Stream Biological Conditions EA Report

Project Name	H-600 Pipeline Spread F	**AFE**	124300135	**Spread**	H-600 Pipeline Spread F
Contractor	Price Gregory			**Report #**	330
Environmental Auditor	Charles Haden			**Date/Time**	10/30/2023 2:56 PM

Stream ID	S-A61	**Crossing Start Date**	11/10/2023	**Crossing Completion Date**	11/16/2023
Milepost	182.40	**Pre-Con Assessment Date**	10/30/2023	**Post-Con Assessment Date**	11/16/2023
Station	9630+72	**Bankfull Width (ft.)**	4.1	**Riffle:Pool Complexes Present?**	No
State	WV	**Stream Classification**	Ephemeral		
County	Monroe	**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.)	4	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	2

Additional Notes

Pre-Construction Notes
Pre-Construction Meeting - 10/30/2023
15. Mud/silt/clay was dominant substrate noted with some sand and loam observed.
17. Riparian buffer vegetation has been trimmed/mowed. W-A13 located in riparian buffer.
18. Stream was dry during assessment. No habitat variability.
19. Travel lane was not included in assessment.

11/10/2023 - Top 12 inches of stream substrate removed (Photo 1), separated and stored in an adjacent upland area. Excavation of subsoil in aquatic resource area (creating ditch). Site prepped for blasting. Blasting occurred. Dams constructed in channel using sandbags. Flume pipe added. Pump around system also in place for use as needed.

11/11/2023 - Flume pipe removed (no flow). Ditched staked out for excavation. Excavation began though aquatic resource area (Photo 2). Trench box installed outside of aquatic resource. Flume pipe reinstalled.

11/13/2023 - Flume pipe removed (no flow). Sandbags placed in trench for padding. Pipe placed in trench through aquatic resource area (Photo 3). Welding ongoing outside aquatic resource area. Survey onsite to verify pipe position in trench. Flume pipe reinstalled.

11/14/2023 - Sandblasting and coating of pipe in trench in aquatic resource area. Flume pipe removed (no flow). Survey onsite to verify pipe position in trench. Began backfilling in upland area. Began constructing first trench breaker (Photo 4). Flume pipe reinstalled. Trench box removed.

11/15/2023 - Flume pipe removed (no flow). Backfilling in upland area. Second trench breaker constructed. Survey onsite to record location of trench breakers. Backfilling of aquatic resource area (Photo 5). Aquatic resource area graded. Sandbag dams removed. Survey staked out aquatic resource (Photo 6). Topsoil restored in buffer. Substrate restored in aquatic resource. Survey verified elevations. Additional hand work completed by environmental crew on channel contours (Photo 7).

11/16/2023 - Raking of aquatic resource buffer. Seeding (Photo 8) and jute placement in buffer. Restoration complete.

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.
18. Stream was dry during assessment.
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
Charles Haden	Charles Haden	Potesta & Associates	11/16/2023

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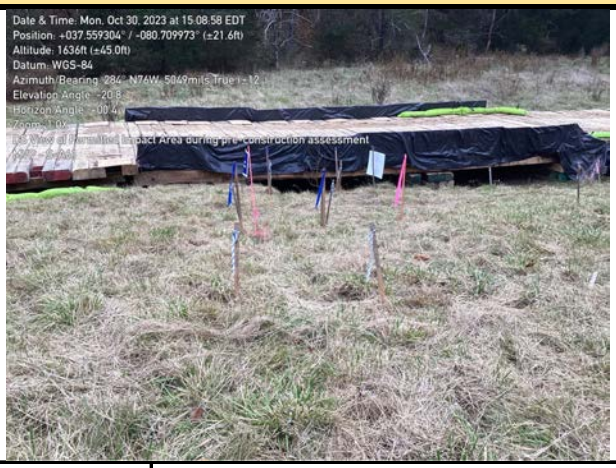
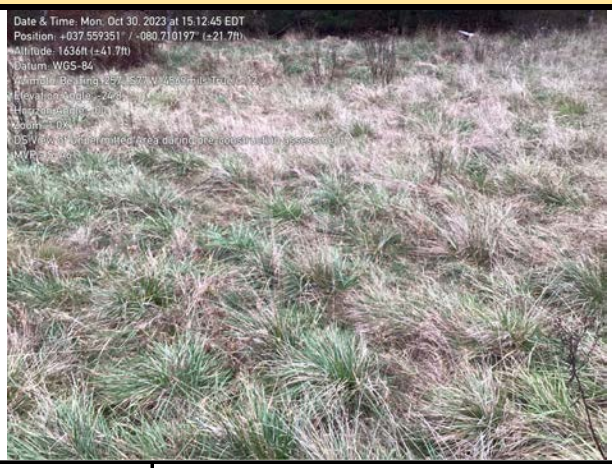
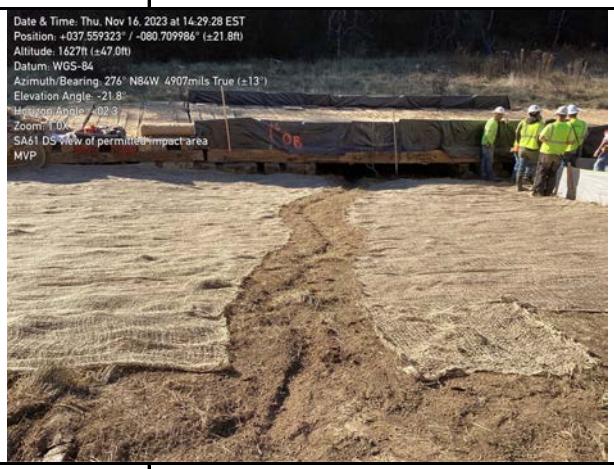
Required Photos



