



Stream Biological Conditions EA Report

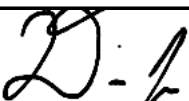
Project Name	H-600 Pipeline Spread B	AFE	124300130	Spread	H-600 Pipeline Spread B
Contractor	Precision	Report #	160		
Environmental Auditor	Devin Jen	Date/Time	8/20/2023 8:54 AM		
Stream ID	S-H145	Crossing Start Date	8/20/2023	Crossing Completion Date	8/26/2023
Milepost	60.06	Pre-Con Assessment Date	8/20/2023	Post-Con Assessment Date	8/26/2023
Station	3171+03.72	Bankfull Width (ft.)	15.0	Riffle:Pool Complexes Present?	No
State	WV	Stream Classification	Perennial		
County	Lewis	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)? <u>N/A</u> Mussel Relocation? <u>N/A</u> Fish Relocation? _____	
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 <input checked="" type="checkbox"/> Flume <input checked="" type="checkbox"/> Cofferdam <input type="checkbox"/> Conventional Bore <input type="checkbox"/> Horizontal Directional Drill (HDD) Bore <input type="checkbox"/>	
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?	See Below
8	Were any field modifications to the stream implemented by project or regulatory personnel to address potential drainage or bank restoration limitations?	See Below
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)	4	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)			2	2	
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						
<p>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 stream runs southwest to northeast and consists of a cobble bed. Cows are known to graze within the area of the stream crossing and have left paths throughout the crossing. A decision was made that the rock pictured below will not be placed back in its exact pre-construction location to ensure proper restoration of the stream. If kept, upon restoration, this rock would continue to direct water toward the bank creating slips and unstable soil. Following consultation between the EI, EA, and construction foreman, a decision was made that the rock would not be placed back in the stream during restoration. The crossing of the actual stream will take place on 8/21.</p> <p>8/21/2023 The weather on 8/21/2023 had a high of 90° F and was partly cloudy, however, the weather fluctuated throughout the day. The pump and dam were placed, and excavation began on the trench in the area of the stream crossing.</p> <p>8/22/2023 The weather on 8/22/2023 had a high of 86° F and was partly cloudy, however, the weather fluctuated throughout the day. The crews completed the excavation of the trench in the area of the stream crossing, placed sandbags, and positioned the pipe. The welders began the weld on the section of the pipe in the northeast portion of the crossing.</p> <p>8/23/2023 The weather on 8/23/2023 had a high of 88° F and was partly cloudy, however, the weather fluctuated throughout the day. The weld was successfully completed on the pipe within the area of the stream crossing. The dam and pump were replaced with a flume in order to ensure that stream flow would not be impeded in the event of heavy rains.</p> <p>8/24/2023 The weather on 8/24/2023 had a high of 83° F and was partly cloudy, however, the weather fluctuated throughout the day. The crew replaced the flume with a dam and pump in order to access the trench. Trench breakers were added to either side of the stream crossing area and pea gravel was added to the base of the stream crossing. The crew also backfilled and compacted the stream crossing. Prior to the end of the workday, the pump and dam were replaced by a flume in case of heavy rain.</p> <p>8/25/2023 The weather 8/25/2023 had a high of 81° F and was overcast. The crew did not work 8/25/2023 due to heavy rains. The flume remained in place.</p> <p>8/26/2023 The weather on 8/26/2023 had a high of 85° F and was overcast, however, the weather fluctuated throughout the day. The stream crossing was completed on 8/26/2023. 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. Due to the stream crossing being heavily scoured/undercut prior to construction, as well as the initial grade of the slope, it would not be possible to establish pre-construction contours without causing heavy erosion and preventing the stabilization of the stream banks. To stabilize the banks, the channel was straightened slightly, and the slope of the banks diverged from that of the pre-construction contours. The final contours will be reflected in the post-construction survey points.</p> <p>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.</p>						
Name		Signature		Company		Date
Devin Jen				ERM		8/29/2023

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Required Photos



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



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



GPS Location	See photograph.	GPS Location	See photograph.
Description	The pictured boulder will not be placed in the exact same spot in order to ensure proper stabilization of slopes and overall restoration efforts.	Description	The photo shows a large feature rock near the edge of the LOD.

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Optional Photos

GPS Location	See photograph.	GPS Location	See photograph.
Description	The photo shows the heavily undercut bank located within the LOD.	Description	The picture shows the removal of the top 12 inches of stream substrate on 8/21/2023.
GPS Location	See photograph.	GPS Location	See photograph.
Description	The picture shows the excavated trench at the start of the work day on 8/22/2023.	Description	The picture shows the pipe placed in the trench with supporting sandbags at the beginning of the work day on 8/23/2023.
GPS Location	See photograph.	GPS Location	See photograph.
Description	The picture shows the flume that was placed in order to ensure flow would not be impeded in the event of heavy rains.	Description	The picture shows the trench having been backfilled and the flume in place at the end of the workday on 8/24/2023.