Stream Biological Conditions EA Report

Project Name	H-600 Pipeline Spread D	**AFE**	124300132	**Spread**	H-600 Pipeline Spread D
Contractor	Precision			**Report #**	287
Environmental Auditor	Todd Grant			**Date/Time**	10/10/2023 8:16 AM

Stream ID	S-F36b	**Crossing Start Date**	10/11/2023	**Crossing Completion Date**	10/25/2023
Milepost	105.08	**Pre-Con Assessment Date**	10/11/2023	**Post-Con Assessment Date**	10/25/2023
Station	5548+02	**Bankfull Width (ft.)**	20.0	**Riffle:Pool Complexes Present?**	No
State	WV	**Stream Classification**	Perennial		
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	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	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

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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	2

Additional Notes

10/11/2023 - A dam and pump system to maintain flow around the permitted impacted area was installed. Large rocks, cobble, and the streambed substrate were removed and segregated separately into super-sacks. Stream bank material was removed and segregated on top of plastic in an upland area. Ditching was started on the going away side (GAS) from the loose end of pipe to the buffer of stream S-F36b. A flume pipe was installed and flow restored to the stream. The flume or dam and pump conveyance systems were used and maintained as needed during crossing. Drilling activities for blasting began in the upland area on the coming in side (CIS) of S-F36b. T. Grant

10/12/2023 - 10/17/2023: The contractor completed drilling and blasting activities through stream S-F36b. Hammering was required to complete the ditch from the CIS loose end to the GAS loose end. Trench boxes were installed and dewatering activities were conducted throughout the crossing as needed. T. Grant

10/18/2023-10/19/2023: A section of pipe that expanded from the CIS stream bank to the GAS loose end was lowered in and welded. Next, another section of pipe was lowered in and welded to the previous section that expanded from the stream bank to the CIS loose end. Sandblasting and coating activities were performed on the welds. T. Grant

10/20/2023 - No construction activities were performed due to a rain out event. T. Grant

10/21/2023 - Dewatering of the ditch was required following the previous day's rain event. Maintenance was done on the stream flume pipe and downstream flume discharge. The tie in weld on the CIS loose end started, while padding material was prepared using a sifting bucket. T. Grant

10/22/2023 - The final tie in welds were completed, x-rayed, and sandblasted. Maintenance on the dewatering structures was in progress, while the upland trench breakers were being installed. T. Grant

10/23/2023 - Sandblasting and coating activities on the CIS of stream S-F36b were completed. Once the trench box was removed, padding and backfilling in the upland area on the GAS began. Saddle weights were installed at the stream and construction of the trench breakers for the stream began just outside the high water marks. T. Grant

10/24/2023 – With the final padding and backfilling of the ditch, the trench breakers for the stream were completed at Sta. #5547+89 and Sta. #5548+22. The final restoration of the stream channel and banks were started, but the contractor ran out of light by the end of day. T. Grant

10/25/2023 – Survey verified that the large rocks, cobble, and the streambed substrate were restored to preconstruction elevations and contours. Stream S-F36b banks were properly stabilized and the disturbed areas were seeded with the appropriate permanent seed mix in accordance with Appendix B: Restoration Work Plan of the Mountain Valley Pipeline Comprehensive Stream and Wetland Monitoring, Restoration, and Mitigation Framework before the stream flow was reestablished.

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
Todd Grant	Todd R. Grant	SWCA	10/25/2023

