Reach S-OO12 (Pipeline ROW) Ephemeral Spread G Giles County, Virginia

Data	Included
Photos	\checkmark
SWVM Form	\checkmark
FCI Calculator and HGM Form	\checkmark
RBP Physical Characteristics Form	\checkmark
Water Quality Data	N/A – No water present
RBP Habitat Form	\checkmark
RBP Benthic Form	\checkmark
Benthic Identification Sheet	N/A – No water present
Wolman Pebble Count	\checkmark
RiverMorph Data Sheet	\checkmark
USM Form (Virginia Only)	\checkmark
Longitudinal Profile and Cross Sections	N/A – No assessable reach present

Stream S-OO12 (ROW)

Giles County



Photo Type: DS VIEW Location, Orientation, Photographer Initials: Downstream view of ROW looking NW, ES



Photo Type: US VIEW Location, Orientation, Photographer Initials: Upstream view of ROW looking SE, ES

Page 1

DEQ Permit #21-0416

Spread G

Stream S-OO12 (ROW)

Giles County



Photo Type: LB Location, Orientation, Photographer Initials: Standing on LB looking at RB south of pipe centerline looking NE, ES



Photo Type: RB Location, Orientation, Photographer Initials: Standing on RB looking at LB south of pipe centerline looking SW, ES

DEQ Permit #21-0416

Stream S-OO12 (ROW)

Giles County



Photo Type: DS COND Location, Orientation, Photographer Initials: Downstream conditions outside of ROW looking NW, ES

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West Virginia Stream and Wetland Valuation Metric (SWVM) Version 2.1, September 2017

