# Baseline Assessment – Stream Attributes

***Revisit***

****Additional field visits were attempted on 1/6/2022, however data could not be collected because the stream channel is outside of the existing perimeter controls. For those streams, professional judgment was used to assign proxy values based on comparable streams in proximity.***

# Reach S-H30 (Pipeline ROW) *
# Intermittent
# Spread I
# Franklin County, Virginia

| Data | Included |
|---|---|
| Photos | ✓* |
| USM Form (Virginia Only) | ✓ |
| SWVM Form | Proxy Stream Information Utilized; Refer to Master Stream Summary Table |
| FCI Calculator and HGM Form | |
| RBP Physical Characteristics Form | |
| Water Quality Data | |
| RBP Habitat Form | |
| RBP Benthic Form | |
| Benthic Identification Sheet | |
| Wolman Pebble Count | |
| RiverMorph Data Sheet | |
| Longitudinal Profile and Cross Sections | |

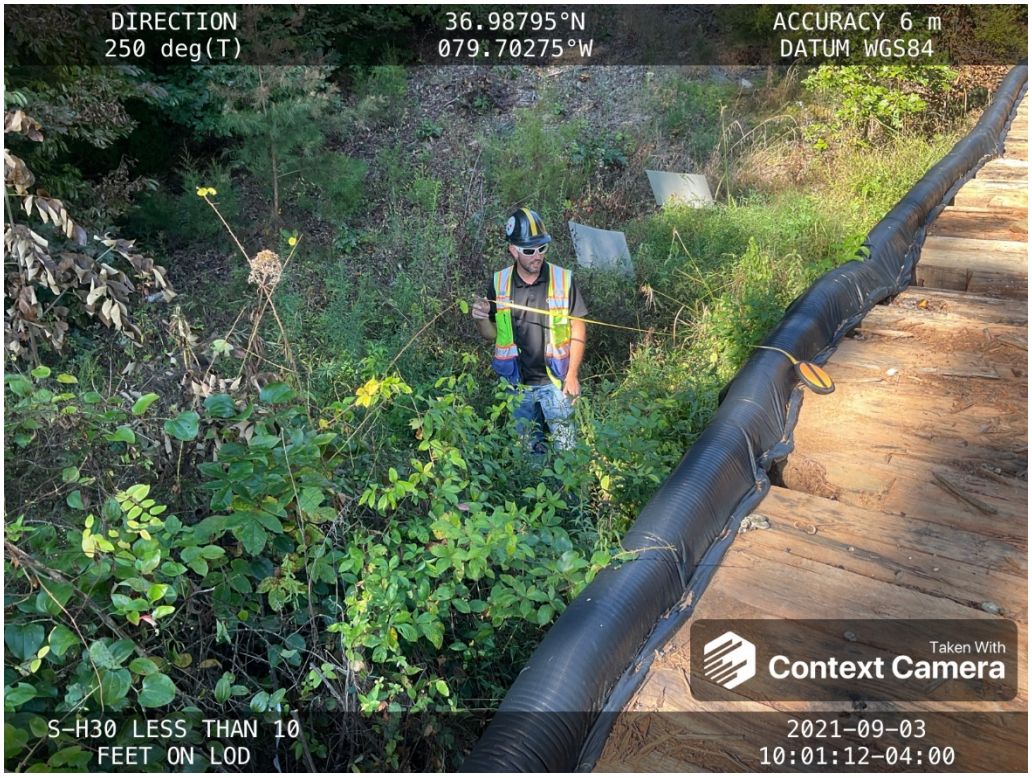


Photo Type: LESS THAN 10 FEET ON LOD
Location, Orientation, Photographer Initials: At ROW/LOD, looking SW, RAH

