APPENDIX P -1

RESOURCE-SPECIFIC AVOIDANCE AND MINIMIZATION MEASURES

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Resource-Specific Avoidance and Minimization Measures
Wyoming County

Resource Type (Stream or Wetland)	Resource Name	Resource ID	MP	Chapter 93 Classification, Wetland Classification	Stream Type (Perennial, Intermittent, Ephemeral)	Stream Trout Status (Class A Wild Trout, Wild Trout, Trout Stocked)	Wetland (Cowardin Classification)	Limits of Disturbance (LOD) Adjustments	Field Routing Adjustments within 600-foot Wide Corridor*
Wetland	N/A	W-T57-18002-2	M-0088 2.61	None	N/A	N/A	PEM	***N/A***	***This feature is no longer impacted based on incorporation of CPL North Alternative 13.***
Stream	UNT to Whitelock Creek (WW-T54-18002B)	WW-T54-18002B	M-0088 3.16	CWF, MF	Perennial	Wild Trout Waters	R3	***N/A***	***This feature is no longer impacted based on incorporation of CPL North Alternative 13.***
Stream	UNT to Whitelock Creek (WW-T54-18002A)	WW-T54-18002A	M-0088 3.17	CWF, MF	Intermittent	Wild Trout Waters	R4	***N/A***	***This feature is no longer impacted based on incorporation of CPL North Alternative 13.***
Stream (Whitelock Creek)	Whitelock Creek (WW-T54-18002)	WW-T54-18002	M-0088 3.18	CWF, MF	Perennial	Wild Trout Waters	R3	***N/A***	***This feature is no longer impacted based on incorporation of CPL North Alternative 13.***
Wetland	N/A	W-T54-18005	M-0088 3.19	EV	N/A	N/A	PFO	***N/A***	***This feature is no longer impacted based on incorporation of CPL North Alternative 13.***
Wetland	N/A	W-T54-18006-3 / W-T54-18006-4 /	M-0088 3.74	None	N/A	N/A	PEM	***N/A***	***This feature is no longer impacted based on incorporation of CPL North Alternative 13.***
Stream	UNT to Whitelock Creek (WW-T54-18003)	WW-T54-18003	M-0088 3.80	CWF, MF	Perennial	Wild Trout Waters	R3	***N/A***	***This feature is no longer impacted based on incorporation of CPL North Alternative 13.***
Wetland	N/A	W-T54-18007C / W-T54-18007C-1	M-0088 3.84	None	N/A	N/A	PFO	***N/A***	***This feature is no longer impacted based on incorporation of CPL North Alternative 13.***
Wetland	***N/A***	***W-T76-18009A-1 / W-T76-18009A-2 / W-T76-18009A-3 / W-T76-18009C-1***	***M-0179 1.21***	***EV***	***N/A***	***N/A***	***PEM, PFO***	***LOD has been reduced to 75' to minimnize impacts to W-T76-18009A-1 / W-T76-18009A-2 / W-T76-18009A-3 / W-T76-18009C-1.***	***The pipeline was routed in this location to collocate with an existing pipeline ROW, cross the wetland at a roughly perpindicular angle along the eastern margin of the system, and avoid a much larger wetland and stream system to the west of the current alignment.***
Stream	***UNT to Leonard Creek (WW-T76-18005A)***	***WW-T76-18005A***	***M-0179 1.23***	***HQ-CWF, MF***	***Perennial***	***Wild Trout Waters, Trout Stocked Stream***	***R3***	***LOD has been reduced to 75' to minimnize impacts to WW-T76-18005A.***	***The pipeline was routed in this location to collocate with an existing pipeline ROW and to cross the stream at a perpindicular angle.***
Wetland	***N/A***	***W-T76-18007***	***M-0179 1.35***	***None***	***N/A***	***N/A***	***PEM***	***W-T76-18007 does not extend across the full width of the LOD. Since the wetland width within the LOD is less than 75', the FERC Procedures do not require LOD reduction. However, the portion of the LOD within this wetland was reduced by 5' to minimize impacts.***	***The pipeline was routed in this location to collocate with an existing pipeline ROW.***
Stream	***UNT to Leonard Creek (WW-T81-18003)***	***WW-T81-18003***	***M-0179 2.12***	***HQ-CWF, MF***	***Perennial***	***Wild Trout Waters, Trout Stocked Stream***	***R3***	***LOD has been reduced to 80' to minimnize impacts to WW-T81-18003.***	***The pipeline was routed in this location to collocate with an existing pipeline ROW and to cross the stream at a perpindicular angle.***
Wetland	***N/A***	***W-T81-18001A-1 / W-T81-18001B-1***	***M-0179 2.15***	***EV***	***N/A***	***N/A***	***PEM, PSS***	***W-T81-18001A-1and W-T81-18001B-1 do not extend across the full width of the LOD. Since the wetland width within the LOD is less than 75', the FERC Procedures do not require LOD reduction. However, the portion of the LOD within this wetland was reduced by 5' to minimize impacts.***	***The pipeline was routed in this location to collocate with an existing pipeline ROW and to cross the eastern margins of the system.***

