Stream Biological Conditions EA Report

Project Name	H-600 Pipeline Spread F	**AFE**	124300135	**Spread**	H-600 Pipeline Spread F
Contractor	Price Gregory			**Report #**	363
Environmental Auditor	Luke Fultz			**Date/Time**	11/16/2023 11:12 AM

Stream ID	S-K22	**Crossing Start Date**	11/28/2023	**Crossing Completion Date**	12/7/2023
Milepost	155.43	**Pre-Con Assessment Date**	11/16/2023	**Post-Con Assessment Date**	12/7/2023
Station	8206+70	**Bankfull Width (ft.)**	7.4	**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?	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	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.)	2	2

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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)	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	1

Additional Notes

Pre-Construction Notes
Pre-Construction Meeting - 11/16/2023
19. Timber mat (TM) bridge in place (Photo 1).
S-K22 shares riparian buffer with S-K21 which is located to the north on the ROW. Dates where TM bridge constructed over aquatic resource (AR) included in this report.

11/20/2023 - Survey onsite to shoot OHWM. Adjusted TM bridge over resource (but outside AR). Moved large rocks and topsoil outside of aquatic resource area (ARA). Prepared headers for moving TM bridge over aquatic resource. Began moving TM bridge over aquatic resources.
11/21/2023 - Rain Event. No work in AR.
11/23/2023 - 1.02" of precipitation recorded in previous 24 hrs near site. Resource crossing not anticipated to start today. Additional footers are being placed under TM across resource. Excavation outside resource. New TM installation inside riparian buffer.
11/24/2023 - Welded outside of resource. Moved material in buffer. Moved remaining section of TM bridge to lower end of LOD. Dug test pit in RDB riparian buffer. New TM bridge complete (See Photo 2 - 11/25/2023).
11/25/2023 - Aquatic resource looks good. Mats in S-K21 result in some equipment in riparian buffer of ARA throughout day while hammering and excavating of trench.
11/26/2023 - Equipment in riparian zone occasionally throughout rest of day to facilitate excavation of trench on RDB of S-K21.
11/27/2023 - No work in resource.
11/28/2023 - Excavated first 12" of stream substrate (Photo 3) and segregated substrate within work area. Installed flume to account for any possible stream flow. Crossing section prepped for blasting.
11/29/2023 - Drilled for blasting through ARA (Photo 4). Work outside of ARA.
11/30/2023 - Prepped for blasting. Blasted. Excavated in ARA (Photo 5) and replaced flume pipe. Hammered rock in resource area. Installed trench box in riparian area on RDB. Reset flume pipe.
12/1/2023 - Pumped water from trench in ARA. Hammered and excavated in trench in ARA. Work ongoing outside ARA.
12/2/2023 - Pumped water from trench in ARA. Placed sandbags in trench for padding. Removed flume pipe. Placed pipe in trench (Photo 6). Replaced flume pipe. Welding ongoing.
12/4/2023 - Pumped water from trench in ARA. Work outside ARA. Flume remained in place.
12/5/2023 - Pump water from trench in ARA. Began constructing trench breakers. Added padding and backfilled in ARA and between trench breakers. Completed trench breakers. Flume remained in place.
12/6/2023 - Padded and backfilled subsoil in ARA (Photo 7). Flume remained in place.
12/7/2023 - Backfilled subsoil in riparian buffer. Restored subsoil in ARA. Constructed dam to allow flume removal. Survey onsite to shoot elevations. Removed flume. Contoured ARA. Restored substrate (Photo 8). Removed dams. Seeded banks. Installed curlex and P1 fencing.

Post Construction Notes
16., 17. Crossing and riparian areas have been recently restored. These areas will be monitored until 80% vegetative cover has been achieved and areas that do not have 80% vegetative cover within 30 days will be reseeded.
19. Does not include timber mats that remain 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
Luke Fultz		Potesta	12/7/2023

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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: TM bridge on 11/20/2023.

GPS Location	See Photo
Description	Photo 2: TM bridge after moved to lower edge of ROW.

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Optional Photos

GPS Location	See Photo
Description	Photo 3: Excavated top 12 inches of substrate.

GPS Location	See Photo
Description	Photo 4: Drilling in aquatic resource area to prepare for blasting.

GPS Location	See Photo
Description	Photo 5: Excavating trench in aquatic resource area.

GPS Location	See Photo
Description	Photo 6: Lowering pipe into trench in aquatic resource.

GPS Location	See Photo
Description	Photo 7: Padding and backfilling.

GPS Location	See Photo
Description	Photo 8: Restoring substrate.