



# Stream Biological Conditions EA Report

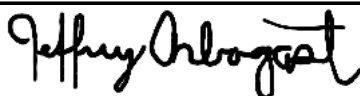
<b>Project Name</b>	H-600 Pipeline Spread C	<b>AFE</b>	124300131	<b>Spread</b>	H-600 Pipeline Spread C
<b>Contractor</b>	Precision	<b>Report #</b>	257		
<b>Environmental Auditor</b>	Jeffrey Arbogast	<b>Date/Time</b>	9/28/2023 2:47 PM		
<b>Stream ID</b>	S-H107	<b>Crossing Start Date</b>	9/28/2023	<b>Crossing Completion Date</b>	10/6/2023
<b>Milepost</b>	93.26	<b>Pre-Con Assessment Date</b>	9/11/2023	<b>Post-Con Assessment Date</b>	10/6/2023
<b>Station</b>	4923+89	<b>Bankfull Width (ft.)</b>	1.8	<b>Riffle:Pool Complexes Present?</b>	No
<b>State</b>	WV	<b>Stream Classification</b>	Intermittent		
<b>County</b>	Webster	<b>303(d) Impairment Listing</b>	No		

### Resource Post-Crossing Conditions

1	Were all applicable resource specific crossing conditions satisfied?	See Below
	Time of Year Restrictions (TOYR)? <u>Yes</u> Mussel Relocation? <u>N/A</u>	
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    Flume <input checked="" type="checkbox"/> 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?	N/A
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	<b>Predominant Substrate Type (select one):</b> Bedrock, Boulder (>10"), Cobble (2-10"), Gravel (0.1-2"), Sand (<0.1"), Mud/Silt/Clay	Mud/Silt/Clay	Mud/Silt/Clay
16	<b>Channel Conditions: Rating:</b> 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	<b>Riparian Buffer Zone within ROW and ≤50 ft. from Stream Top-of-Bank: Rating:</b> 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	2

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<b>Biological Conditions Continued</b>					<b>Pre-Con</b>	<b>Post-Con</b>
18	<b>Instream Habitat Conditions:</b> 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	2	
19	<b>Channel Alterations:</b> 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	
<b>Additional Notes</b>						
<p>Stream S-H107 was not flowing when crossing commenced. A flume pipe will be used as needed to carry any flow that may arise. Stream substrate was a mixture of sand, silt and gravel.</p> <p>Expanded notes for question 1: Stream S-H107 has a time of year restriction (TOYR) prohibiting construction between Sept. 15th to March 31st. A waiver has been obtained from the appropriate agencies to allow construction within this window.</p> <p>Expanded notes for question 9: Bentonite trench breakers were installed at 18' from the coming in side (CIS) and 19' from the going away side (GAS) top of bank as per survey.</p> <p>9/28/2023: The stream substrate was removed by hand and placed in super sacks to be stored in an upland location. The topsoil from the 10' buffer was placed in super sacks and stockpiled at the same location as the substrate. Blasting operations commenced and once completed, blasting mats were removed from the stream, erosion control devices (ECDs) were installed, and a temporary flume pipe was put in place for the night. A backup pump was set up for emergency use if needed throughout the crossing.</p> <p>9/29/2023: Crews began excavating the ditch line approximately 30' from the stream on the GAS toward the existing loose end with assistance of rock hammers to reach the required depth. In the meantime, welders made up a two joint section on the bank.</p> <p>9/30/2023: Ditch excavation continued toward the loose end on the GAS of the stream crossing. The progress was slow due to the hardness of the rock layer.</p> <p>10/02/2023: The pipe section between the loose end and the GAS of the stream was lowered in, welded, x-rayed, and all protective coatings were applied.</p> <p>10/03/2023: Operators started backfilling the pipe section that was lowered in the previous day. When ditch excavations continued the trench was extended through the stream and the stream subsoil was segregated on plastic sheeting to be used during backfilling. At the end of the day, ECDs and the stream flume were reinstalled.</p> <p>10/04/2023: Ditch excavation continued but was again slowed by rock in the bottom of the trench. The next pipe section was lowered in late in the day leaving only enough time to do three passes on the weld.</p> <p>10/05/2023: The welds from the previous day were completed, and x-rayed, and all protective coatings were applied prior to the installation of the bentonite trench breakers. The contractor completed backfilling of the stream subsoil with the native material removed during excavation (Ref. Appendix B Restoration Work Plan-MVP Section 3.4).</p> <p>10/06/2023: The top 12" of stream substrate was replaced and the elevations, width, and contours were confirmed via survey data and pre-construction photos. The 10-foot stream buffer topsoil was replaced and stabilized with riparian seed mix, erosion control blankets, and straw. The 50' buffer on the CIS will be restored once another section of pipe is installed and backfilled.</p>						
<p>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.</p>						
<b>Name</b>		<b>Signature</b>		<b>Company</b>		
Jeffrey Arbogast				SWCA		
				<b>Date</b>		
				10/6/2023		







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**Required Photos**

<b>GPS Location</b>	See Caption in Photo	<b>GPS Location</b>	See Caption in Photo
<b>Description</b>	Downstream view of permitted impact area during pre-construction assessment.	<b>Description</b>	Downstream view of unimpacted area during pre-construction assessment. Stream runs parallel to and on the right side of the driveway.
<b>GPS Location</b>	See Caption in Photo	<b>GPS Location</b>	See Caption in Photo
<b>Description</b>	Downstream view of permitted impact area during post-construction assessment.	<b>Description</b>	Downstream view of unimpacted area during post-construction assessment. Stream runs parallel to and on the right side of the driveway.
<b>GPS Location</b>	See Caption in Photo	<b>GPS Location</b>	See Caption in Photo
<b>Description</b>	Standing on the CIS of the crossing on the centerline pre-construction.	<b>Description</b>	Standing on the GAS of the crossing on the centerline pre-construction.

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**Optional Photos**

			
<b>GPS Location</b>	See Caption in Photo	<b>GPS Location</b>	See Caption in Photo
<b>Description</b>	Standing on the CIS of the crossing on the centerline post-construction.	<b>Description</b>	Standing on the GAS of the crossing on the centerline post-construction.
			
<b>GPS Location</b>	See Caption in Photo	<b>GPS Location</b>	See Caption in Photo
<b>Description</b>	The top 12" of stream substrate being removed by hand and segregated into super sacks.	<b>Description</b>	ECDs returned to stream after blasting has been completed.
			
<b>GPS Location</b>	See Caption in Photo	<b>GPS Location</b>	See Caption in Photo
<b>Description</b>	Bentonite trench breakers.	<b>Description</b>	Stream substrate being placed in the channel.