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Stream	*UNT to Leonard Creek (WW-T82-18006)*	*WW-T82-18006*	*M-0179 3.20*	*HQ-CWF, MF*	*Perennial*	*Class A Wild Trout Waters, Trout Stocked Stream*	*R3*	*LOD has been reduced to 75' to minimnize impacts to WW-T82-18006.*	*The pipeline was routed in this location to cross the stream at a perpendicular angle; utilize an upland field south of the stream to limit tree clearing; minimize impacts to riparian wetland W-T82-18005A-1 and 5A-2; and avoid impacting feeder streams (WW-T82-18006B and WW-T82-18006C) located to the east and west of the crossing.*
Wetland	*N/A*	*W-T82-18005A-1 / W-T82-18005A-2*	*M-0179 3.21*	*EV*	*N/A*	*N/A*	*PEM*	*W-T82-18005A-1 and W-T82-18005A-2 do not extend across the full width of the LOD. Since the wetland width within the LOD is less than 75', the FERC Procedures do not require LOD reduction. However, the portion of the LOD within this wetland was reduced by 15' to minimize impacts.*	*The pipeline was routed in this location to cross the narrowest portion of the wetland, avoiding larger wetland area to the west.*
Stream	*UNT to Leonard Creek (WW-T82-18004)*	*WW-T82-18004*	*M-0179 3.54*	*HQ-CWF, MF*	*Intermittent*	*Class A Wild Trout Waters, Trout Stocked Stream*	*R4*	*LOD for WW-T82-18004 has been reduced to 80' to minimize impacts.*	*The pipeline was routed in this location to cross the stream at a roughly perpendicular angle in a relatively disturbed area between two hay fields and just south of a paved road.*
Stream	*UNT to Leonard Creek (WW-T82-18003)*	*WW-T82-18003*	*M-0179 3.64*	*HQ-CWF, MF*	*Perennial*	*Class A Wild Trout Waters, Trout Stocked Stream*	*R3*	*LOD for WW-T82-18003 has been reduced to 80' to minimize impacts.*	*The pipeline was routed in this location to cross the stream at a roughly perpendicular angle at a location where surrounding slopes are not as steep as immediately adjacent areas.*
Wetland	*N/A*	*W-T82-18003*	*M-0179 3.88*	*EV*	*N/A*	*N/A*	*PEM*	*LOD has been reduced to 65' to minimnize impacts to W-T82-18003.*	*The pipeline was routed in this location to cross the wetland at a rougly perpendicular angle where the wetland exists between hay and agricultural fields. The original alignment in this area passed further south and crossed stream WW-T82-18002 and steep, wooded slopes. The route was modified to avoid the stream and wooded slope crossing and instead crosses this wetland in a relatively level and disturbed area.*
Stream	*Marsh Creek (WW-T76-18001)*	*WW-T76-18001*	*M-0179 4.83*	*HQ-CWF, MF*	*Intermittent*	*Wild Trout Waters*	*R4*	*LOD for WW-T76-18001 has been reduced to 80' to minimize impacts.*	*The pipeline was routed in this location to avoid impacting PFO wetland W-T76-18001C-2, and to cross PFO wetlands W-T83-18001 and W-T83-18001-1 along their margins. Any alternative crossings of this stream at a closer to perpindicular angle would result in greater impacts to PFO wetlands.*
Wetland	*N/A*	*W-T83-18001 / W-T83-18001-1*	*M-0179 4.91*	*EV*	*N/A*	*N/A*	*PFO*	*LOD has been reduced on both the north and south sides of the ROW by up to 25' to minmize impacts to W-T83-18001.*	*The pipeline was routed in this location to cross between the two wetland segments along a dirt road, reducing both upland forest clearing and PFO impacts. Only the extreme northern and southern margins of the wetland are impacted.*
Stream	*UNT to Marsh Creek (WW-T82-18008)*	*WW-T82-18008*	*M-0179 4.97*	*HQ-CWF, MF*	*Perennial*	*Wild Trout Waters*	*R3*	*LOD for WW-T82-18008 has been reduced to 80' to minimize impacts.*	*The pipeline was routed in this location to cross the stream at a perpendicular angle in an area where the stream is already impacted by a gravel driveway. The alignment also avoids entirely avoids impacts to wetlands W-T82-18009, W-T76-18002, W-T76-18003, W-T82-18008-1 and W-T82-18008-2.*

