



Stream Biological Conditions EA Report


Project Name	H-600 Pipeline Spread F	AFE	124300135	Spread	H-600 Pipeline Spread F
Contractor	Price Gregory	Report #	308		
Environmental Auditor	Aaron Crank	Date/Time	10/23/2023 11:01 PM		
Stream ID	S-U22	Crossing Start Date	10/25/2023	Crossing Completion Date	11/11/2023
Milepost	157.01	Pre-Con Assessment Date	10/24/2023	Post-Con Assessment Date	11/11/2023
Station	8290+13	Bankfull Width (ft.)	7.0	Riffle:Pool Complexes Present?	No
State	WV	Stream Classification	Intermittent		
County	Greenbrier	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)? <u> N/A </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 <input checked="" type="checkbox"/> Flume <input checked="" type="checkbox"/> Cofferdam <input type="checkbox"/> Conventional Bore <input type="checkbox"/> Horizontal Directional Drill (HDD) Bore <input type="checkbox"/>	
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	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)	3	4
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	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)			3	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)			3	4	
Additional Notes						
<p>Pre-Construction Notes</p> <p>Pre-Construction Meeting - 10/21/2023</p> <p>Bankfull width measured at OHWM stakes.</p> <p>Substrate consisted of mud/silt/clay in center of permitted impact area, limited gravel observed near upstream edge of ROW. 16., 17., 18., and 19. Low rating due to previous alterations including straightened channel, non-native rock along banks, proximity to county road, and high silt content within stream bed. Riparian area on LDB includes bore pit and trench boxes for I-64 bore.</p> <p>10/25/2023 - Dam constructed in resource for pump-around system. Substrate and large rock removed from stream (Photo 1) and segregated. Excavation of trench in aquatic resource. Hammering in aquatic resource. Flume installed.</p> <p>10/26/2023 - Pumping from trench in aquatic resource area. Second trench box installed inside I-64 bore trench box for safety in riparian corridor. Welding ongoing outside aquatic resource area.</p> <p>10/27/2023-10/29/2023 - Pumping from trench in aquatic resource area throughout day. Flume removed and pump around system utilized. Hammering and excavation of material from trench in and around aquatic resource. Flume reinstalled.</p> <p>10/30/2023 - Pumping from trench in aquatic resource area throughout day. Flume removed and pump around system utilized. Hammering and excavation of material from trench. Pipe installed in aquatic resource area (Photo 3). Welding ongoing outside of aquatic resource. Flume restored.</p> <p>10/31/2023-11/2/2023 - Pumping from trench in aquatic resource area throughout day. Sandbags placed in trench for padding. Shaker bucket utilized to sift subsoil for additional padding (soil). River weights placed in trench in aquatic resource area (10/31/2023) (Photo 4). Excavation of trench in upland and welding and x-ray ongoing outside of aquatic resource area. Construction of trench breakers (Photo 5). Survey onsite for pipe measurements and trench breakers. Backfilling and grading ongoing. Survey crew marked aquatic resource for substrate and buffer restoration.</p> <p>11/3/2023-11/4/2023 - Began removal of trench boxes on LDB. Welding, x-ray, sandblasting, coating, and backfilling ongoing outside aquatic resource area. Stream substrate and large rocks restored (Photo 6). Elevations verified by survey (Photo 7). Seeding and curlex application on RDB. Flow restored. Restoration of LDB incomplete due to bore trench box removal.</p> <p>11/6/2023-11/10/2023 - Blasting, welding, x-ray, sandblasting, backfilling, and other construction activities ongoing outside of aquatic resource including ongoing removing trench box associated with I-64 bore. Test Station installed (outside aquatic resource). Additional handwork in stream.</p> <p>11/11/2023 - Bore pit backfilled. Grading. Riparian area soil restored. LDB 10-foot buffer seeded and curlex in place. Raking of soil in riparian area (Photo 8). Curlex and seeding completed in riparian area. Water observed flowing clearly and consistently through aquatic resource. Restoration complete.</p> <p>Post Construction Notes</p> <p>15. Substrate consisted of mud/silt/clay with limited gravel observed.</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>						
Name		Signature		Company		Date
Aaron Crank				Potesta		11/11/2023

