

Baseline Assessment – Stream Attributes

Reach S-H28 (Pipeline ROW)

Ephemeral

Spread I

Franklin County, Virginia

Data	Included
Photos	✓
SWVM Form	✓
FCI Calculator and HGM Form	N/A – No slope per no survey done outside ROW
RBP Physical Characteristics Form	✓
Water Quality Data	N/A – No flow
RBP Habitat Form	✓
RBP Benthic Form	✓
Benthic Identification Sheet	N/A – No flow
Wolman Pebble Count	✓
RiverMorph Data Sheet	✓
USM Form (Virginia Only)	✓
Longitudinal Profile and Cross Sections	N/A – Best Professional Judgement – No Survey outside ROW

Spread I

Stream S-H28 (ROW) Franklin County



Photo Type: US VIEW

Location, Orientation, Photographer Initials: Downstream at LOC looking NW, RAH

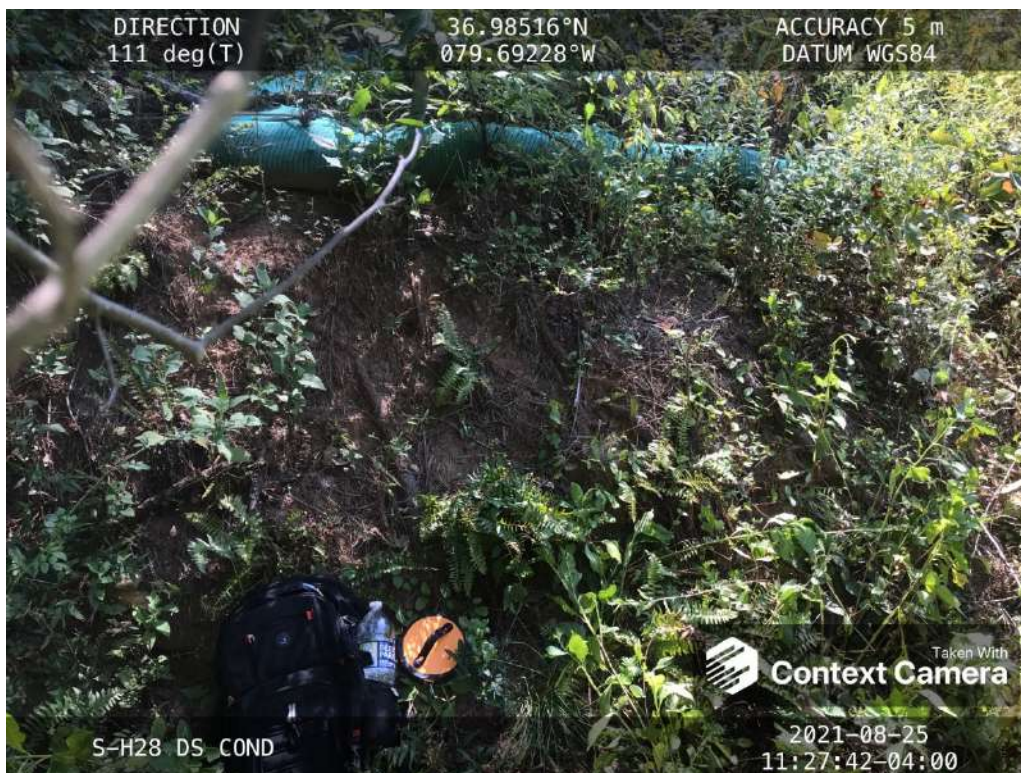


Photo Type: DS COND DS

Location, Orientation, Photographer Initials: Downstream at LOC looking SE downstream, RAH

Spread I

Stream S-H28 (ROW) Franklin County



Photo Type: LB CL

Location, Orientation, Photographer Initials: On thalweg at pipe centerline looking S at left streambank, RAH



Photo Type: RB CL

Location, Orientation, Photographer Initials: On thalweg at pipe centerline looking N at right streambank, RAH

Spread I

Stream S-H28 (ROW) Franklin County



Photo Type: US COND

Location, Orientation, Photographer Initials: Upstream at LOC looking NW upstream, RAH

