Stream Biological Conditions EA Report

Project Name	H-600 Pipeline Spread F	**AFE**	124300135	**Spread**	H-600 Pipeline Spread F
Contractor	Price Gregory			**Report #**	345
Environmental Auditor	LeMaster Kristen			**Date/Time**	11/9/2023 9:13 AM

Stream ID	S-UV2	**Crossing Start Date**	11/13/2023	**Crossing Completion Date**	11/25/2023
Milepost	156.05	**Pre-Con Assessment Date**	11/9/2023	**Post-Con Assessment Date**	11/25/2023
Station	8239+60	**Bankfull Width (ft.)**	17.5	**Riffle:Pool Complexes Present?**	No
State	WV	**Stream Classification**	Perennial		
County	Greenbrier	**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?	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	4
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.)	2	3

AFE	124300135	Date/Time	11/9/2023 9:13 AM	Report #	345

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)	1	1

Additional Notes

Pre-Construction Notes
Pre-Construction Meeting - 11/9/2023
16. Both banks severely eroded. Modifications will need to be made for restoration.
17. Trench location has been mowed, in addition to seasonal die-back. Bell hole going away side.

11/13/2023 - Set up pumps in stream. Damming stream using sandbags (Photo 1). Began excavating first 12 inches of stream substrate (Photo 2). Material segregated and placed in upland work area. Began utilizing pump-around system. Began excavating trench though subsoil in aquatic resource (Photo 3). Began pumping from trench. Put flume pipe in-place.

11/14/2023-11/15/2023 - Removed flume pipe. Pump-around system also being utilized. Pumped water from trench in aquatic resource area. Excavation of trench though aquatic resource area completed. Flume pipe reinstalled. Additional work ongoing outside of aquatic resource area throughout the day.

11/16/2023 - Minimal work onsite due to utilities issue. No work in aquatic resource. Dewatering of trench and pump-around system continue to operate. Flume pipe remained in place.

11/17/2023 - Pump-around system being utilized. Pumped water from trench in aquatic resource area. Excavation of trench towards exposed pipe in upland and towards W-UV8 (Photo 4). Additional work ongoing outside of aquatic resource area.

11/18/2023 - Pump-around system being utilized. Pumped water from trench in aquatic resource area. Sandbag "pillows" added to trench for padding. Additional work ongoing outside of aquatic resource area.

11/20/2023-11/21/2023 - Flume pipe removed. Pump-around system also being utilized. Pumped water from trench in aquatic resource area. Additional sandbag "pillows" added to trench. Pipe walked to trench and lowered into trench through aquatic resource area (Photo 5). Additional work ongoing outside of aquatic resource area including welding, x-ray, sandblasting, and coating of pipe lowered into the trench. Rain Event (11/21/2023).

11/22/2023 - Extra pumps added to pump-around system to maintain bypass after rain event. Pumped water from trench in aquatic resource area until backfilled. River weights installed. Trench breakers constructed (Photo 6). Backfilled in a north to south direction.

11/24/2023 - Backfill in S-UV2 and adjacent section of W-UV8. Substrate restored. Stream bed/bank contouring and restoration aided by survey (Photo 7). US and DS dams removed. Stream banks seeded (Photo 8) and Curlex installed. Pumps shut off and hoses removed. Stream flow restored. Stream bed contoured slightly to allow for stream flow.

11/25/2023 - Verified no additional contouring required, stream flowing through restored area and restoration completed.

Post Construction Notes
8. Alterations made during stream bank restoration. Slope cut back to reduce severity of bank angles and potential for bank failure.
16., 17. Crossing and riparian areas have been recently restored. These areas will be monitored until 80% vegetative coverage has been achieved and areas that do not have 80% vegetative cover within 30 days will be reseeded.
Timber mat bridge remains in place for travel lane.

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
LeMaster Kristen		Potesta & Associates, Inc.	11/25/2023

AFE	124300135	Date/Time	11/9/2023 9:13 AM	Report #	345

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.

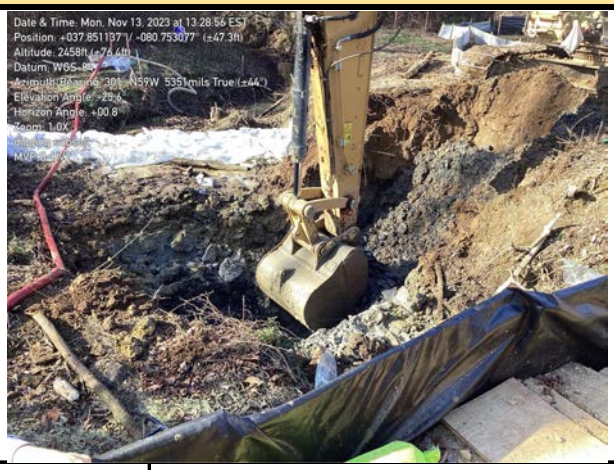
GPS Location	See Photo
Description	Downstream view of unimpacted area during post-construction assessment.

GPS Location	See Photo
Description	Photo 1: Installing upstream and downstream dams.

GPS Location	See Photo
Description	Photo 2: Removing top 12 inches of substrate and loading into Marooka.

AFE	124300135	Date/Time	11/9/2023 9:13 AM	Report #	345

Optional Photos



GPS Location	See Photo
Description	Photo 3: Excavating trench in aquatic resource area.

GPS Location	See Photo
Description	Photo 4: Excavating trench.

GPS Location	See Photo
Description	Photo 5: Lowering pipe into trench through aquatic resource area.

GPS Location	See Photo
Description	Photo 6: Backfilling and trench breaker construction.

GPS Location	See Photo
Description	Photo 7: Restoration and survey.

GPS Location	See Photo
Description	Photo 8: Stream bank seeding.