

**APPENDIX C
Trenchless Area Practicable Alternative Assessment**

Trenchless Area (TA #)	Coordinates (Latitude & Longitude)	County	EV Wetlands	Other Wetlands	HQ and EV Streams	Other Streams	Crossing Type	PADEP Comment	Comment ID	Trenchless Area Narratives
Washington										
TA-009	40.23578, -80.09231	Washington		W43		S132	HDD			Based on Project planning efforts, a horizontal directional drill (HDD) construction method is proposed in the vicinity of this TA. A Trenchless Construction Feasibility Analysis (TCFA) was conducted for this TA (Appendix B) to further evaluate the potential extension of this HDD to further avoid or minimize impacts on "Other" wetlands (W43) and other waterbodies (S132). This assessment determined that, based on current technology and available information, an approximately 725-foot-long extension of the proposed HDD across this TA would be required to avoid these resources, and was determined to be potentially technically feasible. Although an HDD extension would further avoid or minimize potential Project impacts to wetlands (and waterbodies), the logistical constraints (related to the additional temporary workspace area required for the HDD drill rig and construction equipment) and construction costs associated with extension of the HDD crossing method in this TA was considered not practicable, and therefore was not adopted as part of the proposed construction method.
Allegheny										
TA-016	40.23007, -79.96639	Allegheny		W38			HDD			Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD workspace to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (W38). This assessment determined that, based on current technology and available information, reconfiguration of this HDD workspace was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the amount of workspace available within the permanent ROW to support an HDD in this vicinity. Based on these logistical constraints, reconfiguration of the proposed HDD workspace was considered not practicable, and therefore was not adopted as part of the proposed construction method.
Westmoreland										
TA-023	40.23608, -79.76993	Westmoreland		W64			HDD PB			Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD workspace to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (W64). This assessment determined that, based on current technology and available information, reconfiguration of this HDD workspace was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the additional temporary workspace required for the HDD pullback. Based on these logistical constraints, reconfiguration of the proposed HDD workspace was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-030	40.29637, -79.65087	Westmoreland		W53		S186	Bore	The crossing of Wetland W53 is described on the JPA plan sheets as bore/travel lane. The impacts table and E&S Plans do not show a travel lane here. Please review your application for accuracy and consistency and revise the correct documents to ensure this crossing is accurately described and fully assessed. 25 Pa. Code §§105.13(e)(1)(i) and 105.13(e)(1)(x)	WE 23.e	Based on Project planning efforts, a conventional auger boring (CAB) construction method is proposed in the vicinity of this TA which includes travel lanes that crosses resources. Per PADEP comment, a TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this CAB travel lane to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (W53) and other waterbodies (S186). This assessment determined that, based on current technology and available information, reconfiguration of this CAB travel lane was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the access required to implement the CAB under this TA. Based on these logistical constraints, reconfiguration of the proposed CAB travel lane was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-043	40.42606, -79.55288	Westmoreland		P34			Travel LOD			Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD travel lane to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (P34). This assessment determined that, based on current technology and available information, reconfiguration of this HDD travel lane was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the access required to implement the HDD under this TA. Based on these logistical constraints, reconfiguration of the proposed HDD travel lane was considered not practicable, and therefore was not adopted as part of the proposed construction method.