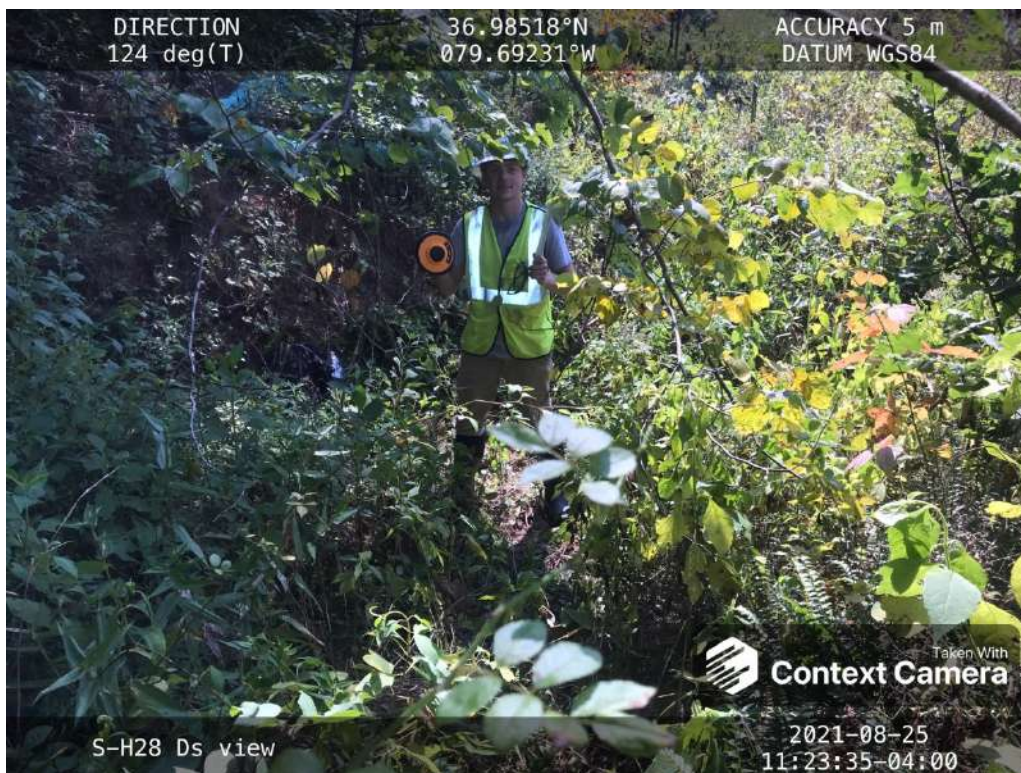


Photo Type: DS VIEW

Location, Orientation, Photographer Initials: Upstream at LOD looking SE downstream, RAH

USACE FILE NO/ Project Name:
(V2.1, Sept 2015)

Mountain Valley Pipeline

IMPACT COORDINATES:
(in Decimal Degrees)

Lat.

36.985174

Lon.

-79.692272

WEATHER:

Sunny

DATE:

August 25, 2021

IMPACT STREAM/SITE ID AND SITE DESCRIPTION:
(watershed size (acresage), unaltered or impairment)

S-H28; 2.71 ac

MITIGATION STREAM CLASS/SITE ID AND SITE DESCRIPTION:
(watershed size (acresage), unaltered or impairment)

Comments:

STREAM IMPACT LENGTH:

16

FORM OF MITIGATION:

RESTORATION (Levels I-III)

MIT COORDINATES:
(in Decimal Degrees)

Lat.

Lon.

PRECIPITATION PAST 48 HRS:

No

Mitigation Length:

Column No. 1- Impact Existing Condition (Debit)

Stream Classification:

Ephemeral

Percent Stream Channel Slope

HGM Score (attach data forms):

Average

Hydrology

Biogeochemical Cycling

0

Habitat

PART I - Physical, Chemical and Biological Indicators

Points Score

Range

Site Score

PHYSICAL INDICATOR (Applies to all streams classifications)

USEPA RBP (High Gradient Data Sheet)

1. Epifaunal Substrate/Available Cover

0-20

0

2. Embeddedness

0-20

8

3. Velocity/ Depth Regime

0-20

0

4. Sediment Deposition

0-20

0

5. Channel Flow Status

0-20

0

6. Channel Alteration

0-20

0-1

18

7. Frequency of Riffles (or bends)

0-20

0

8. Bank Stability (LB & RB)

0-20

0

9. Vegetative Protection (LB & RB)

0-20

12

10. Riparian Vegetative Zone Width (LB & RB)

0-20

8

Total RBP Score

59

Sub-Total

0.48333333

CHEMICAL INDICATOR (Applies to Intermittent and Perennial Streams)

