Stream Biological Conditions EA Report

Project Name	H-600 Pipeline Spread C	**AFE**	124300131	**Spread**	H-600 Pipeline Spread C
Contractor	Precision			**Report #**	378
Environmental Auditor	Curtis Barbacci			**Date/Time**	11/14/2023 9:23 PM

Stream ID	S-T29	**Crossing Start Date**	11/15/2023	**Crossing Completion Date**	11/20/2023
Milepost	90.83	**Pre-Con Assessment Date**	11/11/2023	**Post-Con Assessment Date**	11/21/2023
Station	4795+94	**Bankfull Width (ft.)**	19.5	**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 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.)	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	1

Additional Notes

Expanded notes from question 17: A post construction rating of 4 was given. A rain event during the crossing created poor soil conditions limiting restoration of the 50’ riparian buffer zone by the time the crossing was completed. An environmental crew is scheduled to restore this area the following day.

11/15/23
The contractor has previously excavated the ditch line on both sides of the stream up to the 10' buffer. A sandbag dam with 3-inch pumps were installed to manage stream flow. The banks and the 10’ buffer zones topsoil was stripped and segregated prior to the top 12” of stream substrate between the high water marks being placed in labeled super sacks and stockpiled. An additional clay layer underneath the substrate material was segregated and placed into super sacks. By the end of the day trenching operations were completed through the feature.

11/16/23
The stream section of the pipe was lowered in and welding, x-ray and coating operations on the coming in side (CIS) and going away side (GAS) of the stream were conducted for the remainder of the day.

11/17/23
Once the welds were x-rayed and coated, bentonite trench breakers were installed on the CIS and GAS of the streams high water marks at station number 4796+44 and 4797+32, respectively. Padding and backfilling of the pipe was brought up to within the top 18” of preconstruction elevations through the stream channel and 10’ buffer zone by the end of the day.

11/18/23-11/19/23
No construction activities were conducted inside the feature due to inclement weather. The dam and pump around continued to be managed during this time.

11/20/23
The stream substrate was replaced within the stream channel in reverse sequential order, beginning with the additional clay layer. Survey verified that the top 12” of stream substrate material and boulders were restored to their preconstruction elevations and contours. The 10’ buffer zones were restored and the proper seed mix was applied to the disturbed areas of the stream bank. Erosion control devices and silt fence were installed on the boundaries of S-T29 prior to reestablishing stream flow.

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
Curtis Barbacci		SWCA	11/21/2023

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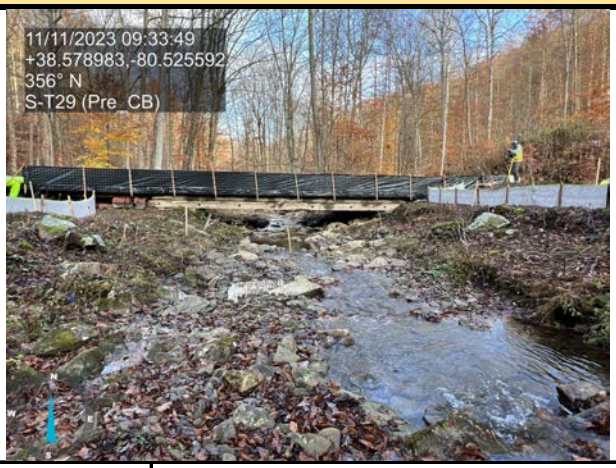
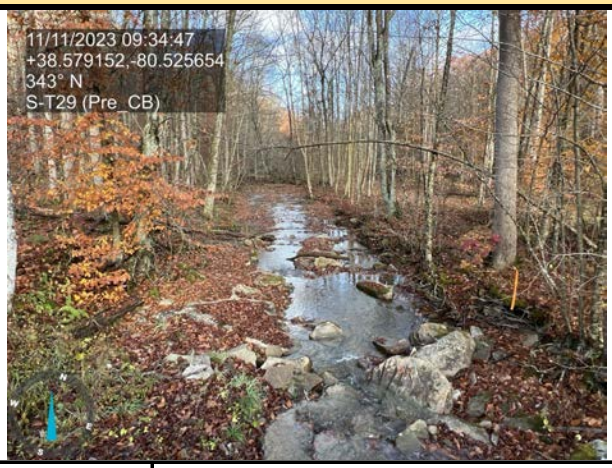
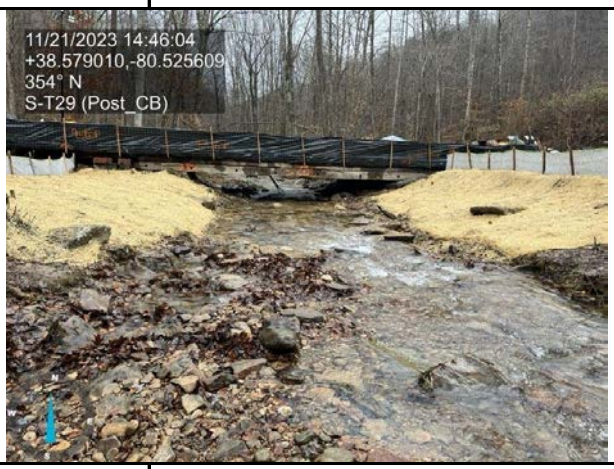
Required Photos



