Stream Biological Conditions EA Report

Project Name	H-600 Pipeline Spread F	**AFE**	124300135	**Spread**	H-600 Pipeline Spread F
Contractor	Price Gregory			**Report #**	15
Environmental Auditor	Beth Burdette			**Date/Time**	7/31/2023 12:30 PM

Stream ID	S-L4	**Crossing Start Date**	8/1/2023	**Crossing Completion Date**	8/8/2023
Milepost	172.00	**Pre-Con Assessment Date**	7/31/2023	**Post-Con Assessment Date**	8/15/2023
Station	9081+60	**Bankfull Width (ft.)**	8.0	**Riffle:Pool Complexes Present?**	No
State	WV	**Stream Classification**	Perennial		
County	Summers	**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	2	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.)	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)	4	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

PRE-CONSTRUCTION NOTES
*BANKFULL WIDTH MEASURED AT OHWM STAKES.
15. SUBSTRATE NOTED AS COBBLE DOMINANT WITH SMALL SECTIONS OF BOULDER.
18. LOW HABITAT SCORE DUE TO LACK OF STREAM FLOW (CHANNEL DRY WITH EVIDENCE OF CONTINUOUS DRY CONDITIONS)

DAY 1 (7/31/2023)
PRE-CONSTRUCTION MTG 1400
MARK HOWARD IS EI

DAY 2 (8/1/2023) - STREAM CROSSING STARTED. VEGETATION CLEARED FROM BUFFER AND STREAM SUBSTRATE AND SOIL SEGREGATED (Photo 1). INSTREAM DAMS INSTALLED AND HOSE INSTALLED FOR DEWATERING STRUCTURE. DEWATERING STRUCTURE ALREADY IN PLACE. STUMPS REMOVED. HAMMER USED TO BREAK BEDROCK AT STREAM CROSSING AND ROCK REMOVED. FLUME PIPE INSTALLED AT DAMS.

DAY 3 (8/2/2023) - HAMMERING AND REMOVAL OF BEDROCK (Photo 2).

DAY 4 (8/3/2023) - DRILLING AND BLASTING POSTPONED DUE TO RAIN AND NO IN-STREAM ACTIVITY. DEP INSPECTOR ON-SITE.

DAY 5 (8/4/2023) - RAIN GAUGE 0.82 INCH RAIN PREVIOUS 24-HR. DRILLING OUTSIDE OHWM.

DAY 6 (8-5-2023) - TRENCHING AND SPOIL REMOVAL CONTINUED. SHAKER BUCKET USED TO SIFT FOR TRENCH PIPE BEDDING.

DAY 7 (8-6-2023) - STREAM CROSSING PIPE SECTION INSTALLED AND SURVEYED (Photos 3 and 4). SANDBAG TRENCH BREAKERS INSTALLED BOTH SIDES (Photos 5 and 6).

DAY 8 (8-7-2023) - ADDITIONAL BACKFILL PLACED IN TRENCH. STREAM TOPSOIL AND SUBSTRATE PLACED IN TRENCH. SURVEY STAKED TRENCH AND CREW FINE TUNED RESTORATION. SEED AND CURLEX INSTALLED LDB.

DAY 9 (8-8-2023) - NO WASH OUT IN ROW AFTER YESTERDAY'S HEAVY RAIN. RDB SOIL SEED AND CURLEX COMPLETED. MOVE ROCK SPOIL AND TRENCHING.

DAY 16 (8-14-2023) SEEDING AND PARTIAL CURLEX IN RIPARIAN BUFFER.
DAY 17 (8-15-2023) SEEDING AND CURLEX IN RIPARIAM BUFFER COMPLETE (Photos 7 and 8).

POST CONSTRUCTION NOTES.
16., 17. CROSSING AND RIPARIAN AREAS HAVE BEEN RECENTLY RESTORED. THESE AREAS WILL BE MONITORED UNTIL 80% VEGETATIVE COVER IS ACHIEVED. AREAS THAT DO NOT HAVE 80% VEGETATIVE COVER WITHIN 30 DAYS WILL BE RESEEDED.
18. LOW HABITAT SCORE DUE TO LACK OF STREAM FLOW.
TIMBER MAT REMAINS INPLACE 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
Beth Burdette		POTESTA	8/15/2023