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Stream	*UNT to Marsh Creek (WW-T82-18007A)*	*WW-T82-18007A*	*M-0179 5.00*	*HQ-CWF, MF*	*Intermittent*	*Wild Trout Waters*	*R4*	*LOD for WW-T82-18007A has been reduced to 80' to minimize impacts.*	*The pipeline was routed in this location to cross the stream at a perpendicular angle in an area where the stream is already impacted by a gravel driveway. The alignment also avoids entirely avoids impacts to wetlands W-T82-18009, W-T76-18002, W-T76-18003, W-T82-18008-1 and W-T82-18008-2.*
Stream	*UNT to Marsh Creek (WW-T76-18002)*	*WW-T76-18002*	*M-0179 5.01*	*HQ-CWF, MF*	*Perennial*	*Wild Trout Waters*	*R3*	*LOD for WW-T76-18002 has been reduced to 80' to minimize impacts.*	*The pipeline was routed in this location to cross the stream at a perpendicular angle in an area where the stream is already impacted by a gravel driveway. The alignment also avoids entirely avoids impacts to wetlands W-T82-18009, W-T76-18002, W-T76-18003, W-T82-18008-1 and W-T82-18008-2.*
Stream	*UNT to Marsh Creek (WW-T81-18001)*	*WW-T81-18001*	*M-0179 5.21*	*HQ-CWF, MF*	*Perennial*	*Wild Trout Waters*	*R3*	*LOD for WW-T81-18001 has been reduced to 80' to minimize impacts.*	*The pipeline was routed in this location to cross the stream at a roughly perpendicular angle in an area that allows impacts to PFO wetland W-T81-18003C to be minimized by crossing at a relatively narrow portion of the wetland.*
Wetland	*N/A*	*W-T81-18003C / W-T81-18003A-2*	*M-0179 5.27*	*EV*	*N/A*	*N/A*	*PEM, PFO*	*LOD has been reduced to 65' to minimnize impacts to W-T81-18003C. W-T81-18003A-2 does not extend across the full width of the LOD. Since the wetland width within the LOD is less than 75', the FERC Procedures do not require LOD reduction. However, the portion of the LOD within this wetland was reduced by 5' to minimize impacts.*	*The pipeline was routed in this location to cross a narrow portion of the wetland near its southern margin.*
Wetland	*N/A*	*W-T82-18007*	*M-0179 5.43*	*None*	*N/A*	*N/A*	*PEM*	*LOD has been reduced to 75' to minimnize impacts to W-T82-18003.*	*The pipeline was routed in this location to cross the southern margin of the wetland only. Impacting this disturbed PEM wetland situated in a ditch is necessary to limit impacts to the much larger PEM/PSS/PFO complex of W-T82-18006 located to the east.*
Wetland	*N/A*	*W-T82-18006A-1 / W-T82-18006A-2 / W-T82-18006C*	*M-0179 5.46*	*None*	*N/A*	*N/A*	*PEM, PFO*	*LOD has been reduced to 65' to minimnize impacts to W-T82-18006A-1 and W-T82-18006C. W-T82-18006A-2 does not extend across the full width of the LOD. Since the wetland width within the LOD is less than 75', the FERC Procedures do not require LOD reduction. In addition, an LOD reduction at this location would only be possible in the adjacent upland area and would not result in minimization of wetland impacts.*	*The pipeline was routed in this location to cross the wetland at its narrowest and most disturbed location. The crossing location and orientation takes advantage of an upland berm and minimizes PFO and PSS impacts as much as possible. The crossing occurs in a disturbed area that is previously impacted by both an existing powerline ROW and artificial drainage ditches.*
Wetland	*N/A*	*W-T76-18005A-1 / W-T76-18005A-2 / W-T76-18005B-1*	*M-0179 6.25*	*EV*	*N/A*	*N/A*	*PEM, PSS*	*LOD has been reduced to 65' to minimnize impacts to W-T76-18005A-1 / W-T76-18005A-2 / W-T76-18005B-1.*	*The pipeline was routed in this location to cross the wetland at a rougly perpendicular angle through a relatively narrow portion of the wetland. The original alignment in this area passed further to the south and impacted additional wetlands. Routing modifications in this area allowed W-T76-18005B-3 to be avoided entirely. The realignment also increased the distance from a historical dam around wetland W-T76-18005-B and stream W-T76-18003.*
Stream	*UNT to Whitelock Creek (WW-T76-18003)*	*WW-T76-18003*	*M-0179 6.43*	*CWF, MF*	*Ephmeral*	*Wild Trout Waters*	*R6*	*LOD for WW-T76-18003 has been reduced to 80' to minimize impacts.*	*The pipeline was routed in this location to cross the stream at a roughly perpendicular angle where the stream is partially within an agricultural field, thereby reducing riparian forest impacts.*

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Stream	UNT to Whitelock Creek (WW-T69-18001)	WW-T69-18001	30.25	CWF, MF	Ephemeral	Wild Trout Waters	R6	LOD has been reduced to 75' to minimize impacts to WW-T69-18001.	The pipeline was routed in this location to provide a perpendicular crossing of two public roads to the south, maximize collocation with a foreign pipeline starting north of this location, and reduce forest fragmentation by crossing near existing residential lots rather than bisecting an interior forest.
Stream	UNT to Whitelock Creek (WW-T69-18002)	WW-T69-18002	30.28	CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 75' to minimnize impacts to WW-T69-18002.	The pipeline was routed in this location to provide a perpendicular crossing of two public roads to the south, maximize collocation with a foreign pipeline starting north of this location, and reduce forest fragmentation by crossing near existing residential lots rather than bisecting an interior forest.
Stream	UNT to Whitelock Creek (WW-T69-18003)	WW-T69-18003	30.28	CWF, MF	Ephemeral	Wild Trout Waters	R6	LOD has been reduced to 75' to minimnize impacts to WW-T69-18003.	The pipeline was routed in this location to provide a perpendicular crossing of two public roads to the south, maximize collocation with a foreign pipeline starting north of this location, and reduce forest fragmentation by crossing near existing residential lots rather than bisecting an interior forest.
Wetland	N/A	W-T69-18002C	30.29	EV	N/A	N/A	PFO	LOD has been reduced to 75' to minimnize impacts to W-T69-18002C.	The pipeline was routed in this location to provide a perpendicular crossing of two public roads to the south, maximize collocation with a foreign pipeline starting north of this location, and reduce forest fragmentation by crossing near existing residential lots rather than bisecting an interior forest.
Stream	UNT to Whitelock Creek (WW-T69-18004)	WW-T69-18004	30.30	CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 75' to minimnize impacts to WW-T69-18004.	The pipeline was routed in this location to provide a perpendicular crossing of two public roads to the south, maximize collocation with a foreign pipeline starting north of this location, minimize impact to wetland W-T69-18002C, and reduce forest fragmentation by crossing near existing residential lots rather than bisecting an interior forest.
Wetland	N/A	W-T69-18002A	30.30	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimnize impacts to W-T69-18002A.	The pipeline was routed in this location to provide a perpendicular crossing of two public roads to the south, maximize collocation with a foreign pipeline starting north of this location, minimize impact to wetland W-T69-18002C, and reduce forest fragmentation by crossing near existing residential lots rather than bisecting an interior forest.
Wetland	N/A	W-T08-18001	M-0071 0.52	None	N/A	N/A	PEM	LOD has been reduced to 85' to minimnize impacts to W-T08-18001.	The pipeline was routed in this location to maintain collocation with a foreign pipeline.