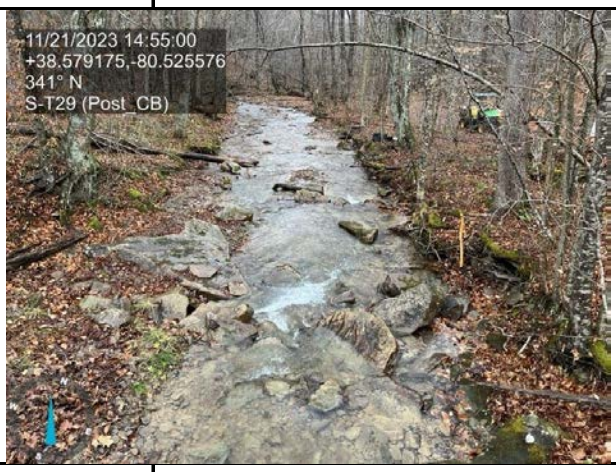
GPS Location	See photo
Description	Downstream view of permitted impact area during pre-construction assessment.



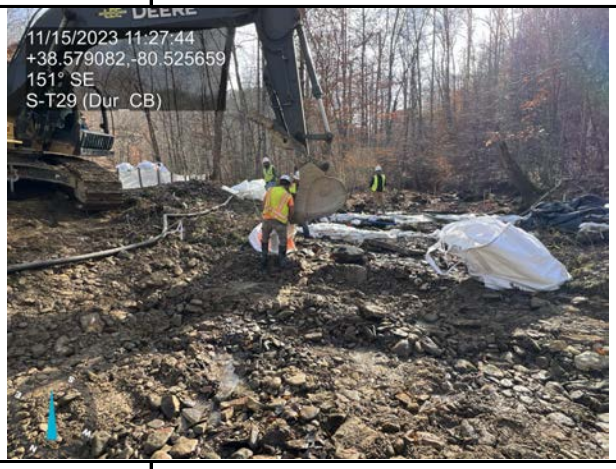
GPS Location	See photo
Description	Downstream view of unimpacted area during pre-construction assessment.



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	View of upstream sandbag dam and contractor removing stream substrate materials.

GPS Location	See photo
Description	View of clean downstream discharge and energy dissipator.

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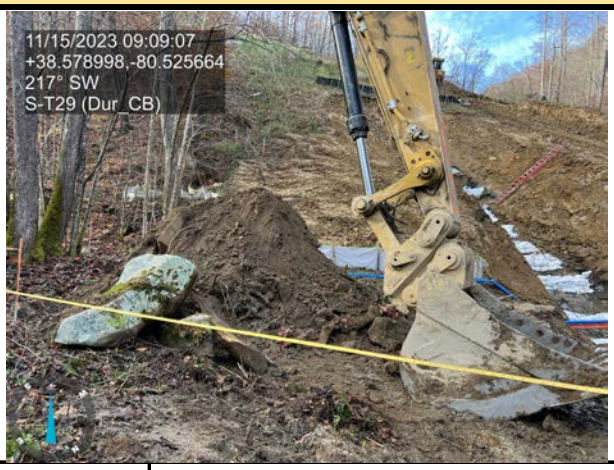
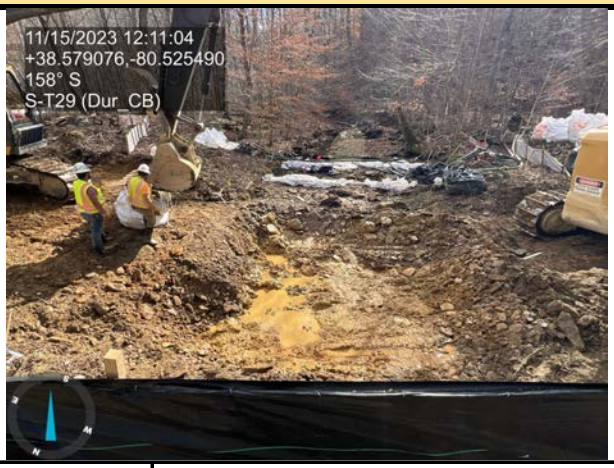
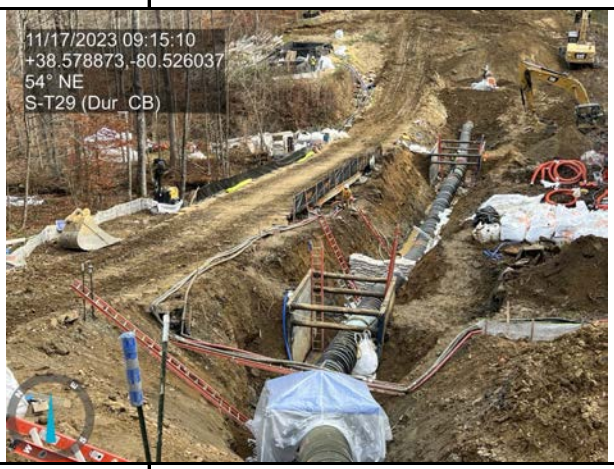
Optional Photos