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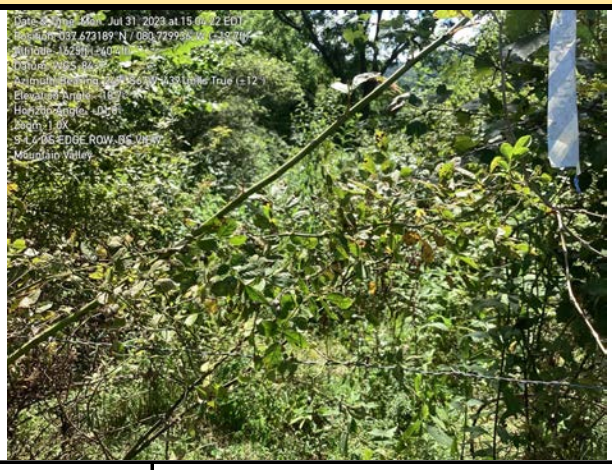
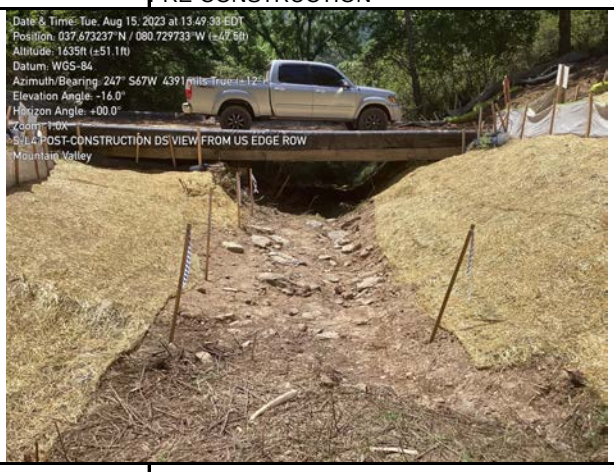
Required Photos

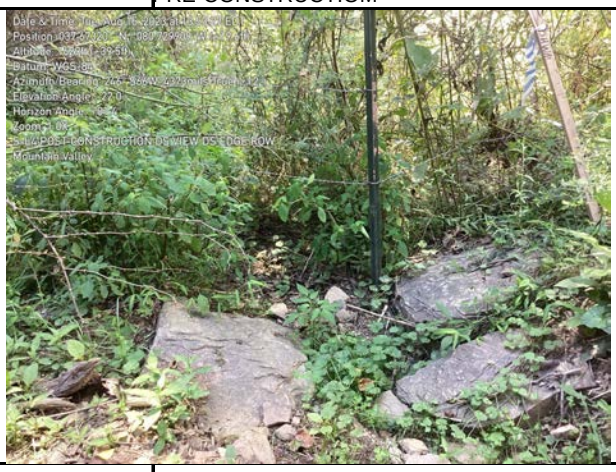
GPS Location	REFER TO PHOTO
Description	Downstream view of permitted impact area during pre-construction assessment. DS VIEW FROM US EDGE ROW PRE-CONSTRUCTION



GPS Location	REFER TO PHOTO
Description	Downstream view of unimpacted area during pre-construction assessment. DS VIEW FROM DS EDGE ROW PRE-CONSTRUCTIOM

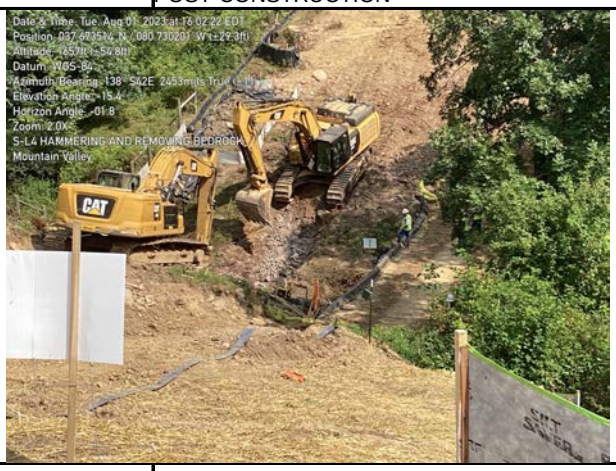


GPS Location	REFER TO PHOTO
Description	Downstream view of permitted impact area during post-construction assessment. DS VIEW FROM US EDGE ROW POST-CONSTRUCTION



GPS Location	REFER TO PHOTO
Description	Downstream view of unimpacted area during post-construction assessment. DS VIEW FROM DS EGDE ROW POST-CONSTRUCTION

GPS Location	REFER TO PHOTO
Description	Photo 1: Segregation of stream substrate and top12” of stream bed.



GPS Location	REFER TO PHOTO
Description	Photo 2. Instream hammering and rock removal.