WVDEP Water Quality Indicators (General)

Specific Conductivity

100-199 = 85 points

0-90

pH

5.6-5.9 = 45 points

0-80

0-1

DO

10-30

Sub-Total

BIOLOGICAL INDICATOR (Applies to Intermittent and Perennial Streams)

WV Stream Condition Index (WVSCI)

0

0-100

0-1

0

Sub-Total

0

Column No. 2- Mitigation Existing Condition - Baseline (Credit)

Stream Classification:

Percent Stream Channel Slope

HGM Score (attach data forms):

Average

Hydrology

Biogeochemical Cycling

0

Habitat

PART I - Physical, Chemical and Biological Indicators

Points Score

Range

Site Score

PHYSICAL INDICATOR (Applies to all streams classifications)

USEPA RBP (Low Gradient Data Sheet)

1. Epifaunal Substrate/Available Cover

0-20

2. Embeddedness

0-20

3. Velocity/ Depth Regime

0-20

4. Sediment Deposition

0-20

5. Channel Flow Status

0-20

0-1

6. Channel Alteration

0-20

0-1

7. Frequency of Riffles (or bends)

0-20

8. Bank Stability (LB & RB)

0-20

9. Vegetative Protection (LB & RB)

0-20

10. Riparian Vegetative Zone Width (LB & RB)

0-20

Total RBP Score

0

Sub-Total

0

CHEMICAL INDICATOR (Applies to Intermittent and Perennial Streams)

WVDEP Water Quality Indicators (General)

Specific Conductivity

0-90

pH

5-90

0-1

DO

10-30

Sub-Total

0

BIOLOGICAL INDICATOR (Applies to Intermittent and Perennial Streams)

WV Stream Condition Index (WVSCI)

0-100

0-1

Sub-Total

0

Column No. 3- Mitigation Projected at Five Years Post Completion (Credit)

Stream Classification:

0

Percent Stream Channel Slope

0

HGM Score (attach data forms):

Average

Hydrology

Biogeochemical Cycling

0

Habitat

PART I - Physical, Chemical and Biological Indicators

Points Score

Range

Site Score

PHYSICAL INDICATOR (Applies to all streams classifications)

USEPA RBP (High Gradient Data Sheet)

1. Epifaunal Substrate/Available Cover

0-20

2. Embeddedness

0-20

3. Velocity/ Depth Regime

0-20

4. Sediment Deposition

0-20

5. Channel Flow Status

0-20

0-1

6. Channel Alteration

0-20

0-1

7. Frequency of Riffles (or bends)

0-20

8. Bank Stability (LB & RB)

0-20

9. Vegetative Protection (LB & RB)

0-20

10. Riparian Vegetative Zone Width (LB & RB)

0-20

Total RBP Score

0

Sub-Total

0

CHEMICAL INDICATOR (Applies to Intermittent and Perennial Streams)

WVDEP Water Quality Indicators (General)

Specific Conductivity

0-90

pH

5-90

0-1

DO

10-30

Sub-Total

0

BIOLOGICAL INDICATOR (Applies to Intermittent and Perennial Streams)

WV Stream Condition Index (WVSCI)

0-100

0-1

Sub-Total

0

Column No. 4- Mitigation Projected at Ten Years Post Completion (Credit)

Stream Classification:

0

Percent Stream Channel Slope

0

HGM Score (attach data forms):

Average

Hydrology

Biogeochemical Cycling

0

Habitat

PART I - Physical, Chemical and Biological Indicators

Points Score

Range

Site Score

PHYSICAL INDICATOR (Applies to all streams classifications)

USEPA RBP (High Gradient Data Sheet)

1. Epifaunal Substrate/Available Cover

0-20

2. Embeddedness

0-20

3. Velocity/ Depth Regime

0-20

4. Sediment Deposition

0-20

5. Channel Flow Status

0-20

0-1

6. Channel Alteration

0-20

0-1

7. Frequency of Riffles (or bends)

0-20

8. Bank Stability (LB & RB)

0-20

9. Vegetative Protection (LB & RB)

0-20

10. Riparian Vegetative Zone Width (LB & RB)

0-20

Total RBP Score

0

Sub-Total

0

CHEMICAL INDICATOR (Applies to Intermittent and Perennial Streams)