USACE FILE NO./ Project Name: (v2.1, Sept 2015)		Mountain Valley Pipeline			IMPACT COORDINATES: L (in Decimal Degrees)		Lat.	37.318956	Lon.	-80.440648	WEATHER:		Sunny	DATE:	August	10, 2021
IMPACT STREAM/SITE ID (watershed size (acreage), u	AND SITE DE	SCRIPTION: ments)		S-0	012			MITIGATION STREAM CLASS (watershed size (acreag	s./SITE ID AND S (e), unaltered or impair	ITE DESCRIPTIO	N:			Comments:		
STREAM IMPACT LENGTH:	25	FORM OF MITIGATIO	F IN:	RESTORATION (Levels I-III)	MIT CC (in Dec	ORDINATES: imal Degrees)	Lat.		Lon.		PRECIPITATION PAST 48 HR	S:		Mitigation Length:		
Column No. 1- Impact Existing	Condition (Deb	pit)		Column No. 2- Mitigation Existing Co	ondition - Basel	ine (Credit)		Column No. 3- Mitigation Pr Post Completion	Projected at Five Years ion (Credit)		Column No. 4- Mitigation Post Complet	Projected at Ten Ye ion (Credit)	ars	Column No. 5- Mitigation Projecte	ojected at Maturity (Credit)	
Stream Classification:	Ephe	meral		Stream Classification:				Stream Classification:		0	Stream Classification:		0	Stream Classification:	ę	0
Percent Stream Channel Slo	pe	N/A		Percent Stream Channel Slo	pe			Percent Stream Channel S	Slope	0	Percent Stream Chann	el Slope	0	Percent Stream Channel St	оре	0
HGM Score (attach da	ta forms):			HGM Score (attach o	ata forms):			HGM Score (attach	h data forms):		HGM Score (atta	ch data forms):		HGM Score (attach da	ita forms):	
		Average				Average				Average			Average			Average
Hydrology Biogeochemical Cycling	0.51 0.2	0.27333333	1	łydrology Biogeochemical Cycling		0		Hydrology Biogeochemical Cycling		0	Hydrology Biogeochemical Cycling		0	Hydrology Biogeochemical Cycling		0
Habitat PART I - Physical, Chemical and I	0.11 Biological Indic	ators	ł	PART I - Physical, Chemical and	Biological Ind	icators		Habitat PART I - Physical, Chemical a	and Biological Ind	licators	PART I - Physical, Chemical	and Biological Indi	cators	PART I - Physical, Chemical and	Biological Indic	cators
	Points Scale Range	Site Score	-		Points Scale Range	Site Score			Points Scale Range	Site Score		Points Scale Range	Site Scare		Points Scale Range	Site Score
PHYSICAL INDICATOR (Applies to all streams	classifications)		,	PHYSICAL INDICATOR (Applies to all streams of	lassifications)			PHYSICAL INDICATOR (Applies to all stream	ns classifications)		PHYSICAL INDICATOR (Applies to all st	reams classifications)		PHYSICAL INDICATOR (Applies to all streams	classifications)	
USEPA RBP (High Gradient Data Sheet)				JSEPA RBP (Low Gradient Data Sheet)				USEPA RBP (High Gradient Data Sheet)			USEPA RBP (High Gradient Data She	eet)		USEPA RBP (High Gradient Data Sheet)		
1. Epifaunal Substrate/Available Cover	0-20	0		. Epifaunal Substrate/Available Cover	0-20			1. Epifaunal Substrate/Available Cover	0-20		1. Epifaunal Substrate/Available Cover	0-20		1. Epifaunal Substrate/Available Cover	0-20	
3. Velocity/ Depth Regime	0-20	0		Pool Variability	0-20			3. Velocity/ Depth Regime	0-20		3. Velocity/ Depth Regime	0-20		3. Velocity/ Depth Regime	0-20	
4. Sediment Deposition	0-20	0	4	. Sediment Deposition	0-20			4. Sediment Deposition	0-20		4. Sediment Deposition	0-20		4. Sediment Deposition	0-20	