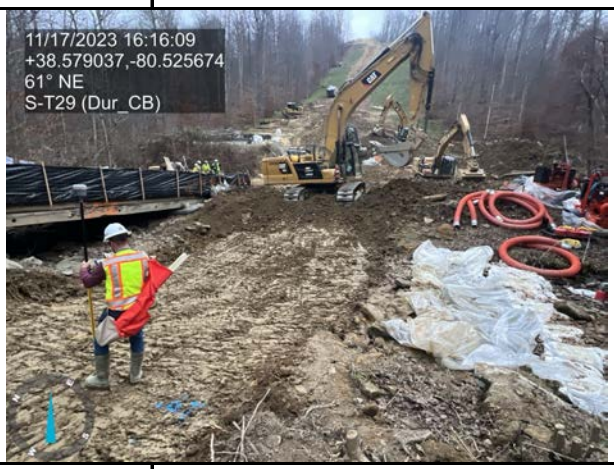
GPS Location	See photo
Description	View of stream bank topsoil segregated.



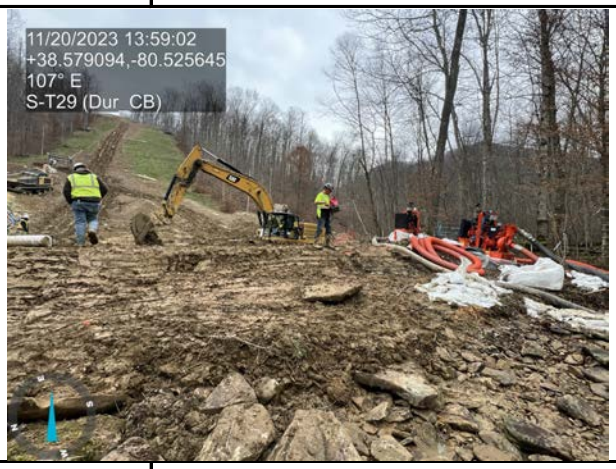
GPS Location	See photo
Description	View of streambed substrate and soils removed from within the ditch line.



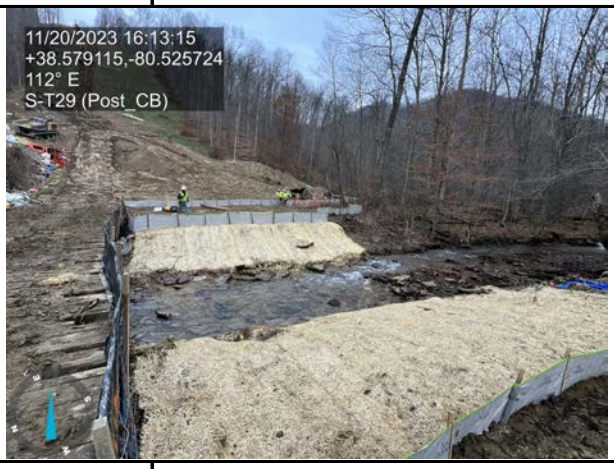
GPS Location	See photo
Description	View of pipe section lowered into ditch through stream S-T29.



GPS Location	See photo
Description	View of survey checking stream bank elevations.



GPS Location	See photo
Description	View of contractor installing permanent seed mix to the CIS bank of S-T29.



GPS Location	See photo
Description	Standing at GAS bank looking towards CIS bank of stream. Silt fence installed 10-feet from the top of bank.