



Stream Biological Conditions EA Report

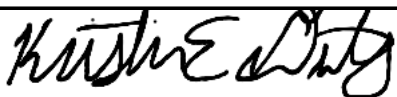
Project Name	H-600 Pipeline Spread E	AFE	124300134	Spread	H-600 Pipeline Spread E
Contractor	Price Gregory	Report #	219		
Environmental Auditor	Kristin Duty	Date/Time	9/6/2023 12:27 PM		
Stream ID	S-L22	Crossing Start Date	9/20/2023	Crossing Completion Date	10/14/2023
Milepost	147.00	Pre-Con Assessment Date	9/6/2023	Post-Con Assessment Date	10/14/2023
Station	7761+60	Bankfull Width (ft.)	25.8	Riffle:Pool Complexes Present?	No
State	WV	Stream Classification	Perennial		
County	Greenbrier	303(d) Impairment Listing	Tier 1 (Fecal/Iron)		







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 type="checkbox"/> Cofferdam <input checked="" 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?	Yes
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	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	3
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.)	4	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)			1	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)			1	1	
Additional Notes						
<p>Pre-construction Notes Pre-Construction Meeting - 9/5/2023 Timber mat in place prior to assessment. OHWM measured in the field. 15. While cobble was likely the predominant substrate there was a large amount of silt present within the channel.</p> <p>9/20/2023 - Upstream and downstream dam completed in aquatic resource.</p> <p>9/21/2023 - Pumping of aquatic resource resulted in clear discharge. Removal and segregation of first 12 inches of stream substrate and bank topsoil (Photos 1 and 2). Trenching of resource initiated.</p> <p>9/22/2023 - Secondary dam constructed in resource. Trench excavation in aquatic resource completed (Photo 3).</p> <p>9/23/2023 - Lowering of pipe into aquatic resource (Photo 4). River weights placed on aquatic resource (Photo 5). Welding ongoing outside of aquatic resource.</p> <p>9/24/2023 - Welding and x-ray completed and surveyors evaluated elevations.</p> <p>9/25/2023 - Construction of concrete barrier in trench (at driveway) initiated. Backfilling in aquatic resource.</p> <p>9/26/2023 - Backfilling and construction of concrete barrier continued. Survey indicated subsoil levels were inaccurate and adjustments were made to elevations of subsoils. Contouring of bed and banks. Welding ongoing outside of aquatic resource.</p> <p>9/27/2023 - Second concrete barrier established. Sand poured between barriers (Photo 6).</p> <p>9/28/2023 - Backfilling ongoing outside of resource. Water in resource pumped and survey checked contour elevations (Photo 7).</p> <p>9/29/2023 - 9/30/2023 - Restoration of aquatic resource including adjustments of contours, placement of subsoils, topsoils, and stream substrate, placement of a portion of curlex on banks, hand working contours in channel, and restoration of flow.</p> <p>10/5/2023 - Bank on left descending bank (LDB) of stream collapsed. Bank angle too severe. Cofferdam constructed along LDB to protect eroded area (Photo8).</p> <p>10/7/2023 - Remaining curlex added to 10-foot buffer.</p> <p>10/12/2023 - 10/14/2023 - Cofferdam on right DB constructed. Second trench breaker (on LDB) completed outside of aquatic resource. Use of riprap approved by MVP on both banks based on special conditions 26 and 34 for the Department of the Army Section 404 Clean Water Act and Section 10 of Rivers and Harbors Act of 1899 permit. Bank angles reduced and rock added. Cofferdams removed. Site complete.</p> <p>Post Construction Notes 8. Riprap added to both banks and bank angles modified to promote instream bank stability. 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. 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		
Kristin Duty				Potesta		
				Date		
				10/21/2023		