5. Channel Flow Status	0-20 0-1	0	5	Channel Flow Status	0-20 0-1			5. Channel Flow Status	0-20 0-1		5. Channel Flow Status	0-20 0-1		5. Channel Flow Status	0-20 0-1	
6. Channel Alteration	0-20	20		Channel Alteration	0-20			6. Channel Alteration	0-20		6. Channel Alteration	0-20		6. Channel Alteration	0-20	
8 Bank Stability (LB & RB)	0-20	20	4	Bank Stability (LB & RB)	0-20			8 Bank Stability (I.B.& RB)	0.20		8. Bank Stability (LB & RB)	0-20		8 Bank Stability (LB & RB)	0.20	
9 Vegetative Protection (LB & RB)	0.20	20		Vegetative Protection (LB & RB)	0-20			9 Vegetative Protection (I B & BB)	0.20		9 Vegetative Protection (LB & BB)	0-20		9 Venetative Protection (LB & BB)	0.20	
10. Riparian Vegetative Zone Width (LB & RB)	0-20	16	1	0. Riparian Vegetative Zone Width (LB & RB)	0-20			10. Riparian Vegetative Zone Width (LB & RB)	0-20		10. Riparian Vegetative Zone Width (LB & F	RB) 0-20		10. Riparian Vegetative Zone Width (LB & RB)	0-20	
Total RBP Score	Suboptimal	76	1	otal RBP Score	Poor	0		Total RBP Score	Poor	0	Total RBP Score	Poor	0	Total RBP Score	Poor	0
Sub-Total CHEMICAL INDICATOR (Applies to Intermittent	and Perennial St	0.63333333 reams)		Sub-Total CHEMICAL INDICATOR (Applies to Intermittent	and Perennial Str	eams)		Sub-Total CHEMICAL INDICATOR (Applies to Intermitte	ent and Perennial Str	eams)	Sub-Total CHEMICAL INDICATOR (Applies to Inte	rmittent and Perennial S	U Streams)	Sub-Total CHEMICAL INDICATOR (Applies to Intermitter	t and Perennial St	U treams)
WVDEP Water Quality Indicators (General)				VVDEP Water Quality Indicators (General)				WVDEP Water Quality Indicators (General	al)	,	WVDEP Water Quality Indicators (Ge	neral)		WVDEP Water Quality Indicators (General		,
Specific Conductivity				Specific Conductivity				Specific Conductivity			Specific Conductivity	incruity		Specific Conductivity		
100-199 - 85 points	0-90				0-90				0-90			0-90			0-90	
рн 5.6.5.0 = 45 ==inte	0-80		1	M	5-90 0-1			рн	5-90 0-1		рн	5-90 0-1		рн	5-90 0-1	
DO			i i	00				DO			DO			DO		
	10-30				10-30				10-30			10-30			10-30	
Sub-Total			2	Sub-Total		0		Sub-Total		0	Sub-Total		0	Sub-Total		0
BIOLOGICAL INDICATOR (Applies to Intermitte	ent and Perennial	Streams)		SIOLOGICAL INDICATOR (Applies to Intermitte	nt and Perennial 3	streams)		BIOLOGICAL INDICATOR (Applies to Interr	mittent and Perenni	al Streams)	BIOLOGICAL INDICATOR (Applies to	ntermittent and Pereni	nial Streams)	BIOLOGICAL INDICATOR (Applies to Interm	Itent and Perenni	ual Streams)
WV Stream Condition Index (WVSCI)	0.400			VV Stream Condition Index (WVSCI)	0.400 0.4			WV Stream Condition Index (WVSCI)	0.400 0.4		WV Stream Condition Index (WVSCI)	0.000		WV Stream Condition Index (WVSCI)	0.400 0.4	
0 Sub-Total	2 100 0-1	0		Sub-Total	2 100 041	0		Sub-Total	0-100 0-1	0	Sub-Total	0-100 0-1	0	Sub-Total	2.100 0-1	0
Sub-rotai		0	Ŀ	uus i olai		U U		Sub-rotai		Ŭ	300-1018			Sub-Total		v
PART II - Index and Ur	nit Score			PART II - Index and I	Jnit Score			PART II - Index an	d Unit Score		PART II - Index a	Ind Unit Score		PART II - Index and U	nit Score	
Index	Linear Feet	Unit Score		Index	Linear Feet	Unit Score		Index	Linear Feet	Unit Score	Index	Linear Feet	Unit Score	Index	Linear Feet	Unit Score
0.495	25	12.375		0	0	0		0	0	0	0	0	0	0	0	0

