STREAM BIOLOGICAL CONDITIONS
ENVIRONMENTAL AUDITOR REPORT

Version 2.3

Wetland Studies and Solutions, Inc.® a DAVEY company

Stream ID: S-D20	**Crossing Start Date:** 08/12/2023	**Crossing Completion Date:** 08/15/2023
Milepost: 261.3	**Pre-Con Assessment Date:** 08/09/2023	**Post-Con Assessment Date:** 08/17/2023
Station: 13805+52	**Stream Classification:** Intermittent **(Perennial, Intermittent, Ephemeral)**	**Bankfull Width (ft.):** 8
County: Franklin	**303(d) Impairment Listing:** Not Impaired	**Riffle:Pool Complexes Present?** No

Item #	Resource Crossing Conditions	N/A	YES	NO
1.	Were all applicable resource specific crossing conditions satisfied? Time of Year Restrictions (TOYR)? N/A Fish Relocation? N/A Mussel Relocation? N/A	X		
2.	Is this resource designated wild or stockable trout stream?			X
3.	Which crossing methods were utilized during the stream crossing? *(Select one or more)* Dam & Pump, Flume, Cofferdam, Conventional Bore, Horizontal Directional Drill (HDD) Bore?	Dam & Pump		
4.	Was the top 1-foot (12-inches) of streambed substrate segregated and stockpiled separate from trench spoils?		X	
5.	Was excess material not needed for backfill removed and disposed of in an upland area?		X	
6.	Was the top 12-inches of backfill made with clean native stream substrate?		X	
7.	Was the pre-construction survey data provided and utilized during restoration in attempt to re-establish pre-construction contours?		X	
8.	Were any field modifications to the stream implemented by project or regulatory personnel to address potential drainage or bank restoration limitations?		X	
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?		X	
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?		X	
11.	Was the time of disturbance minimized by conducting resource work continuously to completion?		X	
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?		X	
13.	Are bareroot saplings required and/or scheduled to be planted for the dormant season (10/1 – 4/30)?			X
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.			X

Item #	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)*	4 - Poor	4 - Poor
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.)*	3 - Marginal	3 - Marginal
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, 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)*	3 - Marginal	3 - Marginal
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 - Negligible	1 - Negligible

Comments/Remarks

08/09/2023: Pre-Con meeting, Christian Patrick MVP EI on-site. Scott Moore Precision Super, Lenny is Precision Environmental. Bernardo is MBP/DEQ inspector. Survey crew onsite. Shane Hince with Precision identified undercut bank location on RB near pipe CL, duly noted photo documented, and to be rebuilt from existing toe in survey data at 3:1 slope per guidance for such situations. -W. Fennell

08/10/2023: Construction around the upland areas begins, finding evidence of rock in outer test pits, actual crossing of the stream resource will not happen today. -W. Fennell

08/11/2023: No resource crossing planned today, pipe prep and rock removal on approach to stream, per morning meeting. -W. Fennell

08/12/2023: Construction begins. Intention was to complete stream crossing today per morning meeting. Bedrock slowed progress considerably. The trench was not finished and will not be completed today. Monitoring of pumps will continue tonight through Monday morning when work resumes at 7am. -M. Arbaugh

08/14/2023: Resume trench excavation. Full day of bedrock removal in the trench with a rock hammer. Pumps will be monitored again over night. -M. Arbaugh

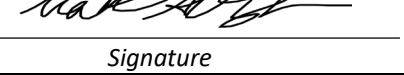
08/15/2023: Complete trench, sifter to build pillows, pipe laid in trench. Trench breakers built, stream bed and banks reconstructed, riparian area seeded, matting laid on banks and stream flow resumed. -M. Arbaugh

08/16/2023: 10 ft buffer ECDs replaced with new, 50 ft buffer on coming in side subsoil backfilled and going away side 50 ft buffer topsoiled, seeded, and straw laid down. -M. Arbaugh

08/17/2023: Coming in 50 buffer topsoil, seed and straw complete. Energy dissipation area removed from stream. Crossing and buffers complete. -M Arbaugh.

No impacts to biological conditions or unauthorized discharges were observed during the crossing activities.

In accordance with the Mountain Valley Pipeline Consent Decree, Case No. CL18006874-00, (Issued October 11, 2019) 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.

This report was written by	M. Arbaugh *Print Name*	 *Signature*	08/17/2023 *Date*

Required Photos

Photo Description: Downstream view of permitted impact area during pre-construction assessment.

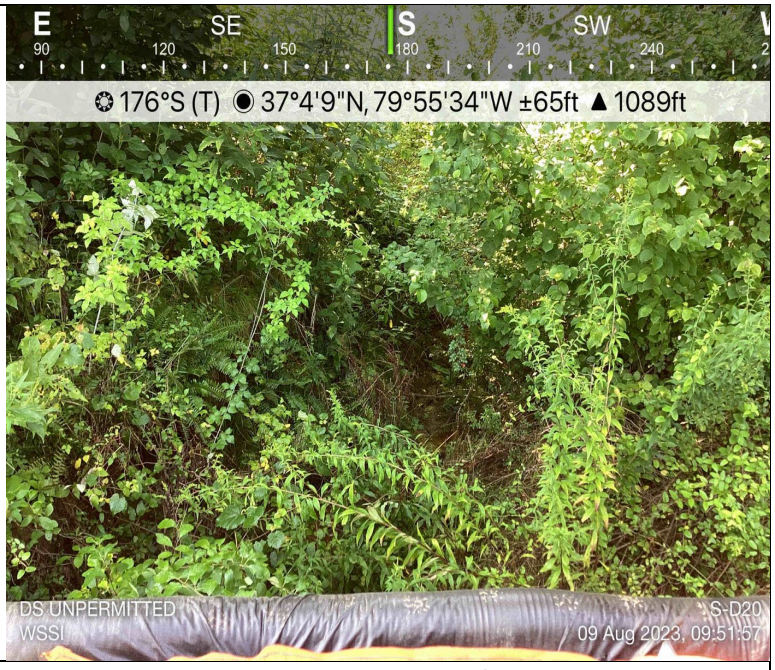


Photo Description: Downstream view of unpermitted area during pre-construction assessment.

Photo Description: Downstream view of permitted impact area during post-construction assessment.

Photo Description: Downstream view of unpermitted area during post-construction assessment.

Optional Additional Photos

Photo Description: Energy dissipation area for stream dam and pump.

Photo Description: Removal of bedrock in pipeline trench with rock hammer attachment.

Photo Description: Bentonite trench breaker on coming in side of S-D20.

Photo Description: Fine grading of stream channel.