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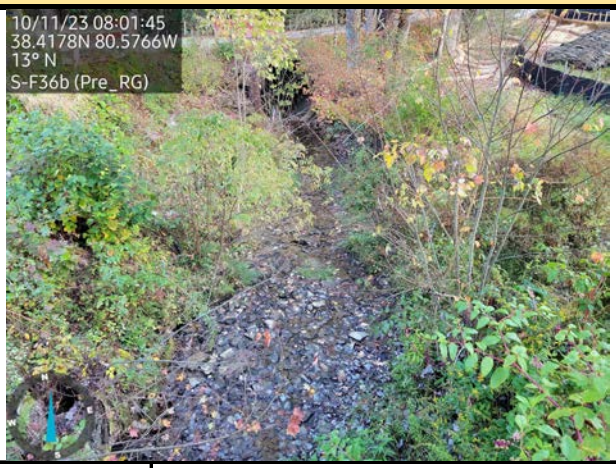
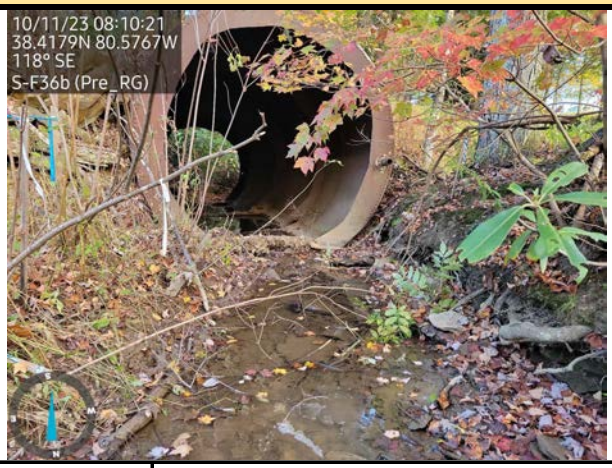
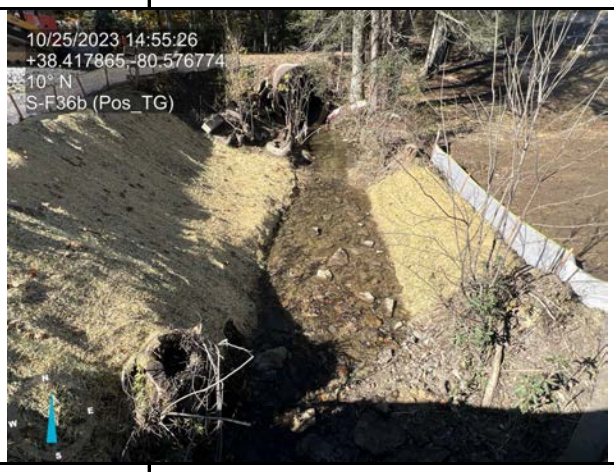
Required Photos



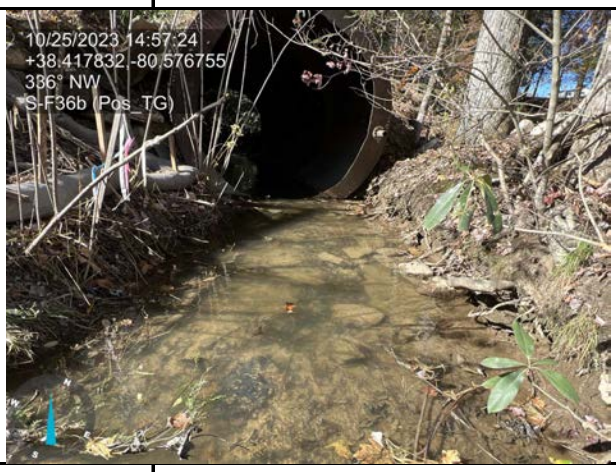
GPS Location	See photo above
Description	Downstream view of permitted impact area during pre-construction assessment.



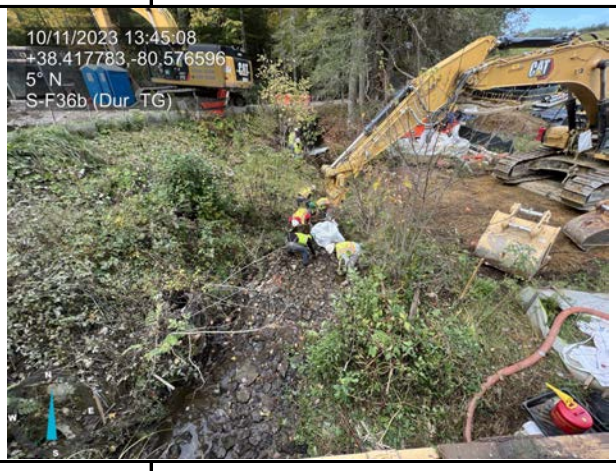
GPS Location	See photo above
Description	Downstream view of unimpacted area during pre-construction assessment.



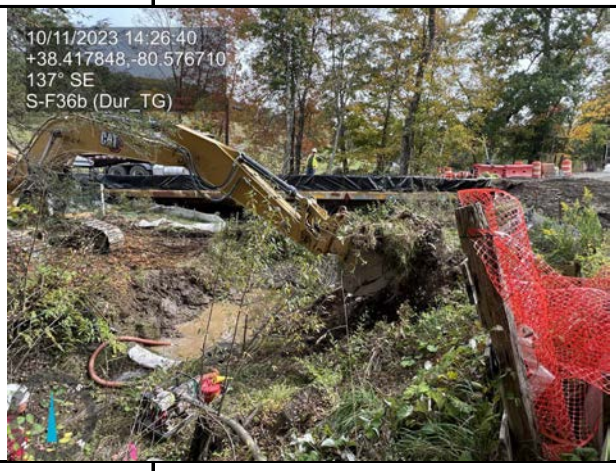
GPS Location	See photo above
Description	Downstream view of permitted impact area during post-construction assessment.



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



GPS Location	See photo above
Description	Downstream view of the contractor crew placing stream cobble in a supersack.