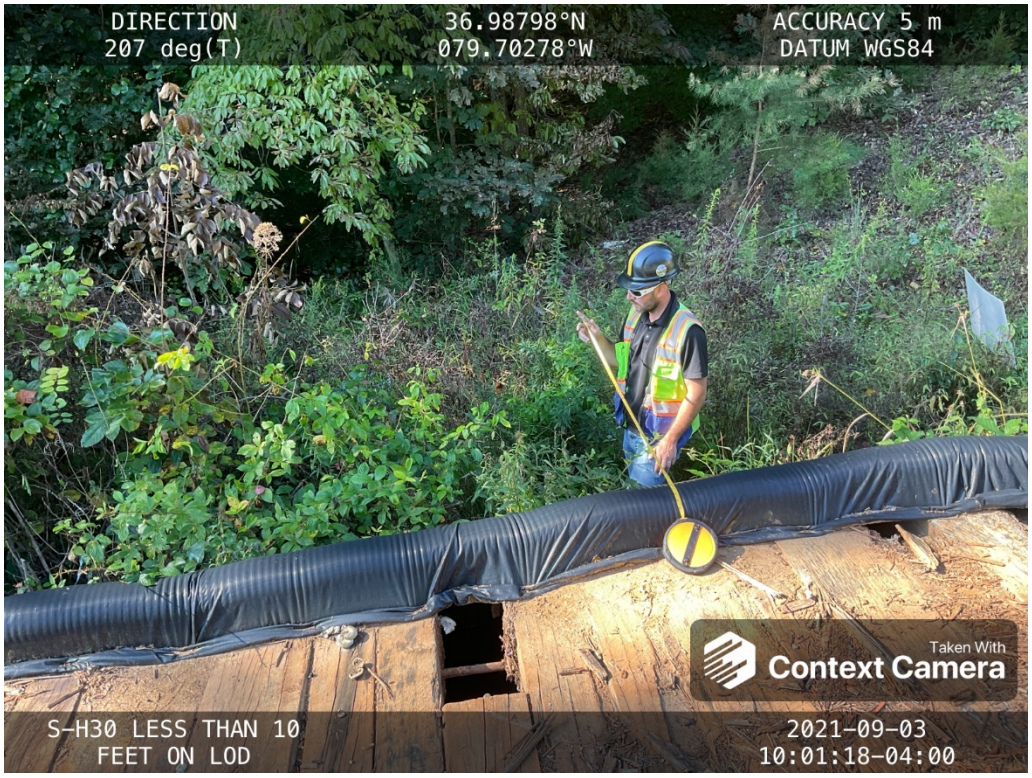


Photo Type: LESS THAN 10 FEET ON LOD
Location, Orientation, Photographer Initials: At ROW/LOD looking SW, RAH


Photo Type: LESS THAN 10 FEET ON LOD
Location, Orientation, Photographer Initials: At ROW/LOD looking SE, RAH


Photo Type: LESS THAN 10 FEET ON LOD
Location, Orientation, Photographer Initials: At ROW/LOD looking SE, RAH


Photo Type: LESS THAN 10 FEET ON LOD
Location, Orientation, Photographer Initials: At ROW/LOD looking SE, RAH

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Photo Type: US VIEW
Location, Orientation, Photographer Initials: Upstream view of LOC looking N at Wetland H1, KB


Photo Type: LB CL
Location, Orientation, Photographer Initials: Standing on LB looking at RB along pipe centerline looking W/SW, KB (LB stream does not cross CL)


Photo Type: RB CL
Location, Orientation, Photographer Initials: Standing on RB looking at LB along pipe centerline looking E/SE, KB (RB stream does not cross CL)

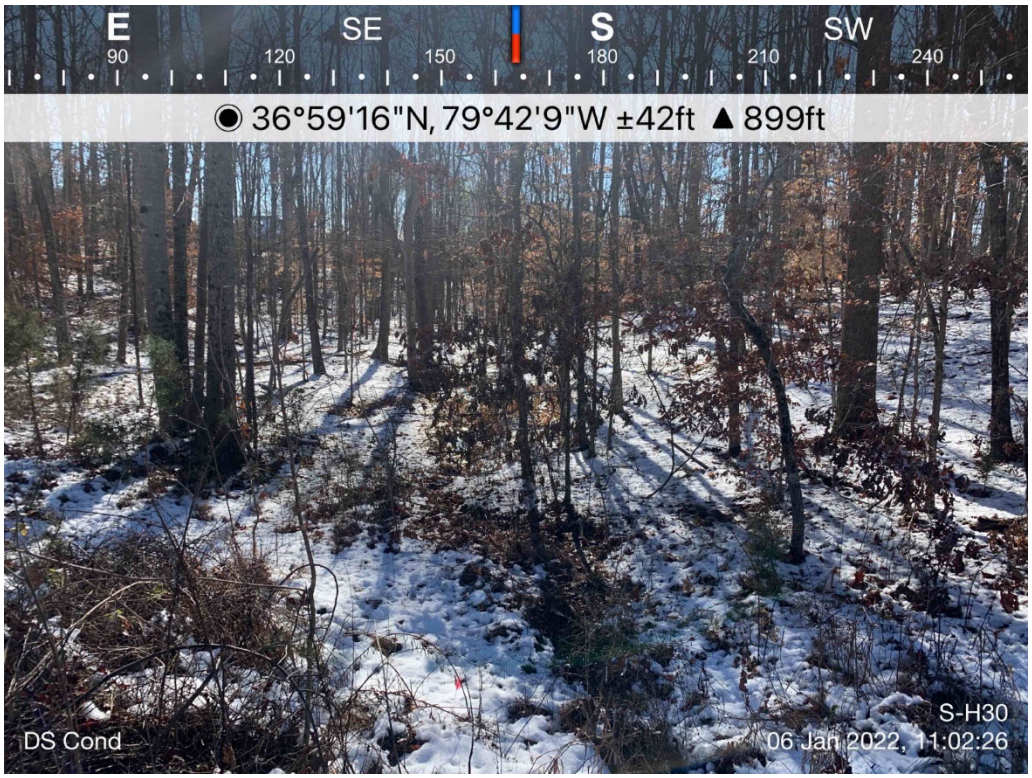



Photo Type: DS COND
Location, Orientation, Photographer Initials: Downstream conditions outside of LOC looking S/SE, KB

# Stream Assessment Form (Form 1)

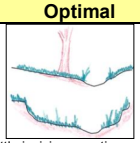
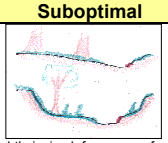
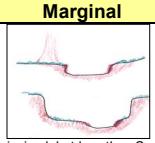
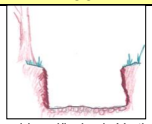
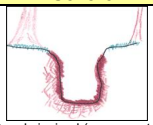
**Unified Stream Methodology for use in Virginia**

**For use in wadeable channels classified as intermittent or perennial**

| Project # | Project Name (Applicant) | Locality | Cowardin Class. | HUC | Date | SAR # | Impact Length | Impact Factor |
|---|---|---|---|---|---|---|---|---|
| 22865.06 | Mountain Valley Pipeline (Mountain Valley Pipeline, LLC) | Franklin County | R4 | 03010101 | 8/25/2021 | S-H30 | 4 | 1 |

| Name(s) of Evaluator(s) | Stream Name and Information | SAR Length |
|---|---|---|
| DW JM | UNT to Jacks Creek | 7 |

**1. Channel Condition:** Assess the cross-section of the stream and prevailing condition (erosion, aggradation)

| | Conditional Category | | | | | |
|---|---|---|---|---|---|---|
| | Optimal | Suboptimal | Marginal | Poor | Severe | |
| Channel Condition |  Very little incision or active erosion; 80-100% stable banks. Vegetative surface protection or natural rock, prominent (80-100%). AND/OR Stable point bars / bankfull benches are present. Access to their original floodplain or fully developed wide bankfull benches. Mid-channel bars and transverse bars few. Transient sediment deposition covers less than 10% of bottom. |  Slightly incised, few areas of active erosion or unprotected banks. Majority of banks are stable (60-80%). Vegetative protection or natural rock prominent (60-80%) AND/OR Depositional features contribute to stability. The bankfull and low flow channels are well defined. Stream likely has access to bankfull benches,or newly developed floodplains along portions of the reach. Transient sediment covers 10-40% of the stream bottom. |  Often incised, but less than Severe or Poor. Banks more stable than Severe or Poor due to lower bank slopes. Erosion may be present on 40-60% of both banks. Vegetative protection on 40-60% of banks. Streambanks may be vertical or undercut. AND/OR 40-60% Sediment may be temporary / transient, contribute instability. Deposition that contribute to stability, may be forming/present. AND/OR V-shaped channels have vegetative protection on > 40% of the banks and depositional features which contribute to stability. |  Overwidened/incised. Vertically / laterally unstable. Likely to widen further. Majority of both banks are near vertical. Erosion present on 60-80% of banks. Vegetative protection present on 20-40% of banks, and is insufficient to prevent erosion. AND/OR 60-80% of the stream is covered by sediment. Sediment is temporary / transient in nature, and contributing to instability. AND/OR V-shaped channels have vegetative protection is present on > 40% of the banks and stable sediment deposition is absent. |  Deeply incised (or excavated), vertical/lateral instability. Severe incision, flow contained within the banks. Streambed below average rooting depth, majority of banks vertical/undercut. Vegetative protection present on less than 20% of banks, is not preventing erosion. Obvious bank sloughing present. Erosion/raw banks on 80-100%. AND/OR Aggrading channel. Greater than 80% of stream bed is covered by deposition, contributing to instability. Multiple thread channels and/or subterranean flow. | CI |
| Scores | 3 | 2.4 | 2 | 1.6 | 1 | 2.40 |
| NOTES>> | | | | | | |

**2. RIPARIAN BUFFERS:** Assess both bank's 100 foot riparian areas along the entire SAR. (rough measurements of length & width may be acceptable)

| | Conditional Category | | | | | | | NOTES>> |
|---|---|---|---|---|---|---|---|---|
| | Optimal | Suboptimal | | Marginal | | Poor | | |
| Riparian Buffers | Tree stratum (dbh > 3 inches) present, with > 60% tree canopy cover. Wetlands located within the riparian areas. | **High Suboptimal:** Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. | **Low Suboptimal:** Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory. Recent cutover (dense vegetation). | **High Marginal:** Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover. | **Low Marginal:** Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory. | **High Poor:** Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized, or other comparable condition. | **Low Poor:** Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions. | **Stream was not found in the field; however, riparian buffer scores were assigned based on best professional judgement** |
| | | High | Low | High | Low | High | Low | |
| Scores | 1.5 | 1.2 | 1.1 | 0.85 | 0.75 | 0.6 | 0.5 | |

1. Delineate riparian areas along each stream bank into Condition Categories and Condition Scores using the descriptors.
2. Determine square footage for each by measuring or estimating length and width. Calculators are provided for you below.
3. Enter the % Riparian Area and Score for each riparian category in the blocks below.

Ensure the sums of % Riparian Blocks equal 100

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Right Bank | % Riparian Area> | 100% | | | | | | 100% | |
| | Score > | 0.85 | | | | | | | |
| | | | | | | | | | CI= (Sum % RA * Scores*0.01)/2 |
| Left Bank | % Riparian Area> | 100% | | | | | | 100% | Rt Bank CI > 0.85 CI |
| | Score > | 0.85 | | | | | | | Lt Bank CI > 0.85 0.85 |

**3. INSTREAM HABITAT:** Varied substrate sizes, water velocity and depths; woody and leafy debris; stable substrate; low embededness; shade; undercut banks; root mats; SAV; riffle/pool complexes, stable features.

| | Conditional Category | | | | NOTES>> | |
|---|---|---|---|---|---|---|
| | Optimal | Suboptimal | Marginal | Poor | | |
| Instream Habitat/ Available Cover | Habitat elements are typically present in greater than 50% of the reach. | Stable habitat elements are typically present in 30-50% of the reach and are adequate for maintenance of populations. | Stable habitat elements are typically present in 10-30% of the reach and are adequate for maintenance of populations. | Habitat elements listed above are lacking or are unstable. Habitat elements are typically present in less than 10% of the reach. | Stream Gradient | CI |
| Scores | 1.5 | 1.2 | 0.9 | 0.5 | High / Low | |

# Stream Impact Assessment Form Page 2

| Project # | Project Name (Applicant) | Locality | Cowardin Class. | HUC | Date | SAR # | Impact Length | Impact Factor |
|---|---|---|---|---|---|---|---|---|
| 22865.06 | Mountain Valley Pipeline (Mountain Valley Pipeline, LLC) | Franklin County | R4 | 03010101 | 8/25/2021 | S-H30 | 4 | 1 |

**4. CHANNEL ALTERATION:** Stream crossings, riprap, concrete, gabions, or concrete blocks, straightening of channel, channelization, embankments, spoil piles, constrictions, livestock

| | Conditional Category | | | | | | NOTES>> | |
|---|---|---|---|---|---|---|---|---|
| | Negligible | Minor | | Moderate | | Severe | | |
| Channel Alteration | Channelization, dredging, alteration, or hardening absent. Stream has an unaltered pattern or has naturalized. | Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines. | 20-40% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines. | 40 - 60% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not recovered. | 60 - 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not recovered. | Greater than 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines AND/OR 80% of banks shored with gabion, riprap, or cement. | | CI |
| Scores | 1.5 | 1.3 | 1.1 | 0.9 | 0.7 | 0.5 | | 1.10 |

**REACH CONDITION INDEX and STREAM CONDITION UNITS FOR THIS REACH**

***NOTE:*** **The CIs and RCI should be rounded to 2 decimal places. The CR should be rounded to a whole number.**

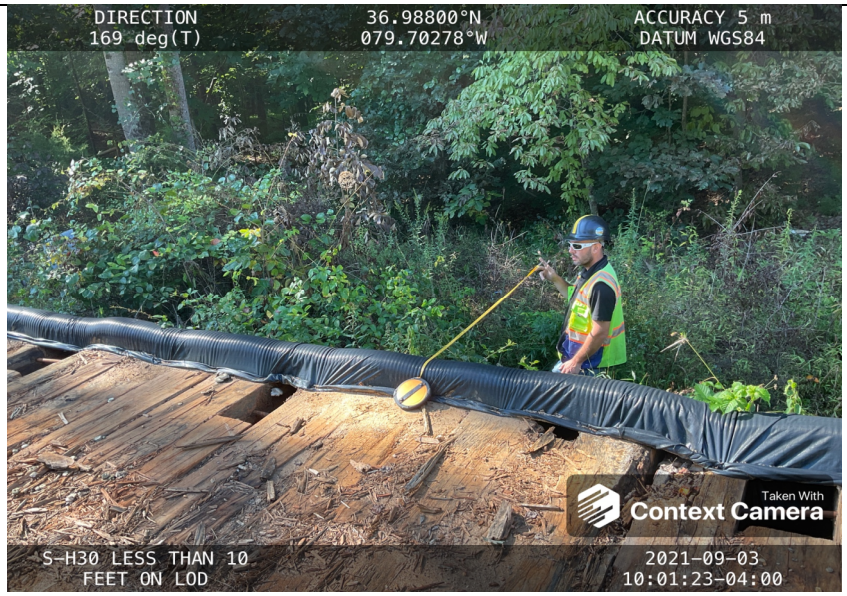
| | |
|---|---|
| **THE REACH CONDITION INDEX (RCI) >>** | **0.87** |

RCI= (Sum of all CI's)/5, except if stream is ephemeral RCI = (Riparian CI/2)

| | |
|---|---|
| **COMPENSATION REQUIREMENT (CR) >>** | **3** |

CR = RCI X $L_I$ X IF

**INSERT PHOTOS:**




CAPTION. Assessment is limited to areas within the temporary ROW.

**DESCRIBE PROPOSED IMPACT:**

**PROVIDED UNDER SEPARATE COVER**