STREAM BIOLOGICAL CONDITIONS
ENVIRONMENTAL AUDITOR REPORT

Version 2.3

Wetland Studies and Solutions, Inc.® a DAVEY company

Stream ID: S-Q13	**Crossing Start Date:** 09/18/2023	**Crossing Completion Date:** 09/25/2023
Milepost: 199	**Pre-Con Assessment Date:** 09/14/2023	**Post-Con Assessment Date:** 09/26/2023
Station: 10519+69	**Stream Classification:** Perennial **(Perennial, Intermittent, Ephemeral)**	**Bankfull Width (ft.):** 15
County: Giles	**303(d) Impairment Listing:** Not Impaired	**Riffle:Pool Complexes Present?** Yes

Item #	Resource Crossing Conditions	N/A	YES	NO
1.	Were all applicable resource specific crossing conditions satisfied? Time of Year Restrictions (TOYR)? Yes Fish Relocation? Yes Mussel Relocation? N/A		X	
2.	Is this resource designated a 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*	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 - Suboptimal	1 - Optimal
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.)*	2 - Suboptimal	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)*	1 - Optimal	1 - Optimal
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)*	2 - Minor	1 - Negligible

Comments/Remarks

08/26/2023: Pre-Con meeting for bridge installation. PreCon assessment completed. Riffle:Pool Complexes present. -A. Burgess

09/14/2023: Preconstruction meeting held and pre assessment completed for stream crossing. MVP EI will be Mindy Lou Metcalf. Pre-existing concrete structures will be removed with tree stumps and disposed of. Crossing to start on 9/18/2023. Turbidity curtain installed downstream. -A. Breeding

09/18/2023: Fish relocation (Edge) complete. Dam and pump (additional dam installed for better sealing), energy dissipator is installed. Boulder removal from buffer zones complete. Topsoil removal and segregation complete. -A. Breeding

09/19/2023: Stream substrate and subsoil removed and segregated. Soil relayed to top of hill for proper restoration efforts. Excess material not needed for backfill removed from banks and properly disposed of in an upland area. New energy dissipator installed and functioning properly. Trench box installed temporarily to ensure stream bank does not collapse into ditch. Pipe brought down and installed in ditch, 14ft cover but needed 16.9. A variance was requested. Pipe was padded and backfilled in order to repair stream bank. -A. Breeding

09/20/2023: Trench Breakers were marked out and installed. -A. Breeding

09/21/2023: Bell holes dug out and section of pipe brought down to tie in. Trench boxes installed and new scour mitigation specification confirmed. -A. Breeding

09/22/2023: Meeting to discuss specification for scour mitigation efforts. Rock brought into line pipe. Welding completed for section of pipe under landowner driveway. Padding of end section of pipe. Scour mitigation completed installation, survey shot in points, filter fabric, first and second stone layers, padding, appears to be installed to specification. Stream subsoil and subsoil restored, visqueen laid out to prevent washout of stream material in impending inclement weather. -A. Breeding

09/23/2023: Rain out. Crew remained on site for continuous monitoring. -A. Burgess

09/24/2023: Completed survey stake out and began final restoration. -A. Burgess

09/25/2023: Stream flow restored. Modification made from toe points on either side of stream to buffer zones. Final survey completed. -A. Breeding

09/26/2023: Work in left 50 ft buffer continues, tie in to be completed by end of day. -A. Breeding

09/27/2023: Work in left 50 ft buffer continues, final weld and x ray complete. -A. Breeding

Item #8: Modification made to both banks due to removal of foreign material and severely eroded banks. Modifications made from channel toe points on either side of stream to buffer zones.

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	Allie Breeding *Print Name*	Alyson Breeding *Signature*	09/27/2023 *Date*

Required Photos

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

Photo Description: Conditions of the downstream area outside the ROW during pre-construction assessment.

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

Photo Description: Conditions of the downstream area outside the ROW during post-construction assessment.

Optional Additional Photos

Photo Description: Pre-existing concrete to be removed and disposed of properly.

Photo Description: Double dam and pump around due to poor sealing.

Photo Description: Scour mitigation padding between stone layers to fill void space.

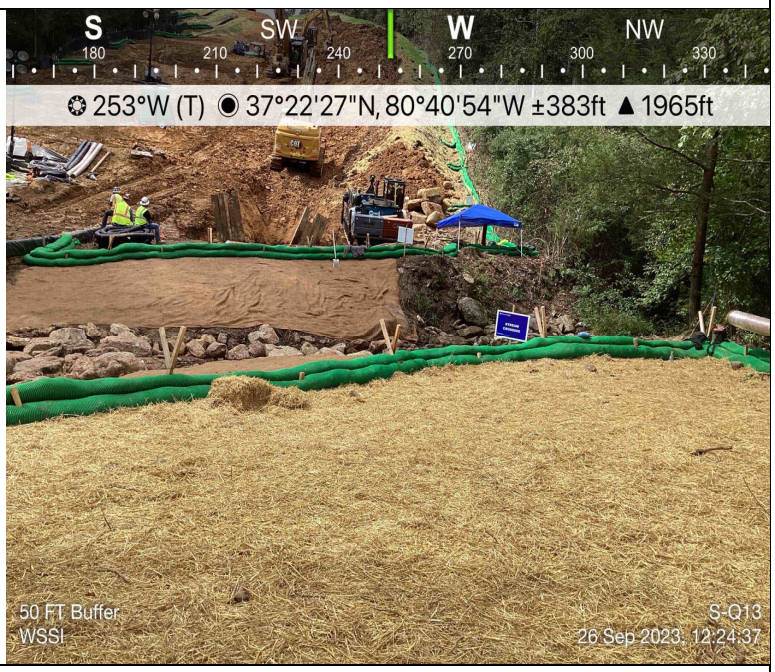

Photo Description: 50’ buffer restored on right side with left side left open for tie in.