Stream Biological Conditions EA Report

Project Name	H-600 Pipeline Spread C	**AFE**	124300131	**Spread**	H-600 Pipeline Spread C
Contractor	Precision			**Report #**	439
Environmental Auditor	Paul Hixon			**Date/Time**	12/12/2023 5:45 PM

Stream ID	S-KK2	**Crossing Start Date**	12/4/2023	**Crossing Completion Date**	12/12/2023
Milepost	82.12	**Pre-Con Assessment Date**	11/15/2023	**Post-Con Assessment Date**	12/12/2023
Station	4335+96	**Bankfull Width (ft.)**	3.0	**Riffle:Pool Complexes Present?**	No
State	WV	**Stream Classification**	Ephemeral		
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	Mud/Silt/Clay	Mud/Silt/Clay
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	2
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	4
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

12/4/23 - Stream S-KK2 crossing commenced due to the close proximity of stream S-KK2 to stream S-KK3b. A sand bag dam and pump around conveyance system was erected in the ephemeral stream S-KK2 prior to the topsoil from the stream banks being segregated and stockpiled. The top 12' of the streambed was removed and placed in numbered super sacks prior to the excavation of the trench on the going away side (GAS) of the stream. By the end of the day trenching had made it to the stream channel of S-KK2 with the aid of a rock hammer.

12/5/23 to 12/8/23 – Excavation and hammering of the rock layer continued from S-KK2 towards the coming in side (CIS) loose end. On the 5th, a short section of pipe that extended from the CIS of S-KK3b to the GAS of S-KK2 was lowered in and welded; with x-ray and coating being completed on the 6th. On the 7th the tie-in section of pipe from S-KK2 to the CIS loose end was lowered in and welded; with x-ray and coating being completed on the 8th.

12/9/23 – Bentonite trench breakers were installed within 25 feet of high water mark on both S-KK3b and S-KK2 stream crossings prior to padding of the pipe. Backfilling commenced on both stream crossings, but the emphasis was concentrated on completing S-KK3b by the end of the day.

12/10/23 - No Work performed on Sunday

12/11/23. - No Work performed on S-KK2 due to poor soil conditions created by the rain event on Sunday.

12/12/23 – Once backfilling was completed, stream banks and buffer zones were restored using previously segregated topsoil. The proper seed mixture for the 10ft. buffer zones were applied prior the erosion control blankets and super silt fence installations. Survey verified that the top 12" of substrate for S-KK2 between the high water marks of the stream channel were restored to pre-construction elevations and contours. The sand bag dam and pump around conveyance system was removed to allow natural 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
Paul Hixon		SWCA	12/12/2023

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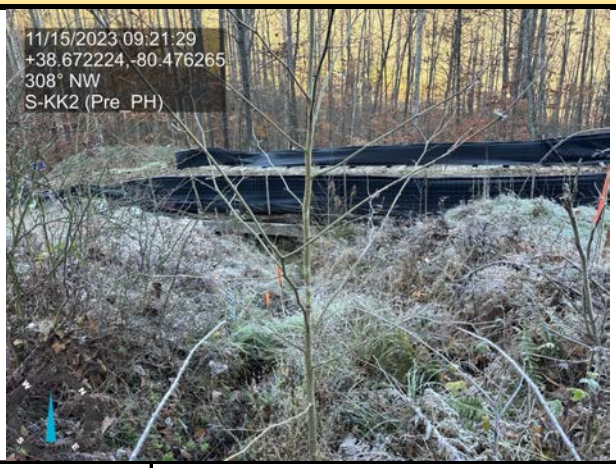
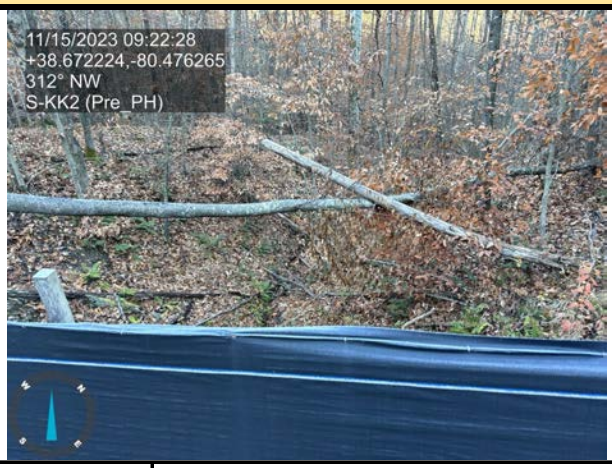
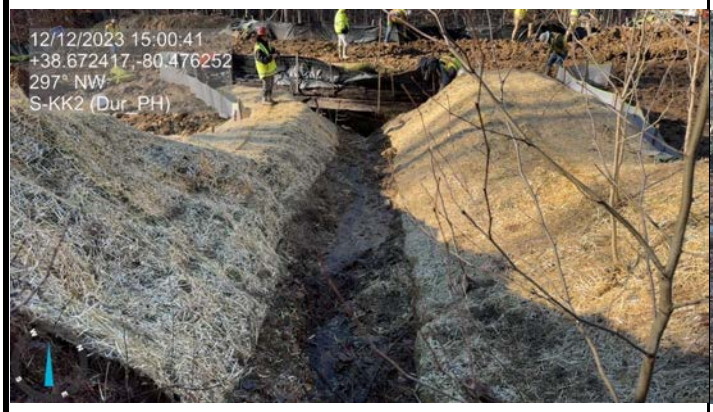
Required Photos