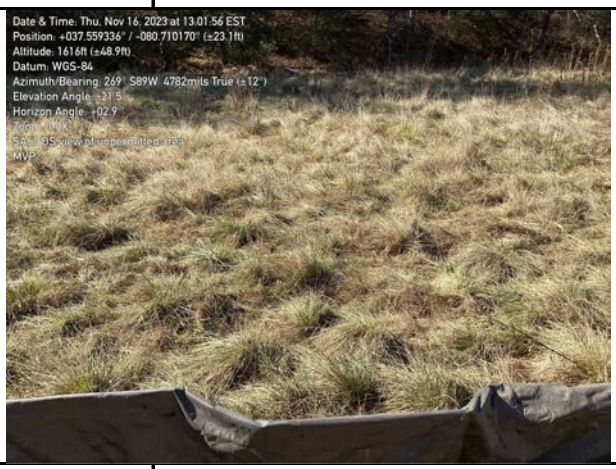
GPS Location	See Photo
Description	Downstream view of permitted impact area during pre-construction assessment.



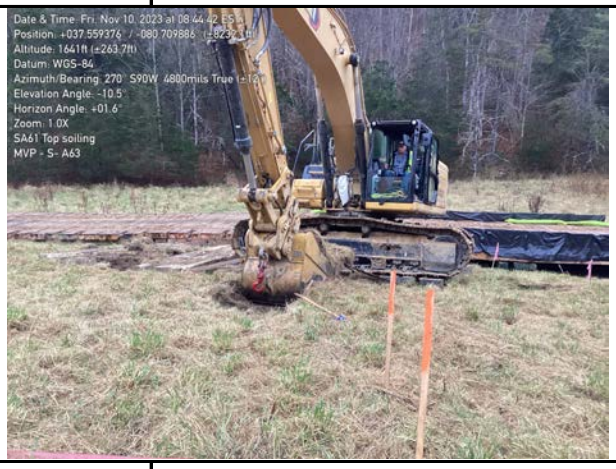
GPS Location	See Photo
Description	Downstream view of unimpacted area during pre-construction assessment.



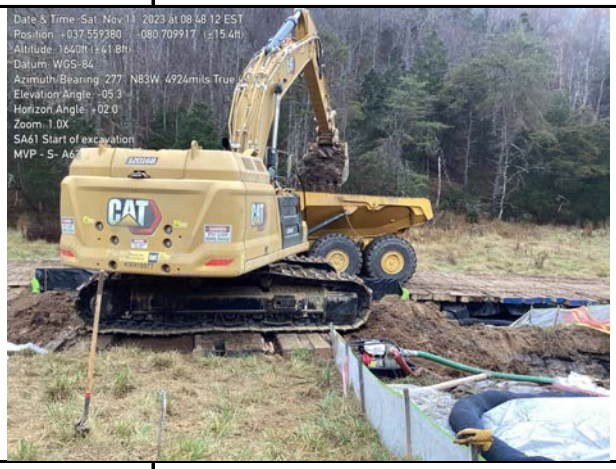
GPS Location	See Photo
Description	Downstream view of permitted impact area during post-construction assessment.



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



GPS Location	See Photo
Description	Photo 1: Excavation of top 12 inches of stream substrate.



GPS Location	See Photo
Description	Photo 2: Beginning to excavate trench in aquatic resource area.