FCI Calculator for the High-Gradient Headwater Streams in Appalachia

To ensure accurate calculations, the <u>UPPERMOST STRATUM</u> of the plant community is determined based on the calculated value for V_{CCANOPY} (≥20% cover is required for tree/sapling strata). Go to the SAR Data Entry tab and enter site characteristics and data in the yellow cells. For information on determining how to split a project into SARs, see Chapter 5 of the Operational Draft Regional Guidebook for the Functional Assessment of High-Gradient Headwater Streams and Low-Gradient Perennial Streams in Appalachia (Environmental Laboratory U.S. Army Corps of Engineers 2017).

 Project Name: Mount Valley Pipeline

 Location: Giles County

 Sampling Date: 8/10/2021

 Project Site

 Before Project

 Subclass for this SAR:

 Ephemeral Stream

 Uppermost stratum present at this SAR:

 SAR number:

 S-0012

Shrub/Herb Strata

Functional Results Summary:

Enter Results in Section A of the Mitigation Sufficiency Calculator

Function	Functional Capacity Index
Hydrology	0.51
Biogeochemical Cycling	0.20
Habitat	0.11

Variable Measure and Subindex Summary:

Variable	Name	Average Measure	Subindex
V _{CCANOPY}	Percent canpoy over channel.	Not Used, <20%	Not Used
V _{EMBED}	Average embeddedness of channel.	1.00	0.10
V _{SUBSTRATE}	Median stream channel substrate particle size.	0.08	0.04
V _{BERO}	Total percent of eroded stream channel bank.	0.00	1.00
V _{LWD}	Number of down woody stems per 100 feet of stream.	0.00	0.00
V _{TDBH}	Average dbh of trees.	Not Used	Not Used
V _{SNAG}	Number of snags per 100 feet of stream.	0.00	0.10
V _{SSD}	Number of saplings and shrubs per 100 feet of stream.	100.00	1.00
V _{SRICH}	Riparian vegetation species richness.	0.00	0.00
VDETRITUS	Average percent cover of leaves, sticks, etc.	45.00	0.55
V _{HERB}	Average percent cover of herbaceous vegetation.	62.50	0.83
V _{WLUSE}	Weighted Average of Runoff Score for Catchment.	0.98	1.00