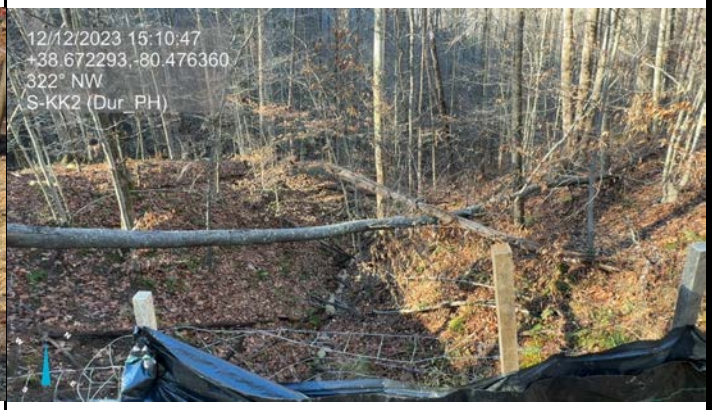
GPS Location	See Photo
Description	Downstream view of permitted impact area during pre-construction assessment.



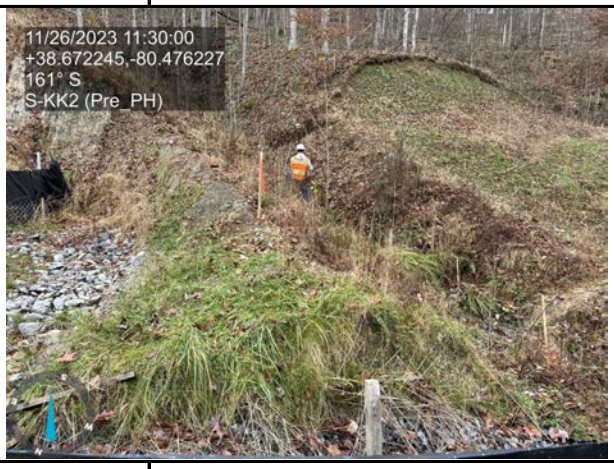
GPS Location	See Photo
Description	Downstream view of unimpacted area during pre-construction assessment.



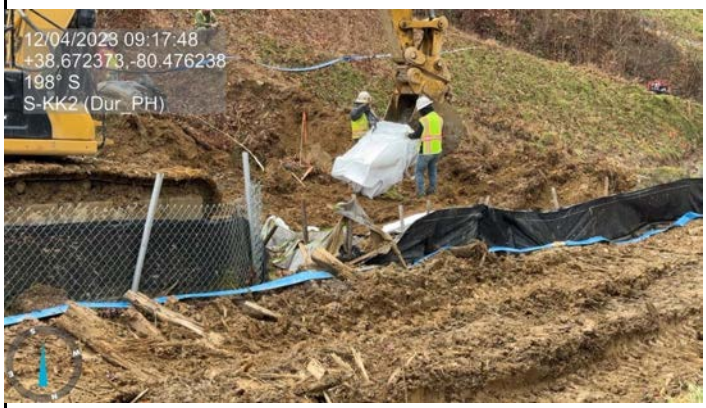
GPS Location	See Photo
Description	Downstream view of permitted impact area during post-construction assessment.



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



GPS Location	See Photo
Description	Pre-construction survey of S-KK2 was done due to conflicting data.



GPS Location	See Photo
Description	The soil substrate was removed in numbered sacks for future restoration.