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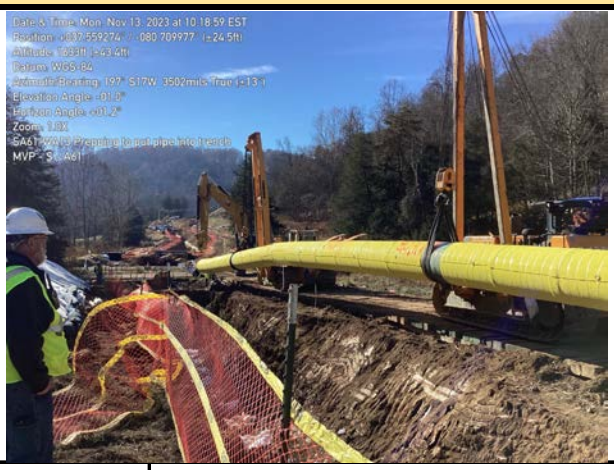
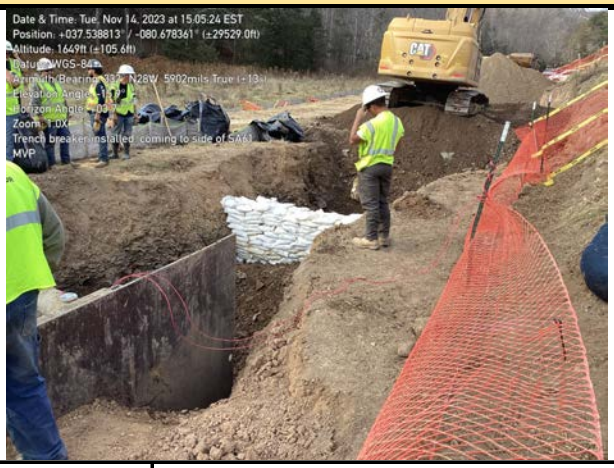
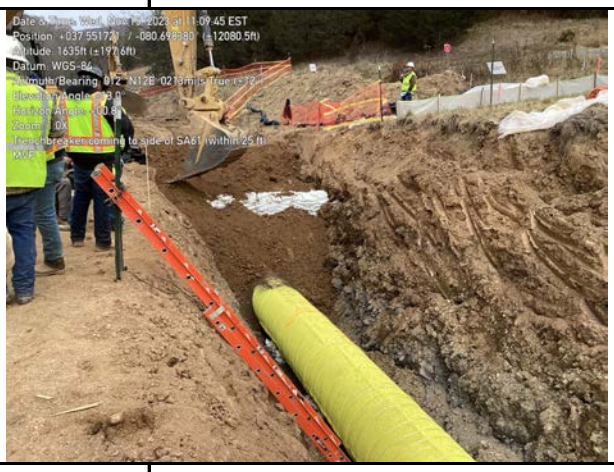
Optional Photos



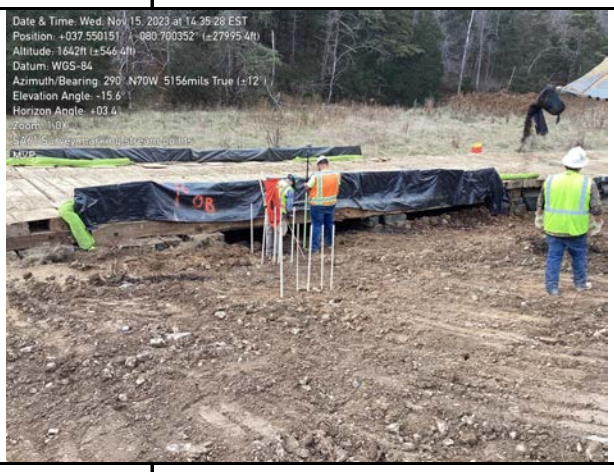
GPS Location	See Photo
Description	Photo 3: Placing pipe in trench in aquatic resource area.



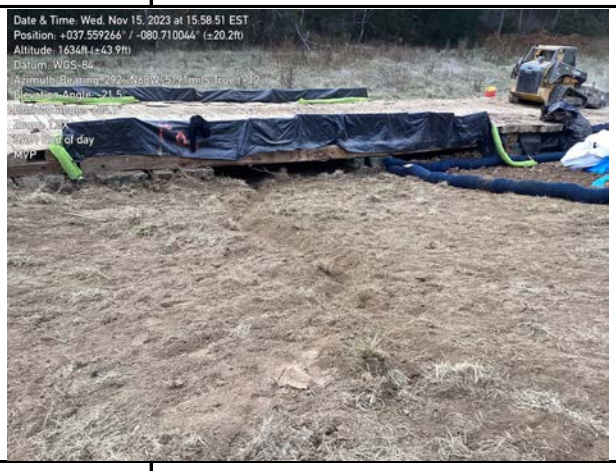
GPS Location	See Photo
Description	Photo 4: Construction of trench breaker.



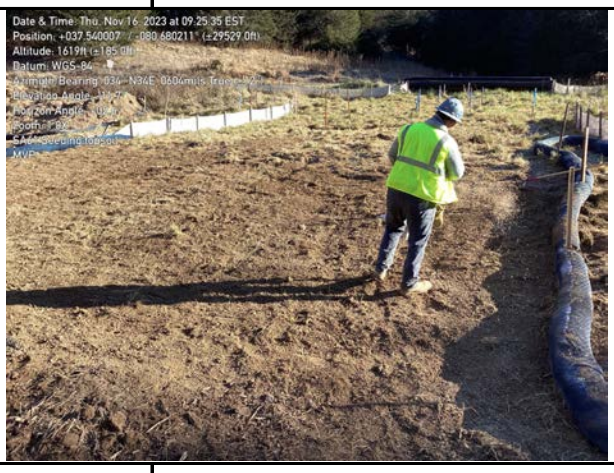
GPS Location	See Photo
Description	Photo 5: Backfilling of trench.



GPS Location	See Photo
Description	Photo 6: Survey staking out aquatic resource prior to restoration.



GPS Location	See Photo
Description	Photo 7: Aquatic resource after hand work to develop channel.



GPS Location	See Photo
Description	Photo 8: Seeding of buffer adjacent to aquatic resource.