk 9/9/2020

applicant/project proponent signature date