WVDEP Water Quality Indicators (General)

Specific Conductivity

0-90

pH

5-90

0-1

DO

10-30

Sub-Total

0

BIOLOGICAL INDICATOR (Applies to Intermittent and Perennial Streams)

WV Stream Condition Index (WVSCI)

0-100

0-1

Sub-Total

0

Column No. 5- Mitigation Projected at Maturity (Credit)

Stream Classification:

0

Percent Stream Channel Slope

0

HGM Score (attach data forms):

Average

Hydrology

Biogeochemical Cycling

0

Habitat

PART I - Physical, Chemical and Biological Indicators

Points Score

Range

Site Score

PHYSICAL INDICATOR (Applies to all streams classifications)

USEPA RBP (High Gradient Data Sheet)

1. Epifaunal Substrate/Available Cover

0-20

2. Embeddedness

0-20

3. Velocity/ Depth Regime

0-20

4. Sediment Deposition

0-20

5. Channel Flow Status

0-20

0-1

6. Channel Alteration

0-20

0-1

7. Frequency of Riffles (or bends)

0-20

8. Bank Stability (LB & RB)

0-20

9. Vegetative Protection (LB & RB)

0-20

10. Riparian Vegetative Zone Width (LB & RB)

0-20

Total RBP Score

0

Sub-Total

0

CHEMICAL INDICATOR (Applies to Intermittent and Perennial Streams)

WVDEP Water Quality Indicators (General)

Specific Conductivity

0-90

pH

5-90

0-1

DO

10-30

Sub-Total

0

BIOLOGICAL INDICATOR (Applies to Intermittent and Perennial Streams)

WV Stream Condition Index (WVSCI)

0-100

0-1

Sub-Total

0

PART II - Index and Unit Score

Index

Linear Feet

Unit Score

0.642

16

10.2666667

PART II - Index and Unit Score

Index

Linear Feet

Unit Score

0

0

0

PART II - Index and Unit Score

Index

Linear Feet

Unit Score

0

0

0

PART II - Index and Unit Score

Index

Linear Feet

Unit Score

0

0

0

PART II - Index and Unit Score

Index

Linear Feet

Unit Score

0

0

0

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET (FRONT)

STREAM NAME _____	LOCATION _____	
STATION # _____ RIVERMILE _____	STREAM CLASS _____	
LAT _____ LONG _____	RIVER BASIN _____	
STORET # _____	AGENCY _____	
INVESTIGATORS _____		
FORM COMPLETED BY _____	DATE _____ TIME _____	REASON FOR SURVEY _____

WEATHER CONDITIONS	Now storm (heavy rain) _____ rain (steady rain) _____ showers (intermittent) _____ %cloud cover _____ clear/sunny _____ Past 24 hours _____% _____% Has there been a heavy rain in the last 7 days? Yes _____ No _____ Air Temperature _____ °C Other _____		
SITE LOCATION/MAP	Draw a map of the site and indicate the areas sampled (or attach a photograph) 		
STREAM CHARACTERIZATION	Stream Subsystem Perennial _____ Intermittent _____ Tidal _____ Stream Type Coldwater _____ Warmwater _____ Stream Origin Glacial _____ Non-glacial montane _____ Swamp and bog _____ Spring-fed _____ Mixture of origins _____ Other _____ Catchment Area _____ km²		

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET (BACK)