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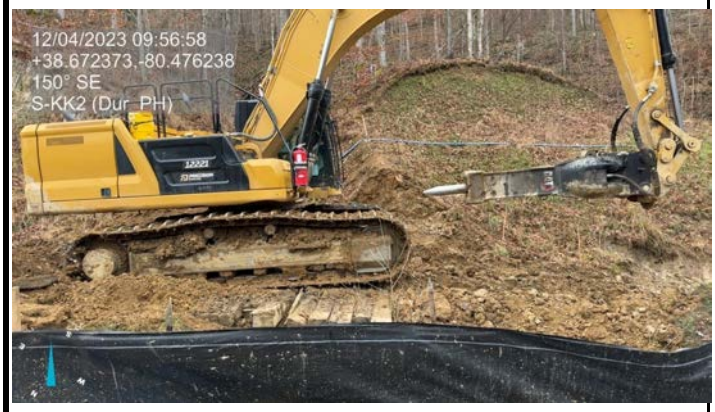
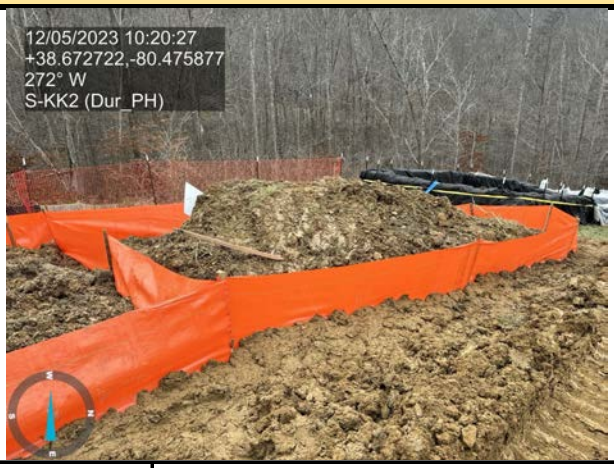
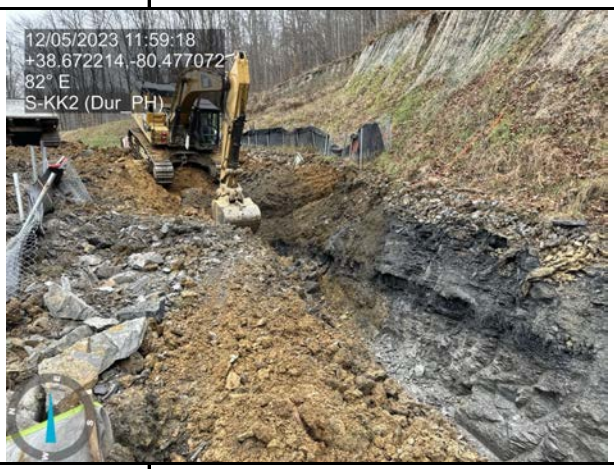
Optional Photos



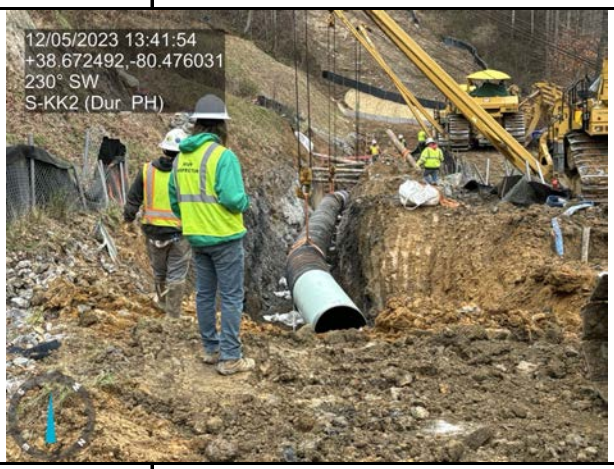
GPS Location	See Photo
Description	Using timber mats while rock hammering through S-KK2.



GPS Location	See Photo
Description	Segregation of the top 12" of stream bank soil.

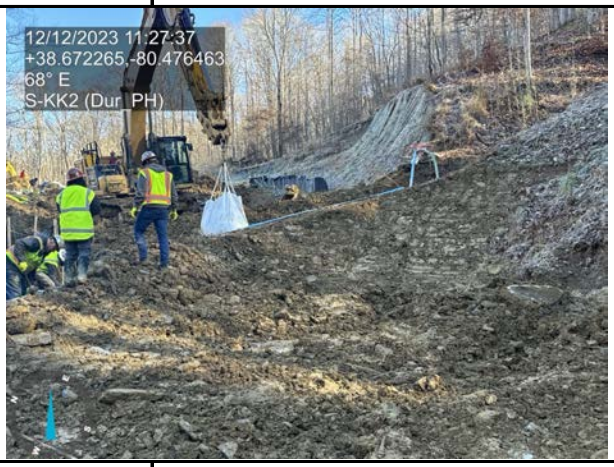


GPS Location	See Photo
Description	Excavation of the rock layer through S-KK2.



GPS Location	See Photo
Description	Lowered in a section of pipe through S-KK2.

GPS Location	See Photo
Description	Pipe extending through the resource S-KK2.



GPS Location	See Photo
Description	Restoring of stream substrate using the numbered sacks.