



# Stream Biological Conditions EA Report


<b>Project Name</b>	H-600 Pipeline Spread F	<b>AFE</b>	124300135	<b>Spread</b>	H-600 Pipeline Spread F
<b>Contractor</b>	Price Gregory	<b>Report #</b>	362		
<b>Environmental Auditor</b>	Luke Fultz	<b>Date/Time</b>	11/16/2023 11:03 AM		
<b>Stream ID</b>	S-K21	<b>Crossing Start Date</b>	11/25/2023	<b>Crossing Completion Date</b>	12/7/2023
<b>Milepost</b>	155.42	<b>Pre-Con Assessment Date</b>	11/16/2023	<b>Post-Con Assessment Date</b>	12/7/2023
<b>Station</b>	8206+18	<b>Bankfull Width (ft.)</b>	8.3	<b>Riffle:Pool Complexes Present?</b>	No
<b>State</b>	WV	<b>Stream Classification</b>	Perennial		
<b>County</b>	Greenbrier	<b>303(d) Impairment Listing</b>	No		





### Resource Post-Crossing Conditions

1	Were all applicable resource specific crossing conditions satisfied? Time of Year Restrictions (TOYR)? <u>  N/A  </u> Mussel Relocation? <u>  N/A  </u>	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    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?	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	<b>Predominant Substrate Type (select one):</b> Bedrock, Boulder (>10"), Cobble (2-10"), Gravel (0.1-2"), Sand (<0.1"), Mud/Silt/Clay	Bedrock, Boulder (>10")	Bedrock, Boulder (>10")
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	1
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	1

<b>AFE</b>	124300135	<b>Date/Time</b>	11/16/2023 11:03 AM	<b>Report #</b>	362	
<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	1	
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	1	
<b>Additional Notes</b>						
<p>Pre-Construction Notes</p> <p>Pre-Construction Meeting - 11/16/2023</p> <p>19. Timber mat (TM) bridge in place.</p> <p>S-K22 shares riparian buffer with S-K21 which is located to the north on the ROW. Dates where TM bridge constructed over aquatic resource (AR) included in this report.</p> <p>11/20/2023 - Survey onsite to shoot OHWM. Adjusted TM bridge over resource (but outside AR). Moved large rocks and topsoil outside of aquatic resource area (ARA). Prepared headers for moving TM bridge over aquatic resource. Moved TM bridge over AR.</p> <p>11/21/2023 - Rain Event. No work in AR.</p> <p>11/23/2023 - 1.02" of precipitation recorded in previous 24 hrs near site. Resource crossing not anticipated to start today. Additional footers are being placed under TM across resource. Excavation outside resource. New TM installation inside riparian buffer.</p> <p>11/24/2023 - Welded outside of resource. Moved material in buffer. Moved remaining section of TM bridge to lower end of LOD. Dug test pit in LDB riparian buffer and excavated in the riparian buffer on RDB. Completed weld.</p> <p>11/25/2023 - Minimal flow in AR. Water in trench on RDB. Pumped water from trench. Removed topsoil then top 12 inches substrate inside OHWM (Photo 1). Lots of large rocks within OHWM and buffer. Substrate moved to upland area. Subsoils transported across TM bridge to south of ARA. Mats placed over AR to facilitate trench excavation. Brought in pipe to weld; end is in RDB riparian area. Lowered pipe in trench. Welded in upland above RDB. Hammered and excavated trench in riparian area. Installed flume.</p> <p>11/26/2023 - Groundwater in trench on RDB riparian buffer. Pumped water from trench. No water in flume. X-rayed. Welding ongoing. Removed flume. Hammered in trench and excavated in buffer. Excavating towards AR (Photo 2). Removed mats and installed flume.</p> <p>11/27/2023 - Minimal flow in flume. Pumped water from trench. Removed flume. Excavated through AR. Used hammer on backhoe to break bedrock through ARA. Subsoil moved to upland area. X-rayed. Transported pipe to trench south of ARA. Set pipe in trench outside ARA. Reinstalled flume pipe.</p> <p>11/28/2023 - Removed flume and continued to excavate the trench. Flume reinstalled at the end of the day.</p> <p>11/29/2023 - Pumped water from trench in ARA. Drilled for blasting. Worked outside AR. Flume remained in place.</p> <p>11/30/2023 - Pumped water from trench in ARA. Prepped for blasting. Blasted. Hammered rock in ARA. Sandbags added to trench for padding. Removed flume. Lowered section of pipe into trench (Photo 3). Restored flume. Welded. Survey onsite to shoot pipe location. Installed trench box between AR and adjacent stream. Added river weights.</p> <p>12/1/2023 - Pumped water from trench in ARA. X-rayed. Began constructing northern trench breaker (Photo 4). Sandblasted and coated pipe. Flume remained in place.</p> <p>12/2/2023 - Welding ongoing. No work in AR. Worked outside ARA. Flume remained in place.</p> <p>12/4/2023 - Pumped water from trench in ARA. Worked outside ARA. Flume remained in place.</p> <p>12/5/2023 - Pumped water from trench in ARA. Began constructing southern trench breaker. Added padding and backfill. Completed trench breakers (Photo 5). Flume remained in place.</p> <p>12/6/2023 - Padding and backfilling subsoil in ARA (Photo 6). Flume remained in place.</p> <p>12/7/2023 - Backfilled subsoil in riparian buffer. Restored subsoil in ARA. Survey onsite to shoot elevations. Contoured ARA. Restored substrate (Photo 7) and large rocks (Photo 8). Removed dams. Seeded banks. Installed curlex and P1 fencing.</p> <p>Post Construction Notes</p> <p>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.</p> <p>19. Does not include timber mats that remain in place for travel lane</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>		<b>Date</b>
Luke Fultz				Potesta		12/7/2023