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TA-044	40.42595, -79.55224	Westmoreland		Q7	S-Q7	S-Q8	HDD			Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD workspace to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (Q7), HQ and EV waterbodies (S-Q7) and other waterbodies (S-Q8). This assessment determined that, based on current technology and available information, reconfiguration of this HDD workspace was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the additional temporary workspace required to implement an HDD under this TA. Based on these logistical constraints, reconfiguration of the proposed HDD workspace was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-069	40.44085, -79.36347	Westmoreland		P14		S-P20	HDD			Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD workspace to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (P14), and other waterbodies (S-P20). This assessment determined that, based on current technology and available information, reconfiguration of this HDD workspace was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the additional temporary workspace required to implement an HDD under this TA. Based on these logistical constraints, reconfiguration of the proposed HDD workspace was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-071	40.44362, -79.32688	Westmoreland		P7			Bore			Based on Project planning efforts, a CAB construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this CAB workspace to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (P7). This assessment determined that, based on current technology and available information, reconfiguration of this CAB workspace was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the workspace required to implement a CAB under this TA. Based on these logistical constraints, reconfiguration of the proposed CAB workspace was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-074	40.44485, -79.303098	Westmoreland		N28		S-N44	HDD			Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD workspace to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (N28) and other waterbodies (S-N44). This assessment determined that, based on current technology and available information, reconfiguration of this HDD workspace was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to potential infeasibility of the geometry to conduct an HDD under this TA, insufficient workspace available for the HDD pullback and the additional temporary workspace, and potentially insufficient access for the travel lane required to HDD under this TA. Based on these logistical constraints, reconfiguration of the proposed HDD workspace was considered not practicable, and therefore was not adopted as part of the proposed construction method.
Indiana										
TA-075	40.4464, -79.2911	Indiana		J51			HDD			Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD workspace to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (J51). This assessment determined that, based on current technology and available information, reconfiguration of this HDD workspace was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the workspace required for the drill rig and equipment to access the pipeline construction right-of-way. Based on these logistical constraints, reconfiguration of the proposed HDD workspace was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-077	40.4502, -79.27877	Indiana		P2			Bore			Based on Project planning efforts, a CAB construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this CAB travel lane to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (P2). This assessment determined that, based on current technology and available information, reconfiguration of this CAB travel lane was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to access required to implement the CAB under this TA. Based on these logistical constraints, reconfiguration of the proposed CAB travel lane was considered not practicable, and therefore was not adopted as part of the proposed construction method.

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TA-087	40.43735, -79.12511	Indiana		N56, N57		S-N85	HDD			Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD travel lane to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (N56 and N57) and other waterbodies (S-N85). This assessment determined that, based on current technology and available information, reconfiguration of this HDD travel lane was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the access required to implement the HDD under this TA. Based on these logistical constraints, reconfiguration of the proposed HDD travel lane was considered not practicable, and therefore was not adopted as part of the proposed construction method.
Cambria										
TA-124	40.41654, -78.87388	Cambria		N27			HDD			Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD travel lane to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (N27). This assessment determined that, based on current technology and available information, reconfiguration of this HDD travel lane was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the access required to implement the HDD under this TA. Based on these logistical constraints, reconfiguration of the proposed HDD travel lane was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-125	40.41639, -78.87297	Cambria		N26		S-N42	HDD			Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD travel lane to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (N26) and other waterbodies (S-N42). This assessment determined that, based on current technology and available information, reconfiguration of this HDD travel lane was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the access required to implement the HDD under this TA. Based on these logistical constraints, reconfiguration of the proposed HDD travel lane was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-126	40.41628, -78.87228	Cambria		N25		S-N41	HDD			Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD travel lane to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (N25) and other waterbodies (S-N41). This assessment determined that, based on current technology and available information, reconfiguration of this HDD travel lane was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the access required to implement the HDD under this TA. Based on these logistical constraints, reconfiguration of the proposed HDD travel lane was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-135	40.42704, -78.80704	Cambria		O17			Bore			Based on Project planning efforts, a CAB construction method is proposed in the vicinity of this TA. Per PADEP comment, a TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this CAB travel lane to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (O17). This assessment determined that, based on current technology and available information, reconfiguration of this CAB travel lane was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the workspace required to access and implement the CAB under this TA. Based on these logistical constraints, reconfiguration of the proposed CAB travel lane was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-146	40.44899, -78.71248	Cambria		N1		S-N1	Bore			Based on Project planning efforts, a CAB construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this CAB travel lane to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (N1) and other waterbodies (S-N1). This assessment determined that, based on current technology and available information, reconfiguration of this CAB travel lane was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the workspace required to access and implement the CAB under this TA. Based on these logistical constraints, reconfiguration of the proposed CAB travel lane was considered not practicable, and therefore was not adopted as part of the proposed construction method.