AFE	124300134	Date/Time	9/6/2023 12:27 PM	Report #	219		
Required Photos							
 <p>Date & Time: Wed, Sep 06, 2023 at 15:12:52 EDT Position: +037.954066 / -080.739766 (±15.2ft) Altitude: 2452ft (±11.5ft) Datum: WGS-84 Azimuth Bearing: 242° S64W 4338m/s True (±23°) Elevation Angle: 10° Horizontal Angle: 0° Zoom: 1.0X S-122 DS VIEW FROM US EDGE OF ROW RDB PERMITTED RESOURCE AREA Mountain Valley</p>		 <p>Date & Time: Wed, Sep 06, 2023 at 15:13:01 EDT Position: +037.954089 / -080.739800 (±15.1ft) Altitude: 2451ft (±11.6ft) Datum: WGS-84 Azimuth Bearing: 255° S57W 2424m/s True (±25°) Elevation Angle: 10° Horizontal Angle: 0° Zoom: 1.0X S-122 DOWNSTREAM VIEW OF UNIMPACTED RESOURCE AREA Mountain Valley</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>Date & Time: Sat, Oct 07, 2023 at 15:24:43 EDT Position: +037.954062 / -080.739752 (±15.0ft) Altitude: 2444ft (±13.3ft) Datum: WGS-84 Azimuth Bearing: 305° S68W 4711m/s True (±15°) Elevation Angle: 9° Horizontal Angle: 0° Zoom: 1.0X S-122 DS View Post-Construction MVP</p>		 <p>Date & Time: Mon, Oct 02, 2023 at 15:24:43 EDT Position: +037.954059 / -080.739952 (±15.0ft) Altitude: 2431ft (±13.4ft) Datum: WGS-84 Azimuth Bearing: 280° N80W 4998m/s True (±12°) Elevation Angle: 10° Horizontal Angle: 0° Zoom: 1.0X S-122 DS VIEW FROM DS EDGE OF ROW Mountain Valley</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>Date & Time: Thu, Sep 21, 2023 at 12:44:00 EDT Position: +037.953350 / -080.739700 (±15.0ft) Altitude: 2463ft (±11.6ft) Datum: WGS-84 Azimuth Bearing: 234° S14W 0480m/s True (±13°) Elevation Angle: 11° Horizontal Angle: 0° Zoom: 1.0X S-122 TOPSOIL BANKS AND BRASSBERRY Mountain Valley</p>		 <p>Date & Time: Thu, Sep 21, 2023 at 12:45:00 EDT Position: +037.953350 / -080.739700 (±15.0ft) Altitude: 2463ft (±11.6ft) Datum: WGS-84 Azimuth Bearing: 234° S14W 0480m/s True (±13°) Elevation Angle: 11° Horizontal Angle: 0° Zoom: 1.0X S-122 BEG TOPSOIL Mountain Valley</p>		GPS Location	See Photo	GPS Location	See Photo
Description	Photo 1: Segregation of top 12 inches of topsoil	Description	Photo 2: Stream substrate segregated and stored in upland area.				

Optional Photos		
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<p><small>Date & Time: Fri, Sep 22, 2023 at 17:35:02 EDT Position: +037.9538017, -080.7378997 (+15.4ft) Altitude: 2477ft (+113ft) Datum: WGS-84 Azimuth Bearing: 015° N08E 10267mils True (+15) Elevation Angle: -07.6 Horizon Angle: -00.7 Zoom: 1.0X S-L22 AND ADJACENT SITES TRENCH VIEWING NORTH Mountain Valley</small></p> 	<p><small>Date & Time: Sat, Sep 23, 2023 at 11:30:04 EDT Position: +037.9541187, -080.7398777 (+15.4ft) Altitude: 2445ft (+112ft) Datum: WGS-84 Azimuth Bearing: 175° S05E 3111mils True (+15) Elevation Angle: -16.2 Horizon Angle: -00.3 Zoom: 1.0X S-L22 PIPE IN TRENCH VIEWING SOUTH Mountain Valley</small></p> 
GPS Location See Photo	GPS Location See Photo
Description Photo 3: Trench through aquatic resource complete.	Description Photo 4: Pipe installed through aquatic resource.
<p><small>Date & Time: Sat, Sep 23, 2023 at 17:40:23 EDT Position: +037.9541110, -080.7398097 (+11.6ft) Altitude: 2448ft (+9.8ft) Datum: WGS-84 Azimuth Bearing: 187° S07W 3324mils True (+13) Elevation Angle: -19.7 Horizon Angle: -00.8 Zoom: 1.0X S-L22 AND ADJACENT SITES RIVER WEIGHTS Mountain Valley</small></p> 	<p><small>Date & Time: Wed, Sep 27, 2023 at 11:06:44 EDT Position: +037.9541110, -080.7398317 (+15.7ft) Altitude: 2401ft (+105.0ft) Datum: WGS-84 Azimuth Bearing: 290° W00W 5156mils True (+13) Elevation Angle: -19.3 Horizon Angle: -00.8 Zoom: 1.0X S-L22 AND ADJACENT SITES FILLING CONCRETE WALLS WITH SAND Mountain Valley</small></p> 
GPS Location See Photo	GPS Location See Photo
Description Photo 5: Placement of river weights on pipe in trench at aquatic resource crossing.	Description Photo 6: Concrete barriers being constructed, and sand placed between barriers.
<p><small>Date & Time: Thu, Sep 28, 2023 at 15:48:00 EDT Position: +037.9540934, -080.7397677 (+21.2ft) Altitude: 2466ft (+19.7ft) Datum: WGS-84 Azimuth Bearing: 155° S25E 2755mils True (+13) Elevation Angle: -10.1 Horizon Angle: -00.5 Zoom: 1.0X S-L22 SURVEYORS ON SITE Mountain Valley</small></p> 	<p><small>Date & Time: Thu, Oct 05, 2023 at 18:02:44 EDT Position: +037.9540333, -080.7396787 (+15.4ft) Altitude: 2459ft (+28.2ft) Datum: WGS-84 Azimuth Bearing: 227° S47W 5000mils True (+28) Elevation Angle: -00.8 Horizon Angle: -00.8 Zoom: 1.0X S-L22 FINALIZED COFFER DAM Mountain Valley</small></p> 
GPS Location See Photo	GPS Location See Photo
Description Photo 7: Survey checking bank elevations.	Description Photo 8: Coffer dam constructed to protect aquatic resource.