WATERSHED FEATURES	Predominant Surrounding Landuse Forest _____ Field/Pasture _____ Agricultural _____ Residential _____ Commercial _____ Industrial _____ Other _____	Local Watershed NPS Pollution No evidence ☐ Some potential sources Obvious sources _____ Local Watershed Erosion None _____ Moderate _____ Heavy _____
RIPARIAN VEGETATION (18 meter buffer)	Indicate the dominant type and record the dominant species present Trees _____ Shrubs _____ Grasses _____ Herbaceous _____ Dominant species present _____	
INSTREAM FEATURES	Estimated Reach Length _____ m Estimated Stream Width _____ m Sampling Reach Area _____ m² Area in km² (m²x1000) _____ km² Estimated Stream Depth _____ m Surface Velocity (at thalweg) _____ m/sec Canopy Cover Partly open _____ Partly shaded _____ Shaded _____ High Water Mark _____ m Proportion of Reach Represented by Stream Morphology Types Riffle _____ % Run _____ % Pool _____ % Channelized Yes _____ No _____ Dam Present Yes _____ No _____	
LARGE WOODY DEBRIS	LWD _____ m ² Density of LWD _____ m ² /km ² (LWD/ reach area)	
AQUATIC VEGETATION	Indicate the dominant type and record the dominant species present Rooted emergent _____ Rooted submergent _____ Rooted floating _____ Free floating _____ Floating Algae _____ Attached Algae _____ Dominant species present _____ Portion of the reach with aquatic vegetation _____ %	
WATER QUALITY	Temperature _____ °C Specific Conductance _____ Dissolved Oxygen _____ pH _____ Turbidity _____ WQ Instrument Used _____ Water Odors Normal/None _____ Sewage _____ Petroleum _____ Chemical _____ Fishy _____ Other _____ Water Surface Oils Slick _____ Sheen _____ Globs _____ Flecks _____ None _____ Other _____ Turbidity (if not measured) Clear ☐ Slightly turbid _____ Turbid _____ Opaque _____ Stained _____ Other _____	
SEDIMENT/SUBSTRATE	Odors Normal _____ Sewage _____ Petroleum _____ Chemical _____ Anaerobic _____ None _____ Other _____ Deposits Sludge _____ Sawdust _____ Paper fiber _____ Sand _____ Relict shells _____ Other _____ Looking at stones which are not deeply embedded, are the undersides black in color? Yes _____ No _____	

INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)			ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)		
Substrate Type	Diameter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock			Detritus	sticks, wood, coarse plant materials (CPOM)	
Boulder	> 256 mm (10")				
Cobble	64-256 mm (2.5"-10")		Muck-Mud	black, very fine organic (FPOM)	
Gravel	2-64 mm (0.1"-2.5")				
Sand	0.06-2mm (gritty)		Marl	grey, shell fragments	
Silt	0.004-0.06 mm				
Clay	< 0.004 mm (slick)				

HABITAT ASSESSMENT FIELD DATA SHEET - HG - USE ON ALL STREAMS (FRONT)

STREAM NAME _____	LOCATION _____	
STATION # _____ RIVERMILE _____	STREAM CLASS _____	
LAT _____ LONG _____	RIVER BASIN _____	
STORET # _____	AGENCY _____	
INVESTIGATORS _____		
FORM COMPLETED BY _____	DATE _____ TIME _____ AM PM	REASON FOR SURVEY _____

Parameters to be evaluated in sampling reach	Habitat Parameter	Condition Category			
		Optimal	Suboptimal	Marginal	Poor
	1. Epifaunal Substrate/ Available Cover	Greater than 70% of substrate favorable for epifaunal colonization and fish cover; mix of snags, submerged logs, undercut banks, cobble or other stable habitat and at stage to allow full colonization potential (i.e., logs/snags that are <u>not</u> new fall and <u>not</u> transient).	40-70% mix of stable habitat; well-suited for full colonization potential; adequate habitat for maintenance of populations; presence of additional substrate in the form of newfall, but not yet prepared for colonization (may rate at high end of scale).	20-40% mix of stable habitat; habitat availability less than desirable; substrate frequently disturbed or removed.	Less than 20% stable habitat; lack of habitat is obvious; substrate unstable or lacking.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	2. Embeddedness	Gravel, cobble, and boulder particles are 0-25% surrounded by fine sediment. Layering of cobble provides diversity of niche space.	Gravel, cobble, and boulder particles are 25-50% surrounded by fine sediment.	Gravel, cobble, and boulder particles are 50-75% surrounded by fine sediment.	Gravel, cobble, and boulder particles are more than 75% surrounded by fine sediment.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	3. Velocity/Depth Regime	All four velocity/depth regimes present (slow-deep, slow-shallow, fast-deep, fast-shallow). (Slow is < 0.3 m/s, deep is > 0.5 m.)	Only 3 of the 4 regimes present (if fast-shallow is missing, score lower than if missing other regimes).	Only 2 of the 4 habitat regimes present (if fast-shallow or slow-shallow are missing, score low).	Dominated by 1 velocity/depth regime (usually slow-deep).
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	4. Sediment Deposition	Little or no enlargement of islands or point bars and less than 5% of the bottom affected by sediment deposition.	Some new increase in bar formation, mostly from gravel, sand or fine sediment; 5-30% of the bottom affected; slight deposition in pools.	Moderate deposition of new gravel, sand or fine sediment on old and new bars; 30-50% of the bottom affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition of pools prevalent.	Heavy deposits of fine material, increased bar development; more than 50% of the bottom changing frequently; pools almost absent due to substantial sediment deposition.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
	5. Channel Flow Status	Water reaches base of both lower banks, and minimal amount of channel substrate is exposed.	Water fills >75% of the available channel; or <25% of channel substrate is exposed.	Water fills 25-75% of the available channel, and/or riffle substrates are mostly exposed.	Very little water in channel and mostly present as standing pools.
	SCORE	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0