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TA-151	40.45267, -78.68473	Cambria		N18		S-N34	HDD	Please note that if your project will adversely affect these wetlands, you are required to consider, among other things, ways to avoid or minimize these impacts, and will be required to compensate for unavoidable impacts to these wetlands. 25 Pa. Code §§105.18a(b)(2), (3) and (7)	CA 14.k.iv	Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. Per PADEP comment, a TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD travel lane to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (N18) and other waterbodies (S-N34). This assessment determined that, based on current technology and available information, reconfiguration of this HDD travel lane was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the access required to implement the HDD under this TA. Based on these logistical constraints, reconfiguration of the proposed HDD travel lane was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-172	40.44412, -78.59494	Cambria		BB147		S-BB116	Bore			Based on Project planning efforts, a CAB construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this CAB workspace to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (BB147) and other waterbodies (S-BB116). This assessment determined that, based on current technology and available information, reconfiguration of this CAB workspace was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the workspace required to implement a CAB in this TA. Based on these logistical constraints, reconfiguration of the proposed CAB workspace was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-176	40.42538, -78.5805	Cambria		L65		S-L92	Bore			Based on Project planning efforts, a CAB construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this CAB travel lane to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (L65) and other waterbodies (S-L92). This assessment determined that, based on current technology and available information, reconfiguration of this CAB travel lane was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the workspace required for access (travel lane) to implement the CAB under this TA. Based on these logistical constraints, reconfiguration of the proposed CAB travel lane was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-443	40.43576, -78.76948	Cambria	CC17			S-CC8	HDD	Please note that if your project will adversely affect these wetlands, you are required to consider, among other things, ways to avoid or minimize these impacts, and will be required to compensate for unavoidable impacts to these wetlands. 25 Pa. Code §§105.18a(b)(2), (3) and (7)	CA 14.k.iv	Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. Per PADEP comment, a Trenchless Construction Feasibility Analysis was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD travel lane to further avoid or minimize proposed temporary and minor impacts on "EV" wetlands (CC17) and other waterbodies (S-CC8). This assessment determined that, based on current technology and available information, reconfiguration of this HDD travel lane was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the access required to implement the HDD in this TA. Based on these logistical constraints, reconfiguration of the proposed CAB travel lane was considered not practicable, and therefore was not adopted as part of the proposed construction method.
Blair										
TA-196	40.41223, -78.37209	Blair		BB159			HDD			Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD workspace to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (BB159). This assessment determined that, based on current technology and available information, reconfiguration of this HDD workspace was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the tree clearing required in the area and the workspace required to access and implement the HDD. Based on these logistical constraints, reconfiguration of the proposed HDD workspace was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-204	40.44466, -78.324636	Blair	L54			S-L72	HDD			Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD workspace to further avoid or minimize proposed temporary and minor impacts on "EV" wetlands (L54). This assessment determined that, based on current technology and available information, reconfiguration of this HDD workspace was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the topography and elevation change not being conducive to HDD in the area, the geometry not feasible for the HDD, and insufficient pullback and additional temporary workspace, as well as insufficient access available for the travel lane required to implement an HDD under this TA. Based on these logistical constraints, reconfiguration of the proposed HDD workspace was considered not practicable, and therefore was not adopted as part of the proposed construction method.