			High-G	Field I	Headwa Data She	ter Strea et and C	ms in Ap alculato	opalachi r	a							
	Team	Anna Oebs	er & Ellvse	Sutliff				- Latitude/LIT	M Northing	37 318956						
Pro	niect Name:	Mount Valle	ev Pineline	ouum				ongitude/U	TM Fasting:	-80 440648	3					
	Location:	Giles Coun	tv				-	San	noling Date:	8/10/2021	,					
64	R Number	S-0012	Reach	Length (ft).	30	Stream T	/ne: -		,		_					
34	Top Strata	S-0012	rub/Herb Sti	rata	(determine	d from perce	ent calculate	emeral Stream	ו אר		_					
Site	and Timina:	Project Site			(-	Before Proie	ect CCANO	- 17		-					
ample	Variables	1-4 in strea	m channel				,-									
1	V _{CCANOPY}	Average pe equidistant 20%, enter	Average percent cover over channel by tree and sapling canopy. Measure at no fewer than 10 roughly equidistant points along the stream. Measure only if tree/sapling cover is at least 20%. (If less than 20%, enter at least one value between 0 and 19 to trigger Top Strata choice.) sent cover measurements at each point below:													
1	0			no at oaon p]					
2	V _{EMBED}	Average er along the s surface and to the follow of 1. If the	nbeddednes tream. Sele d area surro ving table. I bed is comp	is of the stre oct a particle unding the p f the bed is posed of bec	am channe from the be particle that i an artificial drock, use a	 Measure Before n s covered b surface, or c rating score 	at no fewer noving it, de y fine sedim composed of e of 5.	than 30 roug termine the nent, and en f fine sedim	ghly equidis percentage ter the rating ents, use a i	tant points of the g according rating score	1.0					
		Embedded Minshall 19	ness rating 1 183)	for gravel, c	obble and b	oulder partic	les (rescale	d from Platt	s, Megahan	, and	Measure at least					
		Rating	Rating Des	of surface a	overed arm	ounded cr	buried by fin	a sadimant	(or bedraal	·)	su pointe					
		5 4	<5 percent 5 to 25 per	cent of surface of	ice covered	surrounded	or buried by III	by fine sedir	(or bedrock	.)						
		3	26 to 50 pe	rcent of sur	face covered	d, surrounde	ed, or buried	by fine sed	iment		1					
		2	51 to 75 pe	rcent of sur	face covered	d, surrounde	ed, or buried	by fine sed	iment							
		1	>75 percen	t of surface	covered, su	rrounded, o	r buried by f	ine sedimer	nt (or artificia	al surface)]					
1	List the rati	ngs at each	point below	:							1					
	1	1	1													
	1	1	1													
	1	1	1													
	1	1	1													
_	1	1	1					00								
	Enter partic or concrete 0.08	cle size in in as 0.0 in, s 0.08	ches to the and or finer 0.08	nearest 0.1 particles as	inch at each 0.08 in):	point below	/ (bedrock s	hould be co	unted as 99	in, asphalt]					
	0.08	0.08	0.08													
	0.08	0.08	0.08													
	0.08	0.08	0.08													
	0.08	0.08	0.08													
4	V _{BERO}	Total perce side and th may be up	nt of erodeo e total perce to 200%.	l stream cha entage will b	annel bank. e calculateo	Enter the to I If both bar	tal number hks are eroo	of feet of ero ded, total ero	oded bank o osion for the	n each stream	0 %					
			Left Bank:	0	ft		Right Bank:	0	ft							
ample	Variables	5-9 within t	he entire ri	parian/buff	er zone adj	acent to the	e stream ch	annel (25 f	eet from ea	ch bank).						
5	V _{LWD}	Number of stream read per 100 fee	down wood ch. Enter th et of stream	y stems (at l e number fr will be calcu	east 4 inche om the entir lated. Number of	es in diamete e 50'-wide b f downed wo	er and 36 in ouffer and wi	ches in leng ithin the cha	th) per 100 nnel, and th 0	feet of le amount	0.0					
6	V _{TDBH}	Average db	h of trees (r	neasure onl	y if V _{CCANOP}	_y tree/saplin	g cover is a	t least 20%)	. Trees are	at least 4						
		inches (10 List the dbh the stream	cm) in diam n measurem below:	eter. Enter	tree DBHs in vidual trees (n inches. (at least 4 in) within the	buffer on ea	ch side of		Not Used					
			Left Side					Right Side								
											1					
											4					
											4					
											4					
											4					
7		Name				100 (of sta	Fatas 1								
1	V _{SNAG}	Number of	snags (at le	ast 4" dbh a	nd 36" tall)	per 100 feet	of stream.	Enter numb	er of snags	on each	0.0					
		อเนย บ เ เทย	suediii, and	ule amount		a will be cal	culated.				0.0					
			Left Side:		0		Right Side:		0							
8	V _{SSD}	Number of	saplings an	d shrubs (w	oody stems	up to 4 inch	es dbh) per	100 feet of	stream (mea	asure only if						
		tree cover i per 100 ft c	s <20%). E	nter number I be calculat	of saplings ed.	and shrubs	on each sid	le of the stre	eam, and the	e amount	100.0					
			Left Side:	2	1		Right Side:		9							

