Stream Biological Conditions EA Report

Project Name	H-600 Pipeline Spread D	**AFE**	124300132	**Spread**	H-600 Pipeline Spread D
Contractor	Precision			**Report #**	307
Environmental Auditor	Kyle Gillow			**Date/Time**	10/23/2023 7:12 AM

Stream ID	S-L41	**Crossing Start Date**	10/23/2023	**Crossing Completion Date**	2/23/2024
Milepost	123.57	**Pre-Con Assessment Date**	10/12/2023	**Post-Con Assessment Date**	2/23/2024
Station	6524+55	**Bankfull Width (ft.)**	20.0	**Riffle:Pool Complexes Present?**	No
State	WV	**Stream Classification**	Perennial		
County	Nicholas	**303(d) Impairment Listing**	No		

	Resource Post-Crossing Conditions	
1	Were all applicable resource specific crossing conditions satisfied?	See Below
	Time of Year Restrictions (TOYR)? Yes 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)?	Yes
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	Bedrock, Boulder (>10")	Bedrock, Boulder (>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	1
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

AFE	124300132	Date/Time	10/23/2023 7:12 AM	Report #	307

	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	1
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

Stream S-L41 has a time of year restriction (TOYR) prohibiting construction between Sept. 15th to March 31st. A waiver has been obtained from the appropriate agencies to allow construction within this window.

10/23/23 – Prior to any ground disturbance, a dam and pump around system using two 6” pumps were utilized at half throttle to keep up with stream flow. Most of the top 12” of stream substrate, signature boulders, and surface rocks between the high-water marks were removed and stockpiled in their respective segregated piles by the end of the day.

10/24/23 – The remaining top 12” of stream substrate, signature boulders, and surface rocks between the high-water marks were removed and stockpiled in their respective segregated piles prior to commencing trenching operations. Shortly after trenching began it became apparent that sheet piling was needed before trenching could continue. The subsoil was returned to the ditch line and a sheet piling crew was called in for the following day.

10/25/23 to 10/28/23 - No work was conducted in the feature while sheet-piling crews moved in their equipment and materials throughout the next couple of days. On the 28th sheet piling was installed from the coming in side (CIS) of the feature through to the going away side (GAS).

10/29/23 – No work was conducted on Sunday.

10/30/23 to 11/3/23 – On the 30th no work was conducted in the feature as the contractor assisted in demobilizing the sheet piling crew. On the 31st the feature was trenched through, and the ditch was lined with sandbags. No welding was needed during the crossing, as the section of pipe that was lowered in was long enough to extend the full distance of the feature; this was done on the 1st. Padding, backfilling, and installation trench breakers through the feature were conducted on the 2nd and 3rd.

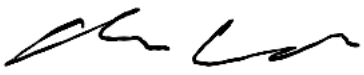
11/4/23 to 11/6/23 – The removal and de-mobilization of sheet piling operations were conducted on the 4th and 6th, with no work being conducted on Sunday the 5th.

11/7/23 to 11/9/23 - The top 12” of soil as well as the boulder and rocks were restored and verified by survey to pre-construction specifications. The environmental crew seeded and installed curlex on the banks with silt fence at the 10’ buffer zones on the coming in and going away sides.

11/10/23 to 2/22/24 - This report has been open for an extended amount of time due to the conditions on the GAS slope. The extremely steep slope is susceptible to falling debris and or slippage, and due to this geo-tech fabric and a flume in the GAS channel have been installed in the streambed until the GAS pipe and hillside can be stabilized. The CIS channel has been restored and the stream is flowing naturally.

2/23/24 – At the time of completing this report on the 23rd, the geo-tech fabric and a flume in the GAS channel continue to be installed in the streambed. Due to the steepness of the GAS hillside and the winter weather conditions, the geo-tech fabric and flume will remain in the streambed until the GAS hillside can be properly stabilized. The permanent restoration of the GAS 50’ buffer and removal of the geo-tech fabric and flume will likely be conducted during the spring when soil conditions and weather are more favorable.

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
Kyle Gillow		SWCA	2/23/2024

AFE	124300132	Date/Time	10/23/2023 7:12 AM	Report #	307

Required Photos

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

GPS Location	See caption in photo.
Description	Downstream view of unimpacted area during pre-construction assessment.

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

GPS Location	See caption in photo.
Description	Downstream view of unimpacted area during post-construction assessment. Turbidity curtain installed as additional protective measure until GAS slope is repaired.

GPS Location	See caption in photo.
Description	Crew removing rocks from streambed.

GPS Location	See caption in photo.
Description	Crew removing top 12” of stream substrate and storing in super sacks.

AFE	124300132	Date/Time	10/23/2023 7:12 AM	Report #	307

Optional Photos

GPS Location	See caption in photo.
Description	Crew installed dam and pump around.

GPS Location	See caption in photo.
Description	Removing stream substrate.

GPS Location	See caption in photo.
Description	Crew installing sheet piling through stream.

GPS Location	See caption in photo.
Description	Crew trenching through stream inside the sheet piling.

GPS Location	See caption in photo.
Description	Crew lowering in section through the stream.

GPS Location	See caption in photo.
Description	Crew replacing stream substrate.