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TA-434	40.43461, -78.29763	Blair	M24				HDD			Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD workspace to further avoid or minimize proposed temporary and minor impacts on "EV" wetlands (M24). This assessment determined that, based on current technology and available information, reconfiguration of this HDD workspace was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the workspace required to implement an HDD under this TA. Based on these logistical constraints, reconfiguration of the proposed HDD workspace was considered not practicable, and therefore was not adopted as part of the proposed construction method.
Huntingdon										
TA-218	40.39393, -78.12028	Huntingdon		Y6, Y7, Y9, CC28		S-Y5, S-Y6, S-Y7	HDD/ Open Cut	It appears that impacts to streams S-Y5, S-Y6, S-Y7 and wetlands Y6, Y7, and CC28 could be avoided and minimized by locating the proposed pipelines further North. Revise the application accordingly to avoid and minimize impacts, or provide a detailed analysis of alternative routes, designs and methods to avoid and minimize these impacts which documents and provides evidence that other routes and designs would not further avoid or minimize impacts. [25 Pa. Code §§105.13(e)(1)(viii), 105.14(b)(7)]	HU 157.h.	Per PADEP comment, a reroute to the north would not be in compliance with state and federal co-location guidance, would result in a new "greenfield" routing alignment, and in turn new and permanent impacts on previously undisturbed land, land use encumbrance, and site-specific and contribution to Project-wide cumulative impacts on land, environmental, and community resources. Additionally, this routing increases the amount of new and permanent forested land fragmentation, including impairment of forested ecosystem functions and values, watershed/water quality values, and availability of contiguous forest habitat for interior wildlife species and migratory birds protected pursuant to the Migratory Bird Treaty Act. For these reasons, a reroute to the north (or any route that further deviates from the Proposed route to achieve a dry or drier alignment) would result in new, permanent, site-specific and contribute to significant Project-wide cumulative impacts on land, environmental, forested, and community resources; as well as result in site-specific and cumulatively contribute to Project-wide suboptimal pipeline construction and operation and increased cost; and thus was not selected as the proposed route.
TA-224	40.35372, -77.9899	Huntingdon		BB127		S-BB97, S-M21	Bore			Based on Project planning efforts, a CAB construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this CAB travel lane to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (BB127) and other waterbodies (S-BB97 and S-M21). This assessment determined that, based on current technology and available information, reconfiguration of this CAB travel lane was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the workspace required to access and implement the CAB under this TA. Based on these logistical constraints, reconfiguration of the proposed CAB travel lane was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-241	40.32353, -77.80108	Huntingdon		M3		S-M3	Bore			Based on Project planning efforts, a CAB construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this CAB workspace to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (M3) and other waterbodies (S-M3). This assessment determined that, based on current technology and available information, reconfiguration of this CAB workspace was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to workspace required to travel through and/or around the wetland for access to the ROW. Based on these logistical constraints, reconfiguration of the proposed CAB workspace was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-251	40.31311, -77.74889	Huntingdon		K68		S-K91, S-K92	HDD	The Alternatives Analysis states that a combination of open cutting and HDD was determined to be the most feasible alternative for crossing wetlands K67 and K68; however, no details, documentation, or evidence has been provided on why this is the least damaging practicable alternative. It appears that lengthening the HDD to cross both wetland K67 and K68 and not open cut wetland K67 would further minimize impacts. Revise the application accordingly to avoid and minimize impacts, or provide a detailed analysis of alternative routes, designs and methods to avoid and minimize these impacts which documents and provides evidence that other routes and designs would not further avoid or minimize impacts. This should include specific details and quantification which documents that other routes and designs would not further avoid or minimize impacts[25 Pa. Code 0105.13(e)(1)640, 105.14(b)(7) 105.18a]	HU 157.t.	Per PADEP comment, a TCFA was conducted for extending the HDD crossing wetland K68. Results of that assessment are discussed in the Wetland-Specific Practicable Alternatives Analysis for CA-252. Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD travel lane to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (K68) and other waterbodies (S-K91 and S-K92). This assessment determined that, based on current technology and available information, reconfiguration of this HDD travel lane was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to accessibility required to implement the HDD under this TA for safe installation of the pipeline. Based on these logistical constraints, reconfiguration of the proposed HDD travel lane was considered not practicable, and therefore was not adopted as part of the proposed construction method.

