Stream Biological Conditions EA Report

Project Name	H-600 Pipeline Spread C	**AFE**	124300131	**Spread**	H-600 Pipeline Spread C
Contractor	Precision			**Report #**	434
Environmental Auditor	Paul Hixon			**Date/Time**	12/11/2023 3:09 PM

Stream ID	S-KK3b	**Crossing Start Date**	11/25/2023	**Crossing Completion Date**	12/9/2023
Milepost	82.13	**Pre-Con Assessment Date**	10/24/2023	**Post-Con Assessment Date**	12/11/2023
Station	4336+67	**Bankfull Width (ft.)**	3.0	**Riffle:Pool Complexes Present?**	No
State	WV	**Stream Classification**	Ephemeral		
County	Webster	**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	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	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	124300131	Date/Time	12/11/2023 3:09 PM	Report #	434

	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	1

Additional Notes

11/25/23 - Stream S-KK3b crossing commenced due to the close proximity of stream S-KK4b to stream S-KK3b. A sand bag dam and pump around conveyance system was erected in the ephemeral stream S-KK3b prior to the topsoil from the stream banks being segregated and stockpiled. The top 12' of the streambed was removed and placed in numbered super sacks prior to the excavation of the trench on the going away side (GAS) of the stream. By the end of the day trenching on the GAS of S-KK4b was completed with the aid of a rock hammer.

11/26/23 to 11/27/23 – Hammering and excavation of the rock layer continued through features S-KK4b and S-KK3b for the next couple of days while x-ray and coating was completed on the GAS section of pipe of S-KK4b.

11/28/23 - A section of pipe extending from coming inside (CIS) of S-KK3b to the GAS of S-KK4b was lowered in, welded, x-rayed, and coated by the end of the day. Trenching activities near S-E76 were being conducted as well, in preparation for the tie-in at that location.

11/29/23 – Construction activities continued to focus on completion of S-KK4b with the installation of bentonite trench breakers at stations 4337.91 and 4338.25 prior to padding the pipe and backfilling the exposed pipe form the CIS of the S-KK4b to tie-in section of pipe upslope on the GAS of the stream.

11/30/23 to 12/1/23 - Due to the close proximity of S-KK3b to S-KK4b, much of the construction activities were focused on the completion of S-KK4b for the next couple of days.

12/2/23 to 12/3/23 - Due to soil conditions and the proximity of S-KK3b to S-E76, much of the construction activities were focused on completing the tie-in near S-E76 for the next couple of days.

12/4/23 to 12/8/23– Stream S-KK2 crossing commenced on the 4th, due to the close proximity of stream S-KK3b to stream S-KK2. All soils for S-KK2 were managed in accordance with the Restoration Work Plan of the Mountain Valley Pipeline Comprehensive Stream and Wetland Monitoring, Restoration and Mitigation Framework. Hammering and excavating of the rock layer continued for the remainder of the day. On the 5th a short section of pipe that extended from the CIS of S-KK3b to the GAS of S-KK2 was lowered in and welded; with x-ray being completed on the 6th. Excavation of the trench on the CIS of S-KK2 continued on through to the 8th.

12/9/23 – Bentonite trench breakers were installed within 25 feet of high water mark on both the CIS and GAS of stream S-KK3b before padding commenced. Once backfilling was completed, stream banks and buffer zones were restored using previously segregated topsoil. The proper seed mixture for the 10ft. buffer zone was applied prior the erosion control blankets and super silt fence installations. Survey verified that the top 12" of substrate for S-KK3b between the high water marks of the stream channel were restored to pre-construction elevations and contours. The sand bag dam and pump around conveyance system was removed to allow for potential flow of the resource.

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
Paul Hixon		SWCA	12/11/2023

AFE	124300131	Date/Time	12/11/2023 3:09 PM	Report #	434

Required Photos

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

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

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	Segregation of topsoil.

GPS Location	See Photo
Description	Stream substrate placed in numbered super sacks for future restoration.

AFE	124300131	Date/Time	12/11/2023 3:09 PM	Report #	434

Optional Photos

GPS Location	See Photo
Description	Excavation using a rock hammer.

GPS Location	See Photo
Description	A section of pipe being lowered in through streams S-KK4b and S-KK3b.

GPS Location	See Photo
Description	A flume pipe was installed during inactivity of the feature for potential stream conveyance.

GPS Location	See Photo
Description	Installation of bentonite trench breakers on both sides of S-KK3b

GPS Location	See Photo
Description	Returning stream substrate in reverse order of removal.

GPS Location	See Photo
Description	The banks topsoil was restored with the use of a padding bucket to remove compaction and to create an even layer.