Stream Biological Conditions EA Report

Project Name	H-600 Pipeline Spread C	**AFE**	124300131	**Spread**	H-600 Pipeline Spread C
Contractor	Precision			**Report #**	250
Environmental Auditor	Brian Montgomery			**Date/Time**	9/19/2023 11:03 AM

Stream ID	S-L46	**Crossing Start Date**	9/19/2023	**Crossing Completion Date**	9/22/2023
Milepost	77.81	**Pre-Con Assessment Date**	9/16/2023	**Post-Con Assessment Date**	9/25/2023
Station	4108+56	**Bankfull Width (ft.)**	21.0	**Riffle:Pool Complexes Present?**	No
State	WV	**Stream Classification**	Perennial		
County	Braxton	**303(d) Impairment Listing**	No		

	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	2
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)	1	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)	1	2

Additional Notes

9-19-2023. The contractor started the stream crossing by setting up a three-tiered dam and pump-around to divert the stream flow. The contractor removed prominent boulders that had been surveyed and placed them on plastic sheeting to store until needed for restoration. The contractor removed the cobble streambed substrate to a depth of approximately 2 feet between the high-water marks and stored it in 17 individually numbered super sacks. The trench subsoil was segregated and stockpiled off to the side. The stockpiles were marked with the appropriate signage by the Environmental Inspector (EI). After installing sandbag pipe supports, the pipe was lowered into the trench and the contractor began making tie-in welds on the going away side (GAS) of the crossing. A flume pipe was installed at the end of the day to restore the natural stream flow. The contractor scheduled an overnight crew to dewater the trench into an approved dewatering structure, to ensure that the trench water would not overflow and go downstream. Dewatering operations continued throughout the crossing as needed.

9-20-2023. Welding operations continued on both sides of the stream crossing.

9-21-2023. The contractor continued making welds on the coming inside (CIS) of the crossing. Around 3 pm, the contractor started installing trench breakers behind the high-water mark and padded the pipe with spoil to achieve proper cover.

9-22-2023. The contractor installed a concrete trench breaker on the CIS at Sta# 4108+17 and a sandbag trench breaker on the GAS of the stream at Sta# 4108+87. The contractor finished padding and compacting the pipe with native soil and restored the upland banks above the high-water mark. The additional subsurface cobble was replaced in the stream channel and the streambed substrate material was replaced in the reverse order that it was removed. Prominent boulders were restored to their GPS locations in the streambed and all contours and elevations were verified by survey. The stream banks were properly stabilized, and the disturbed areas were seeded with the appropriate permanent seed mix, 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
Brian Montgomery		SWCA	9/25/2023

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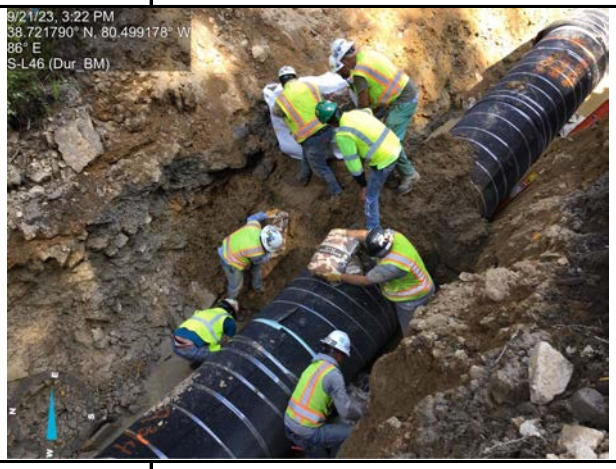
Required Photos

GPS Location	See photo
Description	Downstream view of permitted impact area during pre-construction assessment. Pre construction after rain event.

GPS Location	See photo
Description	Downstream view of unimpacted area during pre-construction assessment. Pre construction off ROW after rain event.

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

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



GPS Location	See photo
Description	Installing the Bara-Kade plus trench breakers

GPS Location	See photo
Description	Backfilling the pipe with padding material.

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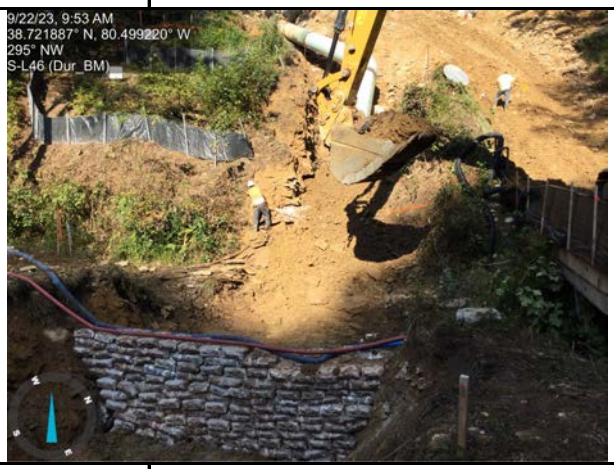
Optional Photos

GPS Location	See photo
Description	Replacing stream bed substrate, in the reverse order they were removed.

GPS Location	See photo
Description	Replacing stream bed substrate, and GPS located prominent boulders.



GPS Location	See photo
Description	Padding the pipe after trench breaker installation.

GPS Location	See photo
Description	Dam and pump outflow downstream off ROW. Clear water, no scouring or erosion.

GPS Location	See photo
Description	GPS boulders stored in plastic are now being placed back in the stream.

GPS Location	See photo
Description	Rebuilding the stream banks.