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Wetland	N/A	W-T05-18002A/ W-T05-18002B-1/ W-T05-18002C	M-0071 0.67	EV	N/A	N/A	PEM, PSS, PFO	LOD has been reduced to 80' to minimize impacts to W-T05-18002.	The pipeline was routed in this location to maintain collocation with a foreign pipeline and to provide a perpendicular crossing of WW-T05-18001.
Stream	Mill Creek (WW-T05-18001)	WW-T05-18001	M-0071 0.68	CWF, MF	Perennial	Wild Trout Waters	R3	LOD for WW-T05-18001 has been reduced to 80' to minimize impacts.	The pipeline was routed in this location to maintain collocation with a foreign pipeline and to provide a perpendicular crossing of the wetland.
Wetland	N/A	W-T95-19008 / W-T95-19008-2	M-0071 1.89	None	N/A	N/A	PEM	LOD for W-T95-19008 has been reduced to 85' to minimize impacts.	The pipeline was routed in this location to maintain collocation with a foreign pipeline and to avoid impacting a large wetland located east of the pipeline. Collocation in this location also avoids additional forest fragmentation.
Stream	UNT to Martin Creek (WW-T13-19001)	WW-T13-19001	M-0071 1.92	CWF, MF	Ephemeral	None	R6	LOD for WW-T13-19001 has been reduced to 80' to minimize impacts.	The pipeline was routed in this location to maintain collocation with a foreign pipeline and to avoid impacting a large wetland located east of the pipeline. Collocation in this location also avoids additional forest fragmentation.
Wetland	N/A	W-T13-19001 A/ W-T13-19001A-1 W-T13-19001C / W-T13-19001C-2	M-0071 2.04	None	N/A	N/A	PEM, PFO	LOD has been reduced to either 75' or 85' to minimnize impacts to W-T13-19001.	The pipeline was routed in this location to minimize wetland habitat fragmentation by generally crossing wetland W-T13-19001 on the margin of the system. Additionally, the crossing was field routed to maintain collocation with a foreign pipeline, and to avoid impacts to a large wetland located east of the pipeline. Collocation in this location also avoids additional forest fragmentation.
Stream	UNT to Martin Creek (WW-T92-19002)	WW-T92-19002	M-0071 2.06	CWF, MF	Perennial	None	R3	WW-T92-19002 does not extend across the full width of the LOD. LOD reduction is not possible at this location due to the adjacent PI and wetland crossing.	The pipeline was routed in this location to provide a perpendicular crossing of the stream, maintain collocation with a foreign pipeline, and avoid impacts to a large wetland located east of the pipeline. Collocation in this location also avoids additional forest fragmentation.
Stream	UNT to Martin Creek (WW-T13-19002)	WW-T13-19002	M-0071 2.10	CWF, MF	Intermittent	None	R4	LOD has been reduced to 75' to minimnize impacts to WW-T13-19002.	The pipeline was routed in this location to provide a perpendicular crossing of the stream, maintain collocation with a foreign pipeline, and avoid impacts to a large wetland located east of the pipeline. Collocation in this location also avoids additional forest fragmentation.

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Stream	UNT to Martin Creek (WW-T13-19003)	WW-T13-19003	M-0071 2.16	CWF, MF	Intermittent	None	R4	LOD has been reduced to 80' to minimize impacts to WW-T13-19003.	The pipeline was routed in this location to provide a perpendicular crossing of the stream, maintain collocation with a foreign pipeline, and avoid impacts to a large wetland located east of the pipeline. Collocation in this location also avoids additional forest fragmentation.
Wetland	N/A	W-T13-19001A-1	M-0071 2.3	None	N/A	N/A	PEM	LOD has been reduced to 75' to minimnize impacts to W-T13-19001A.	The pipeline was routed in this location to maintain collocation with a foreign pipeline and to avoid large ponds located immediately north and south of the LOD.
Stream	Susquehanna River (WW-T21-19001)	WW-T21-19001	34.97	WWF, MF	Perennial	WWCW Fisheries Streams	R3	WW-T21-19001 is being crossed via HDD. No impacts will result from crossing.	The pipeline was routed in this location to provide a perpendicular crossing of the Susquehanna River in an area with adjacent uplands suitable for the workspace necessary for HDD operations.
Stream	UNT to Susquehanna River (WW-T93-19001)	WW-T93-19001	35.05	CWF, MF	Intermittent	None	R4	WW-T93-19001 is being crossed via HDD. No impacts will result from crossing.	N/A - stream will be crossed by Susquehanna River HDD.
Wetland	N/A	W-T21-19001 / W-T21-19001-1	35.08	None	N/A	N/A	PEM	W-T21-19001 and W-T21-19001-1 are being crossed via HDD. No impacts will result from crossing.	N/A - wetland will be crossed by Susquehanna River HDD.
Stream	UNT to Susquehanna River (WW-T95-19004A)	WW-T95-19004A	35.10	CWF, MF	Intermittent	None	R4	WW-T95-19004A is being crossed via HDD. No impacts will result from crossing.	N/A - stream will be crossed by Susquehanna River HDD.
Stream	UNT to Susquehanna River (WW-T21-19002)	WW-T21-19002	35.89	CWF, MF	Perennial	None	R3	LOD for WW-T21-19002 has been reduced to 75' to minimize impacts.	The pipeline was routed in this area to provide a perpendicular crossing of the stream and reduce impacts to W-T19-19007.
Wetland	N/A	W-T19-19007	35.91	None	N/A	N/A	PSS	LOD has been reduced to 75' to minimnize impacts to W-T19-19007.	The pipeline was routed at this location to cross the wetland at its most narrow point and to provide a perpendicular crossing of WW-T21-19002.
Wetland	N/A	W-T19-19006	36.41	None	N/A	N/A	PEM	W-T19-19006 does not extend across the full width of the LOD. Since the wetland width within the LOD is less than 75', the FERC Procedures do not require LOD reduction. In addition, an LOD reduction at this location would only be possible in the adjacent upland area and would not result in minimization of wetland impacts.	The pipeline was routed at this location to reduce impacts by crossing the margin of the wetland.
Stream	UNT to Susquehanna River (WW-T19-19002)	WW-T19-19002	36.83	CWF, MF	Ephemeral	None	R6	LOD for WW-T19-19002 has been reducedto 80' to minimize impacts.	The pipeline was routed at this location to provide a perpendicular crossing of the stream and to minimize impact to the adjacent wetland W-T19-19004.