Required Photos	
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 <p style="font-size: small; color: red;">Date & Time: Sat, Oct 21, 2023 at 15:27:23 EDT Position: +37.839537, -080.748988, +25.21m Altitude: 2520ft (+39.4m) Datum: WGS-84 Azimuth Bearing: 162.538E 2524mils True (+23) Elevation Angle: -32.7 Horizon Angle: +02.5 Zoom: 1.0X Topsoil removal beginning in resource MVP-SU22</p>	 <p style="font-size: small; color: red;">Date & Time: Fri, Oct 20, 2023 at 15:26:57 EDT Position: +37.839577, -080.748924, +25.18m Altitude: 2538ft (+31.1m) Datum: WGS-84 Azimuth Bearing: 227.547W 4038mils True (+44) Elevation Angle: +13.6 Horizon Angle: +01.1 Zoom: 1.0X Downstream view from EDD MVP-SU22</p>
GPS Location See Photo	GPS Location See Photo
Description Downstream view of permitted impact area during pre-construction assessment.	Description Downstream view of unimpacted area during pre-construction assessment.
 <p style="font-size: small; color: red;">Date & Time: Sat, Nov 11, 2023 at 15:27:23 EDT Position: +37.839537, -080.748988, +25.21m Altitude: 2520ft (+39.4m) Datum: WGS-84 Azimuth Bearing: 162.538E 2524mils True (+23) Elevation Angle: -32.7 Horizon Angle: +02.5 Zoom: 1.0X S-U22 Post-construction assessment: Downstream view from upstream side of ROW MVP-SU22</p>	 <p style="font-size: small; color: red;">Date & Time: Sat, Nov 11, 2023 at 15:26:57 EDT Position: +37.839581, -080.748924, +25.18m Altitude: 2538ft (+31.1m) Datum: WGS-84 Azimuth Bearing: 227.547W 4038mils True (+44) Elevation Angle: +13.6 Horizon Angle: +01.1 Zoom: 1.0X S-U22 Post-construction assessment: Downstream view from downstream side of ROW MVP-SU22</p>
GPS Location See Photo	GPS Location See Photo
Description Downstream view of permitted impact area during post-construction assessment.	Description Downstream view of unimpacted area during post-construction assessment.
 <p style="font-size: small; color: red;">Date & Time: Wed, Oct 25, 2023 at 11:16:13 EDT Position: +37.839537, -080.748988, +25.21m Altitude: 2520ft (+39.4m) Datum: WGS-84 Azimuth Bearing: 162.538E 2524mils True (+23) Elevation Angle: -32.7 Horizon Angle: +02.5 Zoom: 1.0X Topsoil removal beginning in resource MVP-SU22</p>	 <p style="font-size: small; color: red;">Date & Time: Fri, Oct 27, 2023 at 09:49:39 EDT Position: +37.839781, -080.748508, +25.11m Altitude: 2561ft (+39.6m) Datum: WGS-84 Azimuth Bearing: 124.554E 2240mils True (+23) Elevation Angle: -32.7 Horizon Angle: +02.2 Zoom: 1.0X Hammering in S-U22 MVP-SU22</p>
GPS Location See Photo	GPS Location See Photo
Description Photo 1: Substrate removal including large rocks below OHWM.	Description Photo 2: Hammering in aquatic resource.

AFE	124300135	Date/Time	10/23/2023 11:01 PM	Report #	308				
Optional Photos									
 <p>Date & Time: Mon, Oct 30, 2023 at 14:04:00 EDT Position: +037.837890 / -080.748461 (+11.6ft) Altitude: 2561ft (+105.0ft) Datum: WGS-84 Azimuth Bearing: 201 S21W 3573mils True (+35.1) Elevation Angle: -07.1 Horizon Angle: +00.3 Zoom: 1.0X Pipe being brought to trench MVP-SU22</p>		 <p>Date & Time: Tue, Oct 31, 2023 at 14:39:18 EDT Position: +037.837872 / -080.748479 (+11.6ft) Altitude: 2542ft (+103.1ft) Datum: WGS-84 Azimuth Bearing: 165 S15E 2933mils True (+34.1) Elevation Angle: +11.9 Horizon Angle: +03.8 Zoom: 1.0X Sandbags placed over pipe in resource MVP-SU22</p>		GPS Location See Photo	GPS Location See Photo				
Description	Photo 3: Transporting pipe to be placed in aquatic resource.	Description	Photo 4: Sandbag padding in trench and river weights placed in aquatic resource area.	 <p>Date & Time: Wed, Nov 01, 2023 at 17:01:26 EDT Position: +037.837843 / -080.748522 (+15.5ft) Altitude: 2540ft (+11.1ft) Datum: WGS-84 Azimuth Bearing: 138 S42E 2653mils True (+23.1) Elevation Angle: +23.3 Horizon Angle: +02.3 Zoom: 1.0X Trench breaker constructed on east side of resource MVP-SU22</p>		 <p>Date & Time: Fri, Nov 03, 2023 at 08:39:17 EDT Position: +037.837732 / -080.748444 (+25.6ft) Altitude: 2503ft (+92.5ft) Datum: WGS-84 Azimuth Bearing: 150 S30E 2667mils True (+23.1) Elevation Angle: +17.2 Horizon Angle: +00.2 Zoom: 1.0X Large rock returned to resource MVP-SU22</p>		GPS Location See Photo	GPS Location See Photo
Description	Photo 5: Trench breaker adjacent to aquatic resource.	Description	Photo 6: Large rock returned to aquatic resource area for restoration.	 <p>Date & Time: Fri, Nov 03, 2023 at 15:12:58 EDT Position: +037.838481 / -080.748436 (+15.5ft) Altitude: 2527ft (+11.1ft) Datum: WGS-84 Azimuth Bearing: 266 S66W 4373mils True (+30.1) Elevation Angle: +14.9 Horizon Angle: +01.2 Zoom: 1.0X Substrate replaced, survey shooting elevation MVP-SU22</p>		 <p>Date & Time: Sat, Nov 11, 2023 at 10:53:45 EST Position: +037.837877 / -080.748461 (+28.6ft) Altitude: 2569ft (+92.6ft) Datum: WGS-84 Azimuth Bearing: 194 S14W 3449mils True (+28.1) Elevation Angle: +18.2 Horizon Angle: +02.0 Zoom: 1.0X Environmental crew raking soil in buffer zone on coming-in side MVP-SU22</p>		GPS Location See Photo	GPS Location See Photo
Description	Photo 7: Substrate replaced and elevation verified by survey.	Description	Photo 8: Environmental crew raking the buffer in preparation for seeding.						