9	V _{SRICH}	Group 1 in	the tallest st	ratum. Check all exotic	and invas	ive species pi	resent in a	ll strata. Sp	ecies	0.00		
		richness pe	r 100 feet a	nd the subindex will be	calculated	from these da	ata. Grou	2 (-1 0)				
	Acer rubru	m	p I – 1.0	Magnolia tripetala		Ailanthus al	tissima	52 (-1.0)	Lonicera iai	onica		
_	Acer sacch	narum		Nvssa svlvatica		Albizia iulib	rissin		Lonicera tai	arica		
-	Aesculus fi	ava		Oxvdendrum arboreum		Alliaria peti	olata		Lotus corni	ulatus		
	Asimina tri	loba		Prunus serotina		Altornontho	r0		Lvthrum salicaria			
_	Betula allec	haniensis		Quercus alba		philoxeroide		Microstegium vimineum				
_	Betula lent	2		Quercus coccinea		' Δster tatariu			Paulownia t	omentosa		
_	Carva alba	a		Quercus imbricaria		Corastium t	ontanum		Polygonum g	uspidatum		
-	Carvo alob	-				Coronillo ve	oria		Puororio m	ntono		
	Carva giab	ia ie		Quercus prinus			1718 		Puerana mu	oriaria		
	Carya Ovai	IS		Quercus rubra		Elaeagnus ul	nbellata		Rosa muilin	ora ,		
	Carya ovat	a .,		Quercus veiutina		Lespedeza	DICOIOF		Sorgnum na	iepense		
_	Cornus floi	ida		Sassafras albidum		Lespedeza	cuneata		Verbena bra	asiliensis		
_	Fagus grar	ndifolia		l ilia americana		Ligustrum ob	tusifolium					
	Fraxinus a	mericana		Tsuga canadensis		Ligustrum s	inense					
	Liriodendror	tulipifera		Ulmus americana								
	Magnolia a	cuminata										
		0	Species in	Group 1			1	Species in	Group 2			
ample	Variables	10-11 withi	n at least 8	subplots (40" x 40", o	r 1m x 1m) in the ripari	an/buffer	zone withi	n 25 feet fron	each		
nk. 1	he four su	bplots shou	ld be place	d roughly equidistant	ly along e	ach side of t	he stream		23 1661 1101	reach		
10	VDETRITUS	Average pe	rcent cover	of leaves, sticks, or othe	er organic e detrital la	material. Wo	ody debris ubplot	<4" diamet	er and <36"	45.00 %		
				Side		Right	Side		י ר			
		75	LOIT		25	Right	Olde					
		30			50				-			
11	V _{HERB}	Average pe	rcentage co	over of herbaceous vege	tation (me	asure only if t	ree cover	is <20%). [Do not			
		include woo	ody stems a	t least 4" dbh and 36" ta	II. Because	e there may b	e several	ayers of gro	ound cover	63 %		
		each subple	ot.	s up tillougil 200 % ale a	iccepted.	Enter the pert	Leni Cover	oi giounu v	eyelalion al			
			Left	Side		Riaht	Side		יר			
						5	0.40					
		50			85	Jan	oluo					
ample 12	e Variable 1 V _{WLUSE}	50 40 2 within the Weighted A	e entire cato	chment of the stream.	85 75 ed:					0.98		
ample 12	e Variable 1 V _{WLUSE}	50 40 2 within the Weighted A	e entire cato verage of R	chment of the stream.	85 75 ed:			Runoff	% in Catch-	0.98 Running		
ample 12	e Variable 1 V _{WLUSE}	50 40 2 within the Weighted A	e entire cato verage of R Land	chment of the stream. Lunoff Score for watersh Use (Choose From Dro	85 75 ed: p List)			Runoff Score	% in Catch- ment	0.98 Running Percent (not >100)		
ample 12	Variable 1	50 40 2 within the Weighted A	e entire cato verage of R Land	chment of the stream. Lunoff Score for watersh Use (Choose From Dro cover)	85 75 ed: p List)			Runoff Score , 0.5	% in Catch- ment	0.98 Running Percent (not >100) 5		
ample 12	Variable 1 VwLuse Forest and r	50 40 2 within the Weighted A native range (-	e entire cato verage of R Land ×50% ground	chment of the stream. Lunoff Score for watersh Use (Choose From Dro cover) cover)	85 75 ed: p List)			Runoff Score 0.5	% in Catch- ment 5 95	0.98 Running Percent (not >100) 5 100		
ample 12	Variable 1 VwLuse Forest and r Forest and r	50 40 2 within the Weighted A native range (-	e entire cato verage of R Land 50% ground	chment of the stream. unoff Score for watersh Use (Choose From Dro cover) cover)	85 75 ed: p List)			Runoff Score 0.5	% in Catch- ment 5 95	0.98 Running Percent (not >100) 5 100		
ample 12	Forest and r	50 40 2 within the Weighted A native range (-	e entire cato verage of R Land 50% ground	chment of the stream. Lunoff Score for watersh Use (Choose From Dro cover) cover)	85 75 ed: p List)			Runoff Score	% in Catch- ment 5 95	0.98 Running Percent (not >100) 5 100		
amplı 12	• Variable 1 VwLuse Forest and r	50 40 2 within the Weighted A native range (-	e entire cate verage of R Land 50% ground	chment of the stream. tunoff Score for watersh Use (Choose From Dro cover) cover)	ed: p List)			Runoff Score	% in Catch- ment 5 95	0.98 Running Percent (not >100) 5 100		