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Wetland	N/A	W-T19-19004	36.86	None	N/A	N/A	PEM	LOD has been reduced to 75' to minimnize impacts to W-T19-19004.	The pipeline was routed at this location to reduce impacts by crossing the margin of the wetland and provide a perpendicular crossing of adjacent stream WW-T19-19002.
Wetland	N/A	W-T19-19003	36.93	None	N/A	N/A	PEM	LOD has been reduced to 75' to minimnize impacts to W-T19-19003.	The pipeline was routed at this location to provide a perpendicular crossing of adjacent stream WW-T19-19002. Close proximity to WW-T19-002 and W-T19-19004 precluded the avoidance of this wetland, or further minimization of impacts.
Stream	UNT to Susquehanna River (WW-T19-19001)	WW-T19-19001	37.08	CWF, MF	Ephemeral	None	R6	LOD has been reduced to 75' to minimnize impacts to WW-T19-19001.	The pipeline was routed at this location to avoid impacting a spring located directly north of the resource crossing, avoid impacting the confluence of streams WW-T19-19001 and WW-T95-19002, and to provide a perpindicular crossing of the stream.
Wetland	N/A	W-T19-19002A-1/ W-T19-19002B	37.08	None	N/A	N/A	PEM, PSS	LOD has been reduced to 75' to minimnize impacts to W-T19-19002.	The pipeline was routed at this location to avoid impacting a spring located directly north of the resource crossing, avoid impacting the confluence of streams WW-T19-19001 and WW-T95-19002, and to minimize impacts to the scrub-shrub portion of the wetland.
Stream	UNT to Susquehanna River (WW-T95-19002)	WW-T95-19002	37.08	CWF, MF	Ephemeral	None	R6	LOD has been reduced to 75' to minimnize impacts to WW-T19-19002.	The pipeline was routed at this location to avoid impacting a spring located directly north of the resource crossing, avoid impacting the confluence of streams WW-T19-19001 and WW-T95-19002, and to provide a perpindicular crossing of the stream.
Stream	UNT to Susquehanna River (WW-T15-4001)	WW-T15-4001	37.28	CWF, MF	Ephemeral	None	R6	LOD has been reduced to 75' to minimnize impacts to WW-T15-4001.	The pipeline was routed at this location to provide a perpendicular crossing of the nearby public road, provide a perpendicular crossing of the stream, and to minimize tree clearing by routing along the edge of the adjacent agricultural field.
Wetland	N/A	W-T19-19001	37.27	None	N/A	N/A	PFO	LOD has been reduced to 75' to minimnize impacts to WW-T19-19001.	The pipeline was routed at this location to provide a perpendicular crossing of the nearby public road, provide a perpendicular crossing of the wetland, and to minimize tree clearing by routing along the edge of the adjacent agricultural field.
Stream	UNT to Susquehanna River (WW-T15-4002)	WW-T15-4002	37.29	CWF, MF	Ephemeral	None	R6	LOD has been reduced to 75' to minimnize impacts to WW-T15-4002.	The pipeline was routed at this location to provide a perpendicular crossing of the nearby public road, provide a perpendicular crossing of the stream, and to minimize tree clearing by routing along the edge of the adjacent agricultural field.

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Resource-Specific Avoidance and Minimization Measures
Wyoming County

