Stream Biological Conditions EA Report

Project Name	H-600 Pipeline Spread A	**AFE**	124300129	**Spread**	H-600 Pipeline Spread A
Contractor	Precision			**Report #**	247
Environmental Auditor	Samantha Felix			**Date/Time**	10/6/2023 7:45 PM

Stream ID	S-UU3	**Crossing Start Date**	9/25/2023	**Crossing Completion Date**	10/4/2023
Milepost	26.06	**Pre-Con Assessment Date**	9/22/2023	**Post-Con Assessment Date**	10/9/2023
Station	1375+88	**Bankfull Width (ft.)**	60.0	**Riffle:Pool Complexes Present?**	Yes
State	WV	**Stream Classification**	Perennial		
County	Harrison	**303(d) Impairment Listing**	Biological, fecal, iron		

	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 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	Mud/Silt/Clay	Mud/Silt/Clay
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	2	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.)	4	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)	4	4
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)	2	2

Additional Notes

9/22/23 - Attended the pre-construction meeting for crossing S-UU3. Pre-construction assessment conducted and pictures taken. Channel conditions (#16) were given a sub-optimal rating due to preexisting embankment erosion at a steeper grade with limited invasive vegetation. The riparian buffer zone (#17) was given a poor rating as it has less than 30% vegetation coverage made up of mostly invasive species and portions of the buffer included areas with active construction work. Condition #18 was also rated poor; roughly 80% algae surface coverage at the crossing area was observed, likely contributing to slower water velocity, residual trash observed in the stream unrelated to construction activity, and there was no shade coverage in the proposed crossing area. Indication of recent channel alterations were minor, though the stream appears unnaturally straight. Possible historical channel alterations from adjacent highway construction. -J.Pokorny

9/25/23 - The crew installed the dam and pump, and sheet piling was installed upstream of the dam in order to mitigate the flow. -S.Felix

9/26/23 - Topsoil from the stream bank was removed and sheet piling was installed. -S.Felix

9/27/23 - Sheet piling was installed along the stream bank, and afterwards the stream substrate was removed. -S.Felix

9/28/23 - Ditch was excavated. -S.Felix

9/29/23 - 9/30/23 - Welding commenced on 9/29 and finished on 9/30.

10/2/23 - The weld was coated and the crew started backfilling the trench with subsoil. -S.Felix

10/3/23 - The trench was backfilled with subsoil. After the subsoil was properly compacted, the 12” of segregated waterbody substrate was placed back into the stream bank to match pre-construction contours. -S.Felix

10/4/23 - The dam was pulled and restored flow to the stream. -R.Ellis

10/5/23 - Erosion control fabric was added below the ordinary high water mark in order to prevent erosion and increase bank stability. Post-construction pictures taken. -R.Ellis

Numbers 16 was rated "severe" in the post-construction assessment due to lack of vegetation in the disturbed permitted impact area following the completion of the crossing and restoration efforts. The S-UU3 stream bank and stream bed substrates have been properly stabilized and the disturbed area has been 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
Samantha Felix		ERM	10/9/2023

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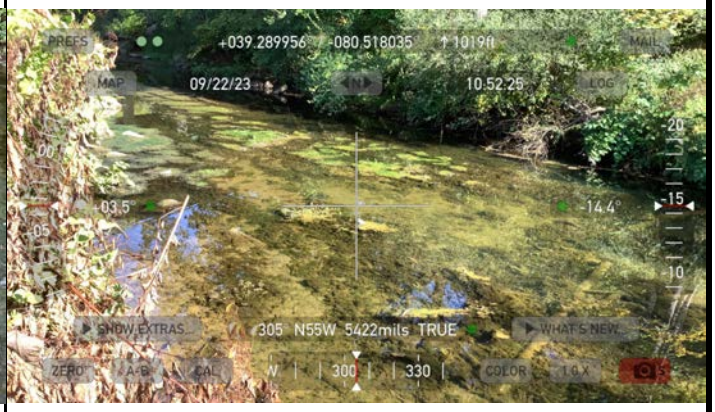
Required Photos

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



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

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

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

GPS Location	See above.
Description	Sheet piling was installed upstream in order to prevent water from flowing into the work area.

GPS Location	See above.
Description	The work area was fully drained by Tuesday.

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Optional Photos

GPS Location	See above.
Description	Some upland soil was removed so that sheet piling could begin.

GPS Location	See above.
Description	First 12 inches of soil removed yesterday. Crew continued sheet piling and installing I-beams.

GPS Location	See above
Description	Trench after excavation.

GPS Location	See above
Description	Welding taking place.

GPS Location	See above.
Description	Weld finished. Ready to coat.

GPS Location	See above.
Description	Added stream substrate.