Stream Biological Conditions EA Report

Project Name	H-600 Pipeline Spread B	**AFE**	124300130	**Spread**	H-600 Pipeline Spread B
Contractor	Precision			**Report #**	159
Environmental Auditor	Devin Jen			**Date/Time**	8/20/2023 9:52 AM

Stream ID	S-H165	**Crossing Start Date**	8/31/2023	**Crossing Completion Date**	9/7/2023
Milepost	60.10	**Pre-Con Assessment Date**	8/20/2023	**Post-Con Assessment Date**	9/7/2023
Station	3173+06	**Bankfull Width (ft.)**	6.0	**Riffle:Pool Complexes Present?**	No
State	WV	**Stream Classification**	Ephemeral		
County	Lewis	**303(d) Impairment Listing**	N0		

	Resource Post-Crossing Conditions	
1	Were all applicable resource specific crossing conditions satisfied?	N/A
	Time of Year Restrictions (TOYR)? N/A Mussel Relocation? N/A	
2	This question is not applicable in WV.	
3	Which crossing methods were utilized during the stream crossing? (If so select one or more) Dam & Pump X Flume X Cofferdam Conventional Bore Horizontal Directional Drill (HDD) Bore	
4	Was the top 1-foot (12-inches) of streambed substrate segregated and stockpiled separate from trench spoils?	Yes
5	Was excess material not needed for backfill removed and disposed of in an upland area?	Yes
6	Was the top 12-inches of backfill made with clean native stream substrate?	Yes
7	Was the pre-construction survey data utilized during restoration in attempt to re-establish pre-construction contours?	Yes
8	Were any field modifications to the stream implemented by project or regulatory personnel to address potential drainage or bank restoration limitations?	No
9	Were impervious trench breakers/plugs properly installed within 25-feet of top-of-bank to prevent subsurface erosion to or from the resource area?	Yes
10	Was permanent seed and stabilization material (straw or matting) applied to riparian areas and stream banks prior to re-establishing flow to the impact area of the channel?	Yes
11	Was the time of disturbance minimized by conducting resource work continuously to completion?	Yes
12	Have civil surveys been scheduled to verify as-built conditions meet pre-construction conditions in accordance with the project Mitigation Framework and federal/state permit requirements?	Yes
13	Are bareroot saplings required and/or scheduled to be planted for the dormant season (10/1 - 4/30)?	N/A
14	Did any unauthorized discharges to unpermitted resources occur during the crossing? If so, explain the corrective actions implemented in the Comments section and include additional photos.	No

	Biological Conditions	Pre-Con	Post-Con
15	**Predominant Substrate Type (select one):** Bedrock, Boulder (>10"), Cobble (2-10"), Gravel (0.1-2"), Sand (<0.1"), Mud/Silt/Clay	Cobble (2-10")	Cobble (2-10")
16	**Channel Conditions:Rating:** 1-Optimal (80-100% stable banks), 2-Sub-optimal (60-80% stable banks), 3-Marginal (40-60% stable banks), 4-Poor (20-40% stable banks), 5-Severe (0-20% stable banks, highly eroded or unvegetated banks	1	5
17	**Riparian Buffer Zone within ROW and ≤50 ft. from Stream Top-of-Bank: Rating:** 1-Optimal (60-100% heavy vegetative cover), 2-Sub-optimal (30-60% mixed vegetated coverage), 3-Marginal (<30% vegetative coverage), 4-Poor (Mowed/maintained area or farmland, impervious area, sparsely vegetated coverage, etc.)	1	4

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	Biological Conditions Continued	Pre-Con	Post-Con
18	**Instream Habitat Conditions:** Examples: Varied substrate sizes, varied combination of water velocities & depths, presence of woody/leafy debris, stable substrate with low amount of mobile particles, low embeddedness, shade protection, undercut banks, root mats, Varied combination of water velocities, submerged aquatic vegetation Rating: 1-Optimal (Habitat conditions present in >50% of resource), 2-Suboptimal (Habitat conditions in 30-50% of resource), 3-Marginal (Habitat conditions in 10-30% of resource), 4-Poor (Habitat conditions in 0-10% of resource)	3	3
19	**Channel Alterations:** Examples: Straightened channel, non-MVP stream crossings, non-native riprap/rock along banks, concrete/gabions/concrete block, manmade embankments, constrictions w/in channel, livestock or agricultural impacts Rating: 1-Negligible (unaltered/natural stream), 2-Minor (20-40% of resource disrupted by channel alterations), 3-Moderate (40-80% of resource disrupted), 4-Severe (>80% of resource disrupted)	4	4

Additional Notes

8/20/2023 Pre-construction assessment
The weather on 8/20/2023, at the time of the pre-construction assessment, was 67°F and clear. The delineated stream at the area of the stream crossing is an artificial, straightened channel alongside an existing graveled roadway that connects to a culvert outside of the LOD. The pre-construction assessment was conducted on 8/20/2023 prior to the contractor's installation of a flume and equipment crossing that would impede photos and accuracy of the pre-construction assessment.