AFE 124300135		Date/Time 11/16/2023 11:03 AM		Report # 362			
Required Photos							
 <p>Date &amp; Time: Thu, Nov 16, 2023 at 11:03:58 EST  Position: +037.858577 / -080.755473 (+37.86°N, -80.76°W)  Altitude: 2531ft (+771.9m)  Datum: WGS-84  Azimuth Bearing: 260.580W 4622mils True (+13.1°)  Elevation Angle: -18.3  Horizon Angle: -01.3  Zoom: 0.5X  S-K21 US facing DS permitted impact MVP</p>		 <p>Date &amp; Time: Thu, Nov 16, 2023 at 11:26:17 EST  Position: +037.858624 / -080.755369 (+37.86°N, -80.76°W)  Altitude: 2521ft (+768.6m)  Datum: WGS-84  Azimuth Bearing: 276.184W 4907mils True (+13.2°)  Elevation Angle: -18.3  Horizon Angle: -01.3  Zoom: 0.5X  S-K21 US facing DS unimpacted MVP</p>		<p><b>GPS Location</b> See Photo</p> <p><b>Description</b> Downstream view of permitted impact area during pre-construction assessment.</p>		<p><b>GPS Location</b> See Photo</p> <p><b>Description</b> Downstream view of unimpacted area during pre-construction assessment.</p>	
 <p>Date &amp; Time: Thu, Dec 07, 2023 at 14:47:56 EST  Position: +037.858577 / -080.755473 (+37.86°N, -80.76°W)  Altitude: 2519ft (+767.4m)  Datum: WGS-84  Azimuth Bearing: 289.171W 5138mils True (+13.1°)  Elevation Angle: -19.3  Horizon Angle: -05.5  Zoom: 0.5X  S-K21 US facing DS permitted impact (post-construction) MVP</p>		 <p>Date &amp; Time: Thu, Dec 07, 2023 at 15:03:05 EST  Position: +037.858624 / -080.755369 (+37.86°N, -80.76°W)  Altitude: 2517ft (+767.0m)  Datum: WGS-84  Azimuth Bearing: 282.178W 5013mils True (+13.1°)  Elevation Angle: -19.3  Horizon Angle: -07.4  Zoom: 0.5X  S-K21 US facing DS unimpacted (post-construction) MVP</p>		<p><b>GPS Location</b> See Photo</p> <p><b>Description</b> Downstream view of permitted impact area during post-construction assessment.</p>		<p><b>GPS Location</b> See Photo</p> <p><b>Description</b> Downstream view of unimpacted area during post-construction assessment.</p>	
 <p>Date &amp; Time: Sat, Nov 25, 2023 at 10:32:31 EST  Position: +037.858577 / -080.755473 (+37.86°N, -80.76°W)  Altitude: 2521ft (+768.6m)  Datum: WGS-84  Azimuth Bearing: 176.589E 330mils True (+13.1°)  Elevation Angle: -18.3  Horizon Angle: -01.3  Zoom: 0.5X  S-K21 US facing DS permitted impact MVP</p>		 <p>Date &amp; Time: Sun, Nov 26, 2023 at 10:00:51 EST  Position: +037.860668 / -080.758361 (+37.86°N, -80.76°W)  Altitude: 2508ft (+764.5m)  Datum: WGS-84  Azimuth Bearing: 117.163E 240mils True (+13.1°)  Elevation Angle: -18.3  Horizon Angle: -01.3  Zoom: 0.5X  S-K21 US facing DS aquatic resource MVP</p>		<p><b>GPS Location</b> See Photo</p> <p><b>Description</b> Photo 1: Excavating top 12 inches of substrate.</p>		<p><b>GPS Location</b> See Photo</p> <p><b>Description</b> Photo 2: Excavating towards the aquatic resource.</p>	