ample 12	• Variable 1 VwLuse Forest and r	50 40 2 within the Weighted A native range (-	e entire cato verage of R Land 50% ground -75% ground	Chment of the stream. Trunoff Score for watersh Use (Choose From Drop cover) cover)	ed: p List)			Runoff Score 0.5	% in Catch- ment 5 95	0.98 Running Percent (not >100) 5 100		
ample 12	Forest and r	50 40 2 within the Weighted A native range (-	e entire cato verage of R Land <50% ground -75% ground	chment of the stream. tunoff Score for watersh Use (Choose From Dro cover) cover)	ed: p List)			Runoff Score 0.5 1	% in Catchment 5 95	0.98 Running Percent 5 100		
impli 12	Forest and r	50 40 2 within the Weighted A native range (-	e entire cate verage of R Land <50% ground	chment of the stream. Tunoff Score for watersh Use (Choose From Drop cover) cover)	85 75 ed: p List)			Runoff Score 0.5	% in Catch- ment 5 95	0.98 Running Percent (not >100 5 100		
mpl(Forest and r	50 40 2 within the Weighted A native range (-	e entire cate verage of R Land <50% ground	chment of the stream. Tunoff Score for watersh Use (Choose From Dro cover) cover)	85 75 ed: p List)			Runoff Score 0.5	% in Catch- ment 5 95	0.98 Running Percent (not >100 5 100		
mpl(Forest and r	50 40 2 within the Weighted A native range (-	e entire cate verage of R Land :50% ground	chment of the stream. tunoff Score for watersh Use (Choose From Dro cover) cover)	85 75 ed: p List)			Runoff Score 0.5	% in Catch- ment 5 95	0.98 Running Percent (not >100 5 100		
mpl(e Variable 1 V _{WLUSE} Forest and r Forest and r	50 40 2 within the Weighted A native range (- native range (:	e entire cate verage of R Land :50% ground	chment of the stream. tunoff Score for watersh Use (Choose From Dro cover) cover)	85 75 ed: p List)	Not	es:	Runoff Score 0.5	% in Catch- ment 5 95	0.98 Running Percent (not >100 5 100		
v	e Variable 1 V _{WLUSE} Forest and r Forest and r	50 40 2 within the Weighted A native range (- native range (: -0012 Value	e entire cate verage of R Land •50% ground •75% ground	chment of the stream. tunoff Score for watersh Use (Choose From Dro cover) cover)	85 75 ed: p List) was com	Not pleted using	es: 1 the 2019	Runoff Score 0.5 1	% in Catch- ment 5 95	0.98 Running Percent (not >100 5 100		
	E Variable 1 VwLuse Forest and r Forest and r Sariable	50 40 2 within the Weighted A native range (- native range (: -OO12 Value Not Used,	e entire cate verage of R Land -75% ground -75% ground VSI VSI	chment of the stream. tunoff Score for watersh Use (Choose From Dro cover) cover) cover) Land Cover Analysis (NLCD), from Landszi	85 75 ed: p List) Was com at satellite	Not pleted using imagery an	es: the 2011 d other s	Runoff Score 0.5 1	% in Catch- ment 5 95 95 Land Cover ary datasets	0.98 Running Percent (not >100) 5 100		
	E Variable 1 VwLuse Forest and r Forest and r an	50 40 2 within the Weighted A native range (- native range (: -OO12 Value Not Used, <20%	e entire cate verage of R Land :50% ground :75% ground :75% ground VSI Not Used	Land Cover Analysis (NLCD), from Landsz Watershed boundariu	85 75 ed: p List) was com at satellite es are ba: hment va	Not pleted using imagery an sed off of fie lues have be	es: the 2019 d other s ld delinea	Runoff Score 0.5 1 0.5 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	% in Catch- ment 5 95 95 Land Cover ary datasets n impacts. nearest full n	0.98 Running Percent (not >100 5 100 Database		
Va Va V _c	E Variable 1	50 40 2 within the Weighted A native range (- native range (: native range (: Value Not Used, <20% 1.0	e entire cate verage of R Land -75% ground -75% ground VSI Not Used 0.10	Land Cover Analysis (NLCD), from Landsr Watershed boundariu *Percentages in catc	85 75 ed: p List) was com at satellite es are ba: hment va	Not pleted using imagery an sed off of fie lues have be	es: the 2019 d other s ld delinea een round	Runoff Score 0.5 1	% in Catch- ment 5 95 95 Land Cover ary datasets n impacts. nearest full n	0.98 Running Percent (not >100) 5 100 Database		
Vi Vi Vcr Vsr	Variable 1 VwLuse Forest and r Forest and r Forest and r ariable CANOPY WBED UBSTRATE	50 40 2 within the Weighted A native range (- native range (: native range (: Value Not Used, <20% 1.0 0.08 in	e entire cate verage of R Land .50% ground .75% ground	Land Cover Analysis (NLCD), from Landsa Watershed boundariu *Percentages in cato	85 75 ed: p List) was com at satellite es are bas hment va	Not pleted using imagery an sed off of fie lues have be	es: the 2019 d other s ld delinea een round	Runoff Score 0.5 1	% in Catch- ment 5 95 95 Land Cover ary datasets n impacts. nearest full n	0.98 Running Percent (not >100) 5 100 		