Resource Type (Stream or Wetland)	Resource Name	Resource ID	MP	Chapter 93 Classification, Wetland Classification	Stream Type (Perennial, Intermittent, Ephemeral)	Stream Trout Status (Class A Wild Trout, Wild Trout, Trout Stocked)	Wetland (Cowardin Classification)	Limits of Disturbance (LOD) Adjustments	Field Routing Adjustments within 600-foot Wide Corridor*
Wetland	N/A	W-T15-4001A / W-T15-4001A-1/ W-T15-4001B / W-T15-4001B-1 / W-T15-4001B-2 / W-T15-4001B-3	37.61	None	N/A	N/A	PEM	LOD reduction to 75' was not possible due to the saturated nature of the wetland complex, unconsolidated soils in area, and adjacent stream. The additional workspace will provide storage for spoil within the wetland and will result in less impact than transporting material to a stockpile area outside the wetland.	Pipeline routing was constrained in this location by the large, linear nature of wetland W-T15-4001, with the wetland extending west to a pond and east for at least 600 feet. The pipeline was routed at this location to provide a perpendicular crossing of adjacent stream WW-T24-19001.
Stream	UNT to Susquehanna River (WW-T24-19001B)	WW-T24-19001B	37.65	CWF, MF	Perennial	None	R3	LOD reduction not possible at this crossing (per justification provided for wetland W-T15-4001 crossing)	The pipeline was routed at this location to avoid direct impacts to this stream.
Stream	UNT to Susquehanna River (WW-T24-19001)	WW-T24-19001	37.68	CWF, MF	Perennial	None	R3	LOD reduction not possible at this crossing (per justification provided for wetland W-T15-4001 crossing)	The pipeline was routed at this location to provide a perpendicular crossing of this stream.
Stream	UNT to Susquehanna River (WW-T24-19001A)	WW-T24-19001A	37.68	CWF, MF	Perennial	None	R3	LOD reduction not possible at this crossing (per justification provided for wetland W-T15-4001 crossing)	The pipeline was routed at this location to avoid direct impacts to this stream.
Wetland	N/A	W-T95-19006A-1	37.85	None	N/A	N/A	PEM	LOD has been reduced to 75' to minimnize impacts to W-T95-19006A.	The pipeline was routed at this location to minimize impacts by crossing the wetland at its most narrow point.
Stream	UNT to Susquehanna River (WW-T19-19003)	WW-T19-19003	38.07	CWF, MF	Ephemeral	None	R6	LOD has been reduced to 80' to minimnize impacts to WW-T19-19003.	The pipeline was routed at this location to provide a perpendicular crossing of this stream.
Stream	UNT to Mill Run (WW-T54-19001)	WW-T54-19001	38.54	CWF, MF	Perennial	Wild Trout Waters	R3	LOD has been reduced to 80' to minimnize impacts to WW-T54-19001.	The pipeline was routed at this location to provide a perpendicular crossing of this stream and to avoid impacts to stream WW-T54-19001A.
Wetland	N/A	W-T12-19001	39.35	None	N/A	N/A	PEM	LOD has been reduced to 75' to minimnize impacts to W-T12-19001.	PIpeline routing was constrained at this location due to adjacent homes and a pond abutting the workspace. Additionally, wetland W-T12-19001 is large and extends across the entire field. Impacts were minimized by routing the pipeline perpindicular across the wetland.
Wetland	N/A	W-T12-19002	39.99	CWF, MF	Perennial	None	R3	LOD has been reduced to 75' to minimnize impacts to W-T12-19002.	The wetland extends across the entire routing corridor and therefore could not be aovided; impacts were minmized by routing a perpindicular crossing.
Stream	UNT to Beaver Creek (WW-T12-19002)	WW-T12-19002	40.00	CWF, MF	Perennial	None	R3	LOD has been reduced to 75' to minimnize impacts to WW-T12-19002.	The pipeline was routed at this location to provide a perpendicular crossing of this stream.
Wetland	N/A	W-T12-19003C-1/ W-T12-19003C-2/ W-T12-19003A	40.84	None	N/A	N/A	PEM, PFO	***LOD has been modified to eliminate impacts to W-T12-19003C-2. LOD has been reduced to 50' for conventional bore crossing to minimnize impacts to W-T12-19003C-1 and W-T12-19003A.***	The pipeline was routed at this location around the edge of the wetland complex to minimize impacts. Further avoidance was constrained by an adjacent house, a public road, and a pond.
Stream	UNT to Trout Brook (WW-T93-20002)	WW-T93-20002	40.87	CWF, MF	Perennial	None	R3	***LOD has been reduced to 50' for conventional bore crossing to minimnize impacts WW-T93-20002.***	The pipeline was routed to provide a perpendicular crossing of this stream.

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Resource-Specific Avoidance and Minimization Measures
Wyoming County

Resource Type (Stream or Wetland)	Resource Name	Resource ID	MP	Chapter 93 Classification, Wetland Classification	Stream Type (Perennial, Intermittent, Ephemeral)	Stream Trout Status (Class A Wild Trout, Wild Trout, Trout Stocked)	Wetland (Cowardin Classification)	Limits of Disturbance (LOD) Adjustments	Field Routing Adjustments within 600-foot Wide Corridor*
Wetland	N/A	W-T12-19004	40.96	None	N/A	None	PFO	LOD has been reduced to 75' to minimnize impacts to WW-T12-19004.	The pipeline was routed to provide a perpendicular crossing of the narrowest portion of the wetland.
Wetland	N/A	W-T19-20004 / W-T19-20004-1 / W-T19-20004-2	M-0054 0.10	None	N/A	N/A	PFO	LOD reduction was not possible due to the saturated nature of the wetland complex, unconsolidated soils in area, and adjacent stream. The additional workspace will provide storage for spoil within the wetland and will result in less impact than transporting material to a stockpile area outside the wetland.	The pipeline was routed in this location to provide a perpendicular crossing of both the wetland and adjacent public road.
Stream	Trout Brook (WW-T19-20005)	WW-T19-20005	M-0054 0.10	CWF, MF	Perennial	None	R3	LOD has been reduced to 75' to minimnize impacts to WW-T19-20005.	The pipeline was routed in this location to provide a perpendicular crossing of this stream.
Wetland	N/A	W-T14-20004	43.61	None	N/A	N/A	PEM	W-T14-2004 does not extend across the full width of the LOD. Since the wetland width within the LOD is less than 75', the FERC Procedures do not require LOD reduction. In addition, an LOD reduction at this location would only be possible in the adjacent upland area and would not result in minimization of wetland impacts.	The pipeline was routed in this location to avoid impacting the adjacent stream WW-T14-20004.
Stream	UNT South Branch Tunkhannock Creek (WW-T14-20004)	WW-T14-20004	43.63	TSF, MF	Ephemeral	Approved Trout Waters; Trout Stocked Stream	R6	The LOD for W-T14-20004 was necked down to eliminate impacts.	This feature is no longer impacted based on LOD reductions.
Stream	South Branch Tunkhannock Creek (WW-T14-20003)	WW-T14-20003	43.72	TSF, MF	Perennial	Approved Trout Waters; Trout Stocked Stream	R3	LOD reduction not feasible due to complex stream crossing and two PI's located north and south of the feature.	The pipeline was routed to provide a perpendicular crossing of this stream.
Wetland	N/A	W-T14-20003	43.89	None	N/A	N/A	PEM	The majority of W-T14-2003 is located beyond the LOD. Two areas of W-T14-2003 are impacted within the LOD. One area is a linear feature that extends perpendicular across the entire width of the ROW. In this location the LOD is reduced to 75'. The second area is a wetland lobe that does not extend across the full width of the LOD. Since the wetland width within the LOD is less than 75', the FERC Procedures do not require LOD reduction at this location. Therefore, the LOD width has not been reduced.	The pipeline was routed to avoid habitat fragmentation and minimize impacts by crossing the margin of the wetland.