HABITAT ASSESSMENT FIELD DATA SHEET—HIGH GRADIENT STREAMS (BACK)

Habitat Parameter	Condition Category																				
	Optimal					Suboptimal					Marginal					Poor					
6. Channel Alteration	Channelization or dredging absent or minimal; stream with normal pattern.					Some channelization present, usually in areas of bridge abutments; evidence of past channelization, i.e., dredging, (greater than past 20 yr) may be present, but recent channelization is not present.					Channelization may be extensive; embankments or shoring structures present on both banks; and 40 to 80% of stream reach channelized and disrupted.					Banks shored with gabion or cement; over 80% of the stream reach channelized and disrupted. Instream habitat greatly altered or removed entirely.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
7. Frequency of Riffles (or bends)	Occurrence of riffles relatively frequent; ratio of distance between riffles divided by width of the stream <7:1 (generally 5 to 7); variety of habitat is key. In streams where riffles are continuous, placement of boulders or other large, natural obstruction is important.					Occurrence of riffles infrequent; distance between riffles divided by the width of the stream is between 7 to 15.					Occasional riffle or bend; bottom contours provide some habitat; distance between riffles divided by the width of the stream is between 15 to 25.					Generally all flat water or shallow riffles; poor habitat; distance between riffles divided by the width of the stream is a ratio of >25.					
SCORE	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
8. Bank Stability (score each bank)	Banks stable; evidence of erosion or bank failure absent or minimal; little potential for future problems. <5% of bank affected.					Moderately stable; infrequent, small areas of erosion mostly healed over. 5-30% of bank in reach has areas of erosion.					Moderately unstable; 30-60% of bank in reach has areas of erosion; high erosion potential during floods.					Unstable; many eroded areas; "raw" areas frequent along straight sections and bends; obvious bank sloughing; 60-100% of bank has erosional scars.					
Note: determine left or right side by facing downstream.																					
SCORE ____ (LB)	Left Bank	10		9		8	7		6		5	4		3		2	1		0		
SCORE ____ (RB)	Right Bank	10		9		8	7		6		5	4		3		2	1		0		
9. Vegetative Protection (score each bank)	More than 90% of the streambank surfaces and immediate riparian zone covered by native vegetation, including trees, understory shrubs, or nonwoody macrophytes; vegetative disruption through grazing or mowing minimal or not evident; almost all plants allowed to grow naturally.					70-90% of the streambank surfaces covered by native vegetation, but one class of plants is not well-represented; disruption evident but not affecting full plant growth potential to any great extent; more than one-half of the potential plant stubble height remaining.					50-70% of the streambank surfaces covered by vegetation; disruption obvious; patches of bare soil or closely cropped vegetation common; less than one-half of the potential plant stubble height remaining.					Less than 50% of the streambank surfaces covered by vegetation; disruption of streambank vegetation is very high; vegetation has been removed to 5 centimeters or less in average stubble height.					
SCORE ____ (LB)	Left Bank	10		9		8	7		6		5	4		3		2	1		0		
SCORE ____ (RB)	Right Bank	10		9		8	7		6		5	4		3		2	1		0		
10. Riparian Vegetative Zone Width (score each bank riparian zone)	Width of riparian zone >18 meters; human activities (i.e., parking lots, roadbeds, clear-cuts, lawns, or crops) have not impacted zone.					Width of riparian zone 12-18 meters; human activities have impacted zone only minimally.					Width of riparian zone 6-12 meters; human activities have impacted zone a great deal.					Width of riparian zone <6 meters; little or no riparian vegetation due to human activities.					
SCORE ____ (LB)	Left Bank	10		9		8	7		6		5	4		3		2	1		0		
SCORE ____ (RB)	Right Bank	10		9		8	7		6		5	4		3		2	1		0		