GPS Location	See photo above
Description	View of contractor removing and segregating top 12 inches of stream bank material.

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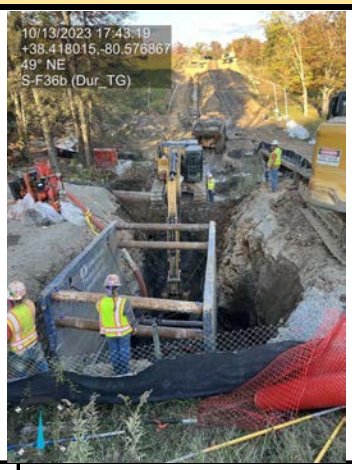
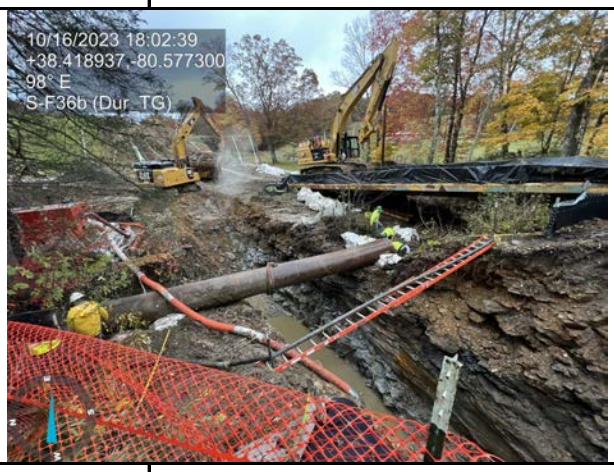
Optional Photos

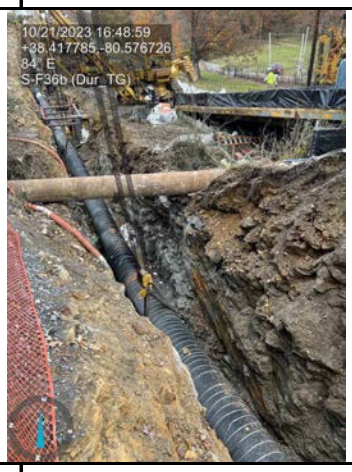


GPS Location	See photo above
Description	View of ditch excavation approaching stream S-F36b on GAS.

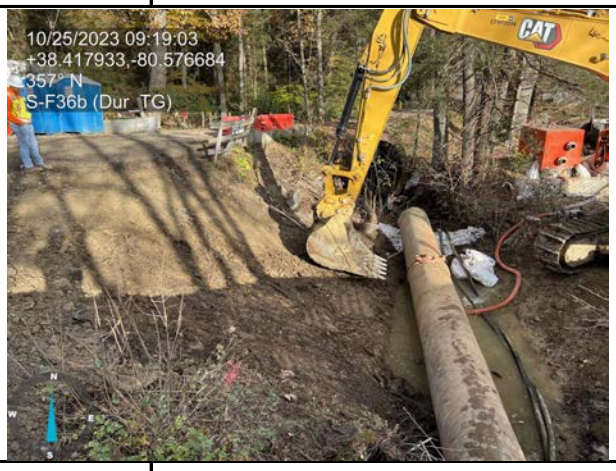
GPS Location	See photo above
Description	View of stream S-F36b flume pipe installed during ditch excavation.



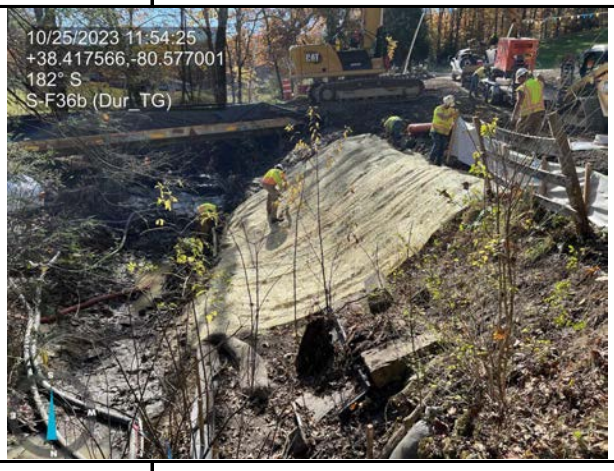
GPS Location	See photo above
Description	View of the contractor completing ditch excavation past the flume pipe of stream S-F36b on the CIS.



GPS Location	See photo above
Description	View of tie in activities under the flume pipe at stream S-F36b.



GPS Location	See photo above
Description	View of GAS streambank being restored to original contours.



GPS Location	See photo above
Description	View of GAS streambank being stabilized with erosion blanket.