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Wyoming County

Resource Type (Stream or Wetland)	Resource Name	Resource ID	MP	Chapter 93 Classification, Wetland Classification	Stream Type (Perennial, Intermittent, Ephemeral)	Stream Trout Status (Class A Wild Trout, Wild Trout, Trout Stocked)	Wetland (Cowardin Classification)	Limits of Disturbance (LOD) Adjustments	Field Routing Adjustments within 600-foot Wide Corridor*
Wetland	N/A	W-T14-20002	44.43	None	N/A	N/A	PEM	LOD reduction to 75' was not possible due to the saturated nature of the wetland complex, unconsolidated soils in area, and adjacent stream. The additional workspace will provide storage for spoil within the wetland and will result in less impact than transporting material to a stockpile area outside the wetland.	The pipeline was routed in this location to avoid impacting a much larger wetland to the southeast. Minimization of impacts to wetland W-T14-20002 was constrained by adjacent homes and ponds. On a wider scale, the pipeline was routed in this area to minimize tree clearing/forest fragmentation and minimize wetland impact. During routing an alternate route was considered 0.5 miles north of this crossing, but was found to require greater forest and wetland impacts than the proposed route.
Stream	UNT to South Branch Tunkhannock Creek (WW-T14-20002/ WW-T14-20002A)	WW-T14-20002/ WW-T14-20002A	44.43	CWF, MF	Perennial	Approved Trout Waters; Trout Stocked Stream	R3	LOD reduction not possible at this crossing (per justification provided for wetland W-T14-20002 crossing)	Minimization of impacts to this stream system was constrained by the adjacent public road and barn. On a wider scale, the pipeline was routed in this area to minimize tree clearing/forest fragmentation and minimize wetland impact. During routing an alternate route was considered 0.5 miles north of this crossing, which was found to require greater forest and wetland impacts than the proposed route.
Wetland	N/A	W-T19-20003A/ W-T19-20003A-1	45.23	None	N/A	N/A	PEM, PSS	W-T19-2003 does not extend across the full width of the LOD. Since the wetland width within the LOD is less than 75', the FERC Procedures do not require LOD reduction. However, the portion of the LOD within this wetland has been reduced by 5 feet to minimize impacts.	The pipeline was routed at this location to maximize use of an agricultural field and avoid habitat fragmentation by crossing the margin of the wetland.
Stream	UNT to South Branch Tunkhannock Creek (WW-T19-20004)	WW-T19-20004	45.33	CWF, MF	Perennial	Approved Trout Waters	R3	LOD has been reduced to 80' to minimnize impacts to WW-T19-20004.	The pipeline was routed in this location to provide a perpendicular crossing of this stream.
Wetland	N/A	W-T10-2001C W-T10-20001C-1/ W-T10-20001B/ W-T10-20001A	45.76	None	N/A	N/A	PFO	LOD has been reduced to 75' to minimnize impacts to W-T10-20001.	Pipeline routing was constrained at this location due to an adjacent public road to the north and residence to the south. Additionally, the wetland extends across the entire routing corridor. Impacts were minimized by routing the pipeline perpindicular across the wetland.
Stream	UNT to South Branch Tunkhannock Creek (WW-T10-20001)	WW-T10-20001	45.78	CWF, MF	Intermittent	None	R4	LOD has been reduced to 75' to minimnize impacts to WW-T10-20001.	Pipeline routing was constrained at this location due to an adjacent public road to the north and residence to the south. Additionally, the wetland extends across the entire routing corridor. Impacts were minimized by routing the pipeline perpindicular across the wetland.

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Resource-Specific Avoidance and Minimization Measures
Wyoming County