Vi Vi Vc Vc Vc Vc	Variable 1 VwLuse Forest and r Forest and r Forest and r ariable CANOPY WBED JBSTRATE FR0	50 40 2 within the Weighted A native range (- native range (: native range (: Value Not Used, <20% 1.0 0.08 in 0 %	verage of R Land <50% ground -75% ground -75% ground Not Used 0.10 0.04 1.00	Choose From Dro Cover) Cover) Cover) Land Cover Analysis (NLCD), from Landsa Watershed boundarie *Percentages in cato	85 75 ed: p List) was com at satellite es are ba: hment va	Not pleted using e imagery an sed off of fie lues have be	es: the 2019 d other s ld delinea sen round	Runoff Score 0.5 1	% in Catchment 5 95 95 Land Cover ary datasets n impacts. nearest full n	0.98 Running Percent (not >100) 5 100 Database		
Vi Vi V _C V _E V _B	Variable 1 VwLuse Forest and r Forest and r Forest and r ariable Canopy WBED JBSTRATE ERO	-OO12 Value Not Used, <20% 1.0 0.08 in 0 %	verage of R Land :50% ground :75% ground :75% ground VSI Not Used 0.10 0.04 1.00	chment of the stream. Tunoff Score for watersh Use (Choose From Dro cover) cover) cover) Land Cover Analysis (NLCD), from Landsa Watershed boundari *Percentages in catc	85 75 ed: p List) was com at satellite es are bas hment va	Not pleted using imagery an sed off of fie lues have be	es: the 2019 d other s ld delinea sen round	Runoff Score 0.5 1	% in Catchment 5 95 95 Land Cover ary datasets n impacts. nearest full n	0.98 Running Percent (not >100) 5 100 Database		
Va Va V _C V _E V _B	Variable 1 VwLuse Forest and r Forest and r Forest and r ariable Canopy WBED JUBSTRATE ERO ND	50 40 2 within the Weighted A native range (- native range (: native range (: Value Not Used, <20% 1.0 0.08 in 0 % 0.0	verage of R Land :50% ground :75% ground :75% ground VSI Not Used 0.10 0.04 1.00 0.00	chment of the stream. Tunoff Score for watersh Use (Choose From Dro cover) cover) cover) Land Cover Analysis (NLCD), from Landsa Watershed boundari *Percentages in cato	85 75 ed: p List) was com at satellite es are bas hment va	Not pleted using e imagery an sed off of fie lues have be	es: the 2019 d other s ld delinea sen round	Runoff Score 0.5 1	% in Catchment 5 95 95 Land Cover ary datasets n impacts. nearest full n	0.98 Running Percent (not >100) 5 100 Database		
Va Va V _G V _B V _L V _L	Variable 1 VwLuse Forest and r Forest and r Forest and r ariable Canopy WBED JUBSTRATE ERO WD DBH	50 40 2 within the Weighted A native range (- native range (: native range (: Native range (: Nat Used, <20% 1.0 0.08 in 0 % 0.0 Not Used	verage of R Land :50% ground :75% ground :75% ground :75% ground :75% ground :0.0% 0.10 0.04 1.00 0.00 Not Used	chment of the stream. Tunoff Score for watersh Use (Choose From Dro cover) cover) cover) Land Cover Analysis (NLCD), from Landsa Watershed boundari *Percentages in catc	85 75 ed: p List) was com at satellite es are bas hment va	Not pleted using timagery an sed off of fie lues have be	es: the 2019 d other s ld delinea sen round	Runoff Score 0.5 1	% in Catchment 5 95 95 Land Cover ary datasets n impacts. nearest full n	0.98 Running Percent (not >100 5 100 Database umber.		
Vi 12 Vi Vci Vsi Vsi Vsi Vsi Vsi	e Variable 1 VwLuse Forest and r Forest and r Forest and r ariable CANOPY WBED UBSTRATE ERO ND DBH NAG	50 40 2 within the Weighted A native range (- native range (: native range (: Nat Used, <20% 1.0 0.08 in 0 % 0.0 Not Used 0.0	verage of R Land :50% ground :75% ground :75% ground :75% ground :75% ground :0.10 0.04 1.00 0.00 Not Used 0.10	chment of the stream. Tunoff Score for watersh Use (Choose From Dro cover) cover) cover) Land Cover Analysis (NLCD), from Landsa Watershed boundari *Percentages in cato	85 75 ed: p List) was com at satellite es are ba: hment va	Not pleted using e imagery an sed off of fie lues have be	es: the 2019 d other s ld delinea	Runoff Score 0.5 1	% in Catchment 5 95 95 Land Cover ary datasets n impacts. nearest full n	0.98 Running Percent (not >100 5 100 Database		
Vi 12 Vi Vcr Vsr Vsr Vsr Vsr Vsr Vsr	e Variable 1 VwLuse Forest and r Forest and r Forest and r ariable CANOPY WBED UBSTRATE ERO ND DBH NAG	50 40 2 within the Weighted A native range (- native range (-))))))))))))))))))))))))))))))))))))	verage of R Land :50% ground :75% ground :75% ground :75% ground :75% ground :0.10 0.04 1.00 0.00 Not Used 0.10	chment of the stream. Tunoff Score for watersh Use (Choose From Dro cover) cover) cover) Land Cover