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Cumberland										
TA-287	40.24565, -77.3838	Cumberland		I61		S-I85	Bore			Based on Project planning efforts, a CAB construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this CAB workspace to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (I61) and other waterbodies (S-I85). This assessment determined that, based on current technology and available information, reconfiguration of this CAB workspace was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the workspace required to travel through and/or around the wetland for access to the ROW. Based on these logistical constraints, reconfiguration of the proposed CAB workspace was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-295	40.24502, -77.34939	Cumberland		W177		S-BB120	HDD			Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD travel lane to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (W177) and other waterbodies (S-BB120). This assessment determined that, based on current technology and available information, reconfiguration of this HDD travel lane was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the access required to implement the HDD under this TA. Based on these logistical constraints, reconfiguration of the proposed HDD travel lane was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-300	40.24329, -77.31674	Cumberland		J31		S-J34, S-J35	HDD			Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD travel lane to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (J31) and other waterbodies (S-J34 and S-J35). This assessment determined that, based on current technology and available information, reconfiguration of this HDD travel lane was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the access required to implement the HDD under this TA. Based on these logistical constraints, reconfiguration of the proposed HDD travel lane was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-322	40.24178, -77.18722	Cumberland	J11				HDD			Based on Project planning efforts, a HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD workspace to further avoid or minimize proposed temporary and minor impacts on "EV" wetlands (J11). This assessment determined that, based on current technology and available information, reconfiguration of this HDD workspace was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the additional temporary workspace required for the HDD pullback. Based on these logistical constraints, reconfiguration of the proposed HDD workspace was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-331	40.19236, -76.9386	Cumberland		I26, I27		S-I41, S-I43	HDD			Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD workspace to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (I26 and I27) and other waterbodies (S-I41 and S-I43). This assessment determined that, based on current technology and available information, reconfiguration of this HDD workspace was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the workspace required to travel through and/or around the wetland for access to the ROW, and the workspace constraints associated with an existing private drive. Based on these logistical constraints, reconfiguration of the proposed HDD workspace was considered not practicable, and therefore was not adopted as part of the proposed construction method.
York										
TA-335	40.19144, -76.84119	York		I20		S-I25, S-I26	Bore			Based on Project planning efforts, a CAB construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this CAB workspace to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (I20) and other waterbodies (S-I25 and S-I26). This assessment determined that, based on current technology and available information, reconfiguration of this CAB workspace was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to workspace required to travel through and/or around the wetland for access to the ROW. Based on these logistical constraints, reconfiguration of the proposed CAB workspace was considered not practicable, and therefore was not adopted as part of the proposed construction method.

**APPENDIX C
Trenchless Area Practicable Alternative Assessment**

Trenchless Area (TA #)	Coordinates (Latitude & Longitude)	County	EV Wetlands	Other Wetlands	HQ and EV Streams	Other Streams	Crossing Type	PADEP Comment	Comment ID	Trenchless Area Narratives
TA-339	40.19239, -76.81488	York		H51		S-H61, S-H62	Bore			Based on Project planning efforts, a CAB construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this CAB travel lane to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (H51). This assessment determined that, based on current technology and available information, reconfiguration of this CAB travel lane was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to access required to implement the CAB under this TA. Based on these logistical constraints, reconfiguration of the proposed CAB travel lane was considered not practicable, and therefore was not adopted as part of the proposed construction method.
Dauphin										
TA-348	40.22065, -76.72217	Dauphin		S2			HDD PB			Based on Project planning efforts, a HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD workspace to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (S2). This assessment determined that, based on current technology and available information, reconfiguration of this HDD workspace was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the workspace required to implement an HDD under this TA. Based on these logistical constraints, reconfiguration of the proposed HDD workspace was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-352	40.23162, -76.68057	Dauphin		B57, B56		S-B60	HDD			Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this HDD workspace to further avoid or minimize proposed temporary and minor impacts on "EV" wetlands (B56), "Other" wetlands (B57), and other waterbodies (S-B60). This assessment determined that, based on current technology and available information, reconfiguration of this HDD workspace was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to the workspace required to implement an HDD under this TA. Based on these logistical constraints, reconfiguration of the proposed HDD workspace was considered not practicable, and therefore was not adopted as part of the proposed construction method.
Lebanon										
TA-371	40.28676, -76.32992	Lebanon	CJ2			S-A25	Bore	It appears the HDD construction installation of the pipeline's could be extended to also install the pipeline's via HDD across wetlands A12 and A13 to minimize impacts. Revise the application accordingly to avoid and minimize impacts, or provide a detailed analysis of alternative routes, designs and methods to avoid and minimize these impacts which documents and provides evidence that other routes and designs would not further avoid or minimize impacts. [25 Pa Code §§105.13(e)(1)(viii), 105.14(b)(7), 105.18a]	LE114.I	Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. Per PADEP comment, a Trenchless Construction Feasibility Analysis was conducted for this TA (Appendix B) to further evaluate the potential extension of this HDD to further avoid or minimize impacts on "EV" wetlands (CJ2) and other waterbodies (S-A25). This assessment determined that, based on current technology and available information, an approximately 700-foot-long extension of the proposed HDD across this TA would be required to avoid these resources, and was determined not to be potentially technically feasible. Although an HDD extension would further avoid or minimize potential Project impacts to wetlands (and waterbodies), the logistical constraints related to concerns regarding the suitability of the topography to support an HDD, the insufficient amount of additional temporary workspace available (including for an HDD pullback), and construction costs associated with extension of the HDD crossing method in this CA was considered not practicable, and therefore was not adopted as part of the proposed construction method.
Lancaster										
TA-379	40.28262, -76.15811	Lancaster	A56			S-A87	Bore			Based on Project planning efforts, a CAB construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this CAB travel lane to further avoid or minimize proposed temporary and minor impacts on "EV" wetlands (A56). This assessment determined that, based on current technology and available information, reconfiguration of this CAB travel lane was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to access required to implement the CAB under this TA. Based on these logistical constraints, reconfiguration of the proposed CAB travel lane was considered not practicable, and therefore was not adopted as part of the proposed construction method.