Resource Type (Stream or Wetland)	Resource Name	Resource ID	MP	Chapter 93 Classification, Wetland Classification	Stream Type (Perennial, Intermittent, Ephemeral)	Stream Trout Status (Class A Wild Trout, Wild Trout, Trout Stocked)	Wetland (Cowardin Classification)	Limits of Disturbance (LOD) Adjustments	Field Routing Adjustments within 600-foot Wide Corridor*
Stream	UNT to South Branch Tunkhannock Creek (WW-T10-20002)	WW-T10-20002	45.93	CWF, MF	Perennial	None	R3	LOD has been reduced to 80' to minimnize impacts to WW-T10-20002.	The pipeline in this area was shifted south to avoid a large wetland complex (W-T10-20002) identified in the northern end of the routing corridor. The pipeline was also routed in this location to provide a perpendicular crossing of this stream.
Wetland	N/A	W-T54-20002	46.11	None	N/A	N/A	PEM	LOD reduction to 75' was not possible due to steep slopes and the multiple PI's occurring along the route immediately after the crossing.	The pipeline in this area was shifted south to avoid a much larges wetland complex (W-T10-20002) identified in the northern end of the routing corridor. The pipeline was also routed in this location to provide a perpendicular crossing of this wetland.
Stream	UNT to South Branch Tunkhannock Creek (WW-T54-20002)	WW-T54-20002	46.18	CWF, MF	Intermittent	None	R4	LOD reduction not possible at this crossing (per justification provided for wetland W-T54-20002 crossing)	The pipeline was routed to provide a perpendicular crossing of this stream.
Wetland	N/A	W-T28-20001	46.34	None	N/A	N/A	PEM	The LOD for W-T28-20001 was necked down to eliminate impacts.	This feature is no longer impacted based on LOD reductions.
Stream	UNT to South Branch Tunkhannock Creek (WW-T10-20003)	WW-T10-20003	MOC-0058 0.23	CWF, MF	Perennial	None	R3	LOD has been reduced to 80' to minimnize impacts to WW-T10-20003.	The pipeline was routed to provide a perpendicular crossing of this stream.
Stream	UNT to South Branch Tunkhannock Creek (WW-T19-20002)	WW-T19-20002	46.92	CWF, MF	Ephemeral	None	R6	LOD has been reduced to 80' to minimnize impacts to WW-T19-20002.	The pipeline was routed in this location to avoid impacting W-T19-20002, located 30 feet east of the proposed LOD. The route also provides a perpendicular crossing of WW-T19-20002.
Stream	UNT to South Branch Tunkhannock Creek (WW-T19-20003)	WW-T19-20003	47.22	CWF, MF	Perennial	None	R3	LOD has been reduced to 80' to minimnize impacts to WW-T19-20003.	The pipeline was routed to provide a perpendicular crossing of this stream.
Wetland	N/A	W-T65-20001A/ W-T65-20001C	48.22	None	N/A	N/A	PEM	LOD has been reduced to 75' to minimnize impacts to WW-T65-20001.	The pipeline was routed at this location to minimize impacts by crossing the wetland at its most narrow point. Additional minimization was constrained by adjacent residences.
Wetland	N/A	W-T19-20001	48.72	EV	N/A	N/A	PEM	LOD has been reduced to 75' to minimnize impacts to W-T19-20001.	The pipeline was routed at this location to minimize impact to stream WW-T19-20001. The original route crossed an area with a braided stream channel. The pipeline was moved to cross a single channel at a perpendicular angle.
Stream	UNT to Tunkhannock Creek (WW-T19-20001)	WW-T19-20001	48.74	CWF, MF	Perennial	None	R3	LOD has been reduced to 75' to minimnize impacts to WW-T19-20001.	The pipeline was routed at this location to minimize impact to this stream. The original route crossed an area with a braided stream channel. The pipeline was moved to cross a single channel at a perpendicular angle.
Stream	Tunkhannock Creek (WW-T54-21001)	WW-T54-21001	M-0051 0.08	TSF, MF	Perennial	Approved Trout Waters; WWCW Fisheries Stream	R3	LOD reduction to 75' was not possible due to the feature being a navigable water requiring Aids To Navigation (ATON), and because the stream is a hydrostatic test water source.	The pipeline was routed at this location to avoid crossing this stream on a steep slope and to provide a perpendicular crossing.
Wetland	N/A	W-T17-20001	M-0080 0.25	None	N/A	N/A	PEM	LOD has been reduced to 75' to minimnize impacts to W-T17-20001.	The pipeline was routed at this location to minimize wetland impact by crossing at a perpendicular angle. Adjacent site constraints including residential homes and the public road crossing precluded full wetland avoidance.

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Resource Type (Stream or Wetland)	Resource Name	Resource ID	MP	Chapter 93 Classification, Wetland Classification	Stream Type (Perennial, Intermittent, Ephemeral)	Stream Trout Status (Class A Wild Trout, Wild Trout, Trout Stocked)	Wetland (Cowardin Classification)	Limits of Disturbance (LOD) Adjustments	Field Routing Adjustments within 600-foot Wide Corridor*
Wetland	N/A	W-T57-21006	M-0080 0.66	None	N/A	N/A	PEM	LOD has been reduced to 75' to minimnize impacts to W-T57-21006.	The pipeline was routed at this location to cross the wetland at its most narrow point.
Wetland	N/A	W-T57-21005	M-0080 0.77	None	N/A	N/A	PEM	LOD has been modified to eliminate impacts to W-T57-21005.	This feature is no longer impacted based on LOD reductions.
Stream	UNT to Tunkhannock Creek (WW-T57-21003)	WW-T57-21003	M-0080 1.09	CWF, MF	Perennial	None	R3	LOD has been reduced to 75' to minimnize impacts to WW-T57-21003.	The pipeline was routed to provide a perpendicular crossing of this stream.
Wetland	N/A	W-T57-21004	M-0080 1.10	None	N/A	N/A	PSS	LOD has been reduced to 75' to minimnize impacts to W-T57-21004.	The pipeline was routed to provide a perpendicular crossing of this narrow linear wetland.
Wetland	N/A	W-T57-21003B/ W-T57-21003C	M-0080 1.13	None	N/A	N/A	PSS, PFO	LOD has been reduced to 75' to minimnize impacts to W-T57-21003.	The pipeline was routed in this location to avoid impacting the forested portion of the wetland.
Stream	UNT to Tunkhannock Creek (WW-T57-21002)	WW-T57-21002	M-0080 1.27	CWF, MF	Intermittent	None	R4	LOD has been reduced to 80' to minimnize impacts to WW-T57-21002.	The pipeline was routed to provide a perpendicular crossing of this stream.
Wetland	N/A	W-T57-21002	M-0080 1.32	None	N/A	N/A	PEM	W-T57-21002 does not extend across the full width of the LOD. Since the wetland width within the LOD is less than 75', the FERC Procedures do not require LOD reduction. In addition, an LOD reduction at this location would only be possible in the adjacent upland area and would not result in minimization of wetland impacts.	The pipeline was routed in this location to provide a perpendicular crossing of stream WW-T57-21002, avoid workspace being placed parallel and abutting stream WW-T57-21002, and to avoid wetland W-T57-21001, located 30 feet east of the proposed LOD.
Wetland	N/A	W-T31-21001	50.48	None	N/A	N/A	PEM	LOD has been reduced to 75' to minimnize impacts to W-T31-21001.	The pipeline was routed to provide a perpendicular crossing of the narrow, linear wetland.

Note:
*The FERC Alignment Sheets provided in Attachment H-1 show field delineated streams and wetlands within the 300-foot wide environmental survey corridor, and surrounding land use features on an aerial base map.

W-T19-20003A and W-T19-20003A-1 are not impacted by the full width of the LOD, and the current width of the LOD at this crossing is less than 75'. A portion of the LOD has been necked down by 5' to reduce impacts to the extent practicable.