8/21/2023 - 8/30/2023
The crew has not started the stream crossing, and the flume remains in place.

8/31/2023
The weather on 8/31/2023 had a high of 77°F and was partly cloudy, however, the weather fluctuated throughout the day. The crew began excavating the trench in the area of the stream crossing. Prior to excavation, the top 12 inches of topsoil for the bank and the top 12 inches of topsoil for the streambed were segregated from the trench spoils.

9/1/2023
The weather on 9/1/2023 had a high of 85°F and was clear, however, the weather fluctuated throughout the day. The crew continued excavating the trench and added sandbags to the area of the stream crossing.

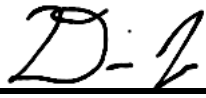
9/2/2023
The weather on 9/2/2023 had a high of 87°F and was partly cloudy, however, the weather fluctuated throughout the day. The crew placed sandbags, positioned the pipe, and added pea gravel to the area of the stream crossing. Welders completed the weld on the section of the pipe to the southeast of the stream crossing. The crew will not be working on 9/3/2023 and 9/4/2023.

9/5/2023
The weather on 9/5/2023 had a high of 92°F and was clear, however, the weather fluctuated throughout the day. The crew added more sandbags and started to place the trench breakers in the area of the stream crossing.

9/6/2023
The weather on 9/6/2023 had a high of 91°F and was clear, however, the weather fluctuated throughout the day. The crew continued to construct the trench breakers in the area of the stream crossing. Additionally, the crew added crushed limestone to the base of the stream crossing and began backfilling.

9/7/2023
The weather on 9/7/2023 had a high of 84°F and was partly cloudy, however, the weather fluctuated throughout the day. The stream
was restored to pre-construction contours. Conditions 16 and 17 were given a rating of 5 and 4, respectively, due to the lack of vegetation in the disturbed permitted impact area following the completion of the crossing and restoration. The streambanks have been properly stabilized and the disturbed area has been seeded with the appropriate permanent seed mix and/or planted with bare-root saplings (as required) in accordance with Appendix B: Restoration Work Plan of the Mountain Valley Pipeline Comprehensive Stream and Wetland Monitoring, Restoration and Mitigation Framework

In accordance with the Mountain Valley Pipeline Comprehensive Stream and Wetland Monitoring, Restoration and Mitigation Framework, this independent report was completed to document the on-site monitoring of instream invertebrate and fisheries resources during all construction activity related to waterbody and wetland crossings, and document instream conditions and any impacts to the resources.

Name	Signature	Company	Date
Devin Jen		ERM	9/11/2023

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Required Photos

GPS Location	See photograph.
Description	Downstream view of permitted impact area during pre-construction assessment.

GPS Location	See photograph.
Description	Downstream view of unimpacted area during pre-construction assessment.

GPS Location	See photograph.
Description	Downstream view of permitted impact area during post-construction assessment.

GPS Location	See photograph.
Description	Downstream view of unimpacted area during post-construction assessment.

GPS Location	See photograph.
Description	Flume was placed on 8/20/2023. The photo was taken at the beginning of the workday on 8/21/2023. Stream crossing will not start today.

GPS Location	See photograph.
Description	The photo was taken at the beginning of the workday on 8/28/2023. The stream crossing will not start today.

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Optional Photos

GPS Location	See photograph.
Description	The photo shows the top 12 inches of streambed topsoil being removed on 8/31/2023.

GPS Location	See photograph.
Description	The photo shows the progress of the trench excavation on 9/1/2023.

GPS Location	See photograph.
Description	The photo shows the positioning of the pipe and the addition of sandbags within the area of the stream crossing on 9/2/2023.

GPS Location	See photograph.
Description	The photo shows the area of the stream crossing on 9/5/2023.

GPS Location	See photograph.
Description	The photo shows the area of the stream crossing at the end of the workday on 9/6/2023.

Insert image here

GPS Location	
Description	