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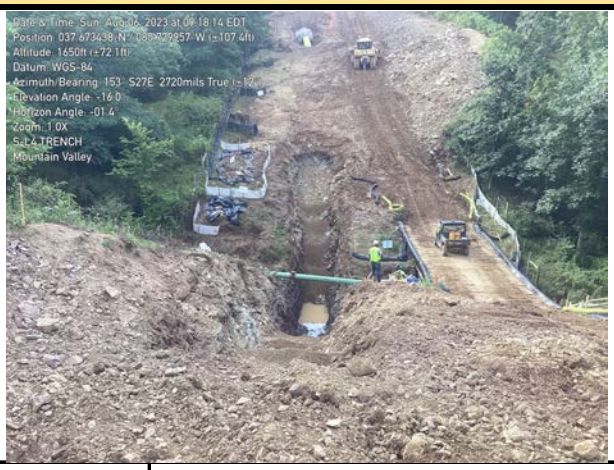
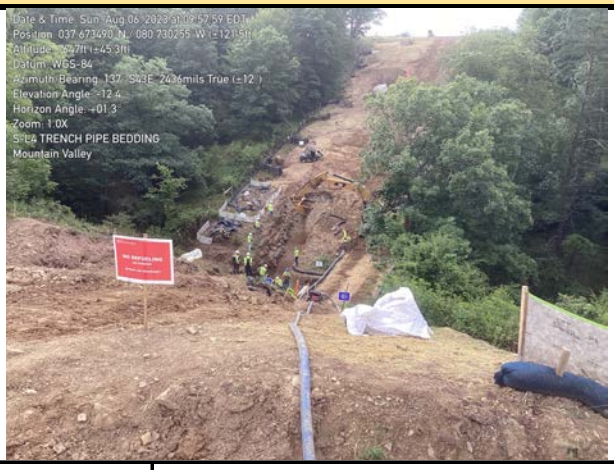
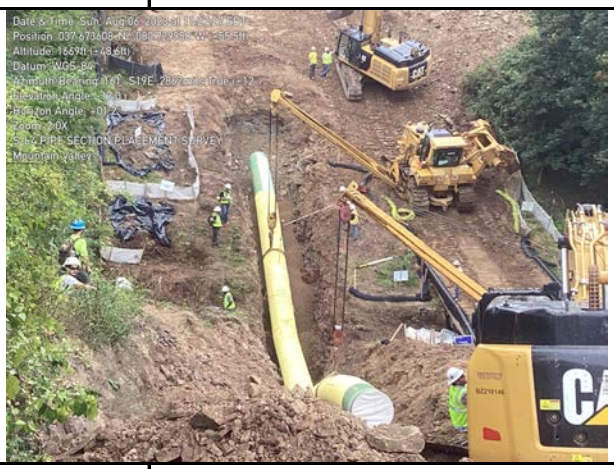
Optional Photos



GPS Location	REFER TO PHOTO
Description	Photo 3. Pipe trench.

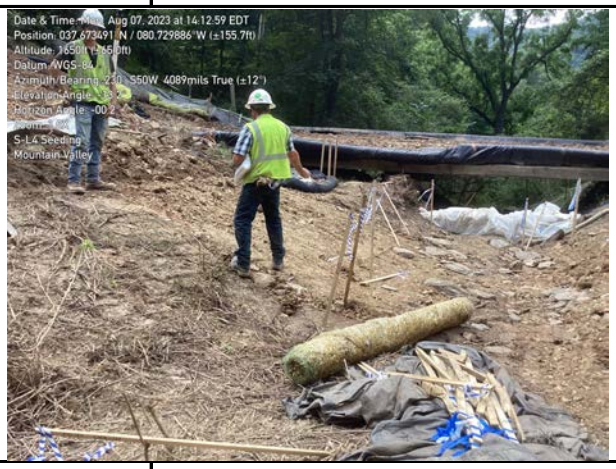


GPS Location	REFER TO PHOTO
Description	Photo 4. Pipe trench bedding.

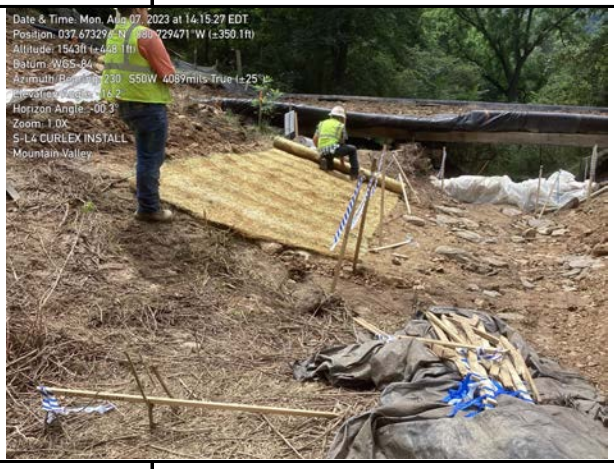


GPS Location	REFER TO PHOTO
Description	Photo 5. Pipe install at crossing and survey of location.

GPS Location	REFER TO PHOTO
Description	Photo 6. Backfilling trench and completing trench breakers.



GPS Location	REFER TO PHOTO
Description	Photo 7. Seeding stream banks.



GPS Location	REFER TO PHOTO
Description	Photo 8. Installing curlex.