**APPENDIX C
Trenchless Area Practicable Alternative Assessment**

Trenchless Area (TA #)	Coordinates (Latitude & Longitude)	County	EV Wetlands	Other Wetlands	HQ and EV Streams	Other Streams	Crossing Type	PADEP Comment	Comment ID	Trenchless Area Narratives
TA-380	40.28233, -76.15263	Lancaster		B72			Bore			Based on Project planning efforts, a CAB construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this CAB travel lane to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (B48). This assessment determined that, based on current technology and available information, reconfiguration of this CAB travel lane was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to access required to implement the CAB under this TA. Based on these logistical constraints, reconfiguration of the proposed CAB travel lane was considered not practicable, and therefore was not adopted as part of the proposed construction method.
Berks										
TA-394	40.30699, -76.05985	Berks		B48			Bore			Based on Project planning efforts, a CAB construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this CAB workspace to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (B48). This assessment determined that, based on current technology and available information, reconfiguration of this CAB workspace was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to workspace required to travel through and/or around the wetland for access to the ROW. Based on these logistical constraints, reconfiguration of the proposed CAB workspace was considered not practicable, and therefore was not adopted as part of the proposed construction method.
TA-411	40.166597, -75.85782	Berks		BA10			HDD/Open Cut	It appears that impacts to wetland BA10 could be minimized by extending the HDD to install the pipes by HDD underneath this wetland. Revise the application accordingly to avoid and minimize impacts, or provide a detailed analysis of alternative routes, designs and methods to avoid and minimize these impacts which documents and provides evidence that other routes and designs would not further avoid or minimize impacts. [25 Pa. Code §§105.13(e)(1)(viii), 105.14(b)(7), 105.18a(a)]	BE 112.ee	Based on Project planning efforts, an HDD construction method is proposed in the vicinity of this TA. A site-specific assessment was conducted for this TA to further evaluate the potential extension of this HDD to further avoid or minimize impacts on "Other" wetlands (BA10). This assessment determined that, based on current technology and available information, an approximately 120-foot-long extension of the proposed HDD across this CA would be required to avoid this resource, and was determined to be technically feasible. Although an HDD extension would further avoid or minimize potential Project impacts to this wetland, the logistical constraints (limited additional temporary workspace area), construction costs associated with extension of the HDD crossing method in this CA and for the move around, increased safety risks to project personnel and the public, increased dust, noise, and secondary road impacts, as well as increased construction duration was considered not practicable, and therefore was not adopted as part of the proposed construction method.
Chester										
TA-417	40.12466, -75.79212	Chester		B15	S-B15		Bore			Based on Project planning efforts, a CAB construction method is proposed in the vicinity of this TA. A TCFA was conducted for this TA (Appendix B) to further assess potential reconfiguration of this CAB workspace to further avoid or minimize proposed temporary and minor impacts on "Other" wetlands (B15) and other waterbodies (S-B15). This assessment determined that, based on current technology and available information, reconfiguration of this CAB workspace was not technically feasible or practicable due to certain site-specific logistical constraints. These constraints include, but are not necessarily limited to workspace required to travel through and/or around wetland for access to the ROW. Based on these logistical constraints, reconfiguration of the proposed CAB workspace was considered not practicable, and therefore was not adopted as part of the proposed construction method.