Total Score _____

BENTHIC MACROINVERTEBRATE FIELD DATA SHEET

STREAM NAME _____	LOCATION _____	
STATION # _____ RIVERMILE _____	STREAM CLASS _____	
LAT _____ LONG _____	RIVER BASIN _____	
STORET # _____	AGENCY _____	
INVESTIGATORS _____		LOT NUMBER _____
FORM COMPLETED BY _____	DATE _____ TIME _____	REASON FOR SURVEY _____

HABITAT TYPES	Indicate the percentage of each habitat type present Cobble _____% Snags _____% Vegetated Banks _____% Sand _____% Submerged Macrophytes _____% Other (_____) _____%
SAMPLE COLLECTION	Gear used D-frame kick-net Other _____ How were the samples collected? wading from bank from boat Indicate the number of jabs/kicks taken in each habitat type. Cobble _____ Snags _____ Vegetated Banks _____ Sand _____ Submerged Macrophytes _____ Other (_____) _____
GENERAL COMMENTS	

QUALITATIVE LISTING OF AQUATIC BIOTA

Indicate estimated abundance: 0 = Absent/Not Observed, 1 = Rare, 2 = Common, 3= Abundant, 4 = Dominant

Periphyton	0	1	2	3	4	Slimes	0	1	2	3	4
Filamentous Algae	0	1	2	3	4	Macroinvertebrates	0	1	2	3	4
Macrophytes	0	1	2	3	4	Fish	0	1	2	3	4

FIELD OBSERVATIONS OF MACROBENTHOS

Indicate estimated abundance: 0 = Absent/Not Observed, 1 = Rare (1-3 organisms), 2 = Common (3-9 organisms), 3= Abundant (>10 organisms), 4 = Dominant (>50 organisms)

Porifera	0	1	2	3	4	Anisoptera	0	1	2	3	4	Chironomidae	0	1	2	3	4
Hydrozoa	0	1	2	3	4	Zygoptera	0	1	2	3	4	Ephemeroptera	0	1	2	3	4
Platyhelminthes	0	1	2	3	4	Hemiptera	0	1	2	3	4	Trichoptera	0	1	2	3	4
Turbellaria	0	1	2	3	4	Coleoptera	0	1	2	3	4	Other	0	1	2	3	4
Hirudinea	0	1	2	3	4	Lepidoptera	0	1	2	3	4						
Oligochaeta	0	1	2	3	4	Sialidae	0	1	2	3	4						
Isopoda	0	1	2	3	4	Corydalidae	0	1	2	3	4						
Amphipoda	0	1	2	3	4	Tipulidae	0	1	2	3	4						
Decapoda	0	1	2	3	4	Empididae	0	1	2	3	4						
Gastropoda	0	1	2	3	4	Simuliidae	0	1	2	3	4						
Bivalvia	0	1	2	3	4	Tabinidae	0	1	2	3	4						
						Culcidae	0	1	2	3	4						

WOLMAN PEBBLE COUNT FORM

County:	Franklin County
Stream Name:	UNT to
HUC Code:	03010101
Survey Date:	9/4/2021
Surveyors:	RH RC
Type:	Representative