<b>Optional Photos</b>		
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 <p><small>Date &amp; Time: Fri, Dec 01, 2023 at 11:03:00 EST Position: +037.8586711, -080.7556611, +136.81ft Altitude: 2531ft (+136.8ft) Datum: WGS 84 Azimuth Bearing: 163.546E 2862mils True (+163) Elevation Angle: -02.9 Horizon Angle: -02.9 Zoom: 0.5X S-K21 Staging pipe in resource area MVP</small></p>	 <p><small>Date &amp; Time: Fri, Dec 01, 2023 at 10:12:15 EST Position: +037.8586711, -080.7556611, +136.81ft Altitude: 2531ft (+136.8ft) Datum: WGS 84 Azimuth Bearing: 163.546E 2862mils True (+163) Elevation Angle: -02.9 Horizon Angle: -02.9 Zoom: 0.5X S-K21 Constructed trench breaker (north) MVP</small></p>
<b>GPS Location</b> See Photo	<b>GPS Location</b> See Photo
<b>Description</b> Photo 3: Lowering pipe into trench.	<b>Description</b> Photo 4: Constructing northern trench breaker.
 <p><small>Date &amp; Time: Tue, Dec 05, 2023 at 13:08:34 EST Position: +037.8586711, -080.7556611, +131.0ft Altitude: 2411ft (+131.0ft) Datum: WGS 84 Azimuth Bearing: 031.131E 0551mils True (+131) Elevation Angle: -02.6 Horizon Angle: -02.6 Zoom: 1.0X S-K21 Finished trench breaker in resource area MVP</small></p>	 <p><small>Date &amp; Time: Wed, Dec 06, 2023 at 11:32:58 EST Position: +037.8586711, -080.7556611, +109.8ft Altitude: 2219ft (+109.8ft) Datum: WGS 84 Azimuth Bearing: 116.564E 2062mils True (+116) Elevation Angle: -02.6 Horizon Angle: -02.6 Zoom: 0.5X S-K21 Padding and backfilling in resource area MVP</small></p>
<b>GPS Location</b> See Photo	<b>GPS Location</b> See Photo
<b>Description</b> Photo 5: Constructed southern trench breaker.	<b>Description</b> Photo 6: Padding and backfilling trench in aquatic resource area.
 <p><small>Date &amp; Time: Thu, Dec 07, 2023 at 09:21:17 EST Position: +037.8586711, -080.7556611, +119.3ft Altitude: 2520ft (+119.3ft) Datum: WGS 84 Azimuth Bearing: 163.518E 2860mils True (+163) Elevation Angle: -02.9 Horizon Angle: -02.9 Zoom: 1.0X S-K21 Backfilling substrate, replacing rocks MVP</small></p>	 <p><small>Date &amp; Time: Thu, Dec 07, 2023 at 12:23:01 EST Position: +037.8586711, -080.7556611, +23.7ft Altitude: 2520ft (+119.3ft) Datum: WGS 84 Azimuth Bearing: 086.186E 1523mils True (+164) Elevation Angle: -02.9 Horizon Angle: -02.9 Zoom: 1.0X S-K21 Replacing rocks in stream channel MVP</small></p>
<b>GPS Location</b> See Photo	<b>GPS Location</b> See Photo
<b>Description</b> Photo 7: Restoring substrate.	<b>Description</b> Photo 8: Restoring large rocks in channel.