Stream ID: S-H28

Basin: Upper Roanoke

PEBBLE COUNT							
Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum
	Silt/Clay	< .062	S/C	▲ ▼	100	100.00	100.00
	Very Fine	.062-.125	S A N D	▲ ▼		0.00	100.00
	Fine	.125-.25		▲ ▼	0	0.00	100.00
	Medium	.25-.5		▲ ▼	0	0.00	100.00
	Coarse	.50-1.0		▲ ▼	0	0.00	100.00
.04-.08	Very Coarse	1.0-2		▲ ▼	0	0.00	100.00
.08 -.16	Very Fine	2 -4		G R A V E L	▲ ▼	0	0.00
.16 - .22	Fine	4 -5.7	▲ ▼		0	0.00	100.00
.22 - .31	Fine	5.7 - 8	▲ ▼		0	0.00	100.00
.31 - .44	Medium	8 -11.3	▲ ▼		0	0.00	100.00
.44 - .63	Medium	11.3 - 16	▲ ▼		0	0.00	100.00
.63 - .89	Coarse	16 -22.6	▲ ▼		0	0.00	100.00
.89 - 1.26	Coarse	22.6 - 32	▲ ▼		0	0.00	100.00
1.26 - 1.77	Vry Coarse	32 - 45	▲ ▼		0	0.00	100.00
1.77 -2.5	Vry Coarse	45 - 64	▲ ▼		0	0.00	100.00
2.5 - 3.5	Small	64 - 90	C O B B L E		▲ ▼	0	0.00
3.5 - 5.0	Small	90 - 128		▲ ▼	0	0.00	100.00
5.0 - 7.1	Large	128 - 180		▲ ▼	0	0.00	100.00
7.1 - 10.1	Large	180 - 256		▲ ▼		0.00	100.00
10.1 - 14.3	Small	256 - 362	B O U L D E R	▲ ▼		0.00	100.00
14.3 - 20	Small	362 - 512		▲ ▼		0.00	100.00
20 - 40	Medium	512 - 1024		▲ ▼		0.00	100.00
40 - 80	Large	1024 -2048		▲ ▼		0.00	100.00
80 - 160	Vry Large	2048 -4096		▲ ▼		0.00	100.00
	Bedrock		BDRK	▲ ▼		0.00	100.00
				Totals:	100		
	Total Tally:						

RIVERMORPH PARTICLE SUMMARY

River Name: UNT to Jacks Creek
Reach Name: S-H28
Sample Name: Representative
Survey Date: 09/04/2021

Size (mm)	TOT #	ITEM %	CUM %
0 - 0.062	100	100.00	100.00
0.062 - 0.125	0	0.00	100.00
0.125 - 0.25	0	0.00	100.00
0.25 - 0.50	0	0.00	100.00
0.50 - 1.0	0	0.00	100.00
1.0 - 2.0	0	0.00	100.00
2.0 - 4.0	0	0.00	100.00
4.0 - 5.7	0	0.00	100.00
5.7 - 8.0	0	0.00	100.00
8.0 - 11.3	0	0.00	100.00
11.3 - 16.0	0	0.00	100.00
16.0 - 22.6	0	0.00	100.00
22.6 - 32.0	0	0.00	100.00
32 - 45	0	0.00	100.00
45 - 64	0	0.00	100.00
64 - 90	0	0.00	100.00
90 - 128	0	0.00	100.00
128 - 180	0	0.00	100.00
180 - 256	0	0.00	100.00
256 - 362	0	0.00	100.00
362 - 512	0	0.00	100.00
512 - 1024	0	0.00	100.00
1024 - 2048	0	0.00	100.00
Bedrock	0	0.00	100.00

D16 (mm)	0.01
D35 (mm)	0.02
D50 (mm)	0.03
D84 (mm)	0.05
D95 (mm)	0.06
D100 (mm)	0.06
Silt/Clay (%)	100
Sand (%)	0
Gravel (%)	0
Cobble (%)	0
Boulder (%)	0
Bedrock (%)	0

Total Particles = 100.

Ephemeral Stream Assessment Form (Form 1a)

Unified Stream Methodology for use in Virginia

For use in ephemeral streams

Project #	Project Name	Locality	Cowardin Class.	HUC	Date	SAR #	Impact Length	Impact Factor
22865.06	Mountain Valley Pipeline (Mountain Valley Pipeline, LLC)	Franklin County	R6	03010101	08/25/2021	S-H28	16	1
Name(s) of Evaluator(s)		Stream Name and Information					SAR Length	
RH, CL		UNT to Jacks Creek					22	

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>>
Riparian Buffers	Optimal	Suboptimal		Marginal		Poor		
	Tree stratum (dbh > 3 inches) present, with > 60% tree canopy cover and an non-maintained understory. Wetlands 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% 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.	
Condition 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.						Ensure the sums		
2. Determine square footage for each by measuring or estimating length and width. Calculators are provided for you below.						of % Riparian		
3. Enter the % Riparian Area and Score for each riparian category in the blocks below.						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%	
	Score >	0.85						
Rt Bank CI > 0.85 Lt Bank CI > 0.85 CI								

CI= (Sum % RA * Scores*0.01)/2

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) >> 0.43

RCI= (Riparian CI)/2

COMPENSATION REQUIREMENT (CR) >> 7

CR = RCI X LF X IF

INSERT PHOTOS:



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

DESCRIBE PROPOSED IMPACT:

PROVIDED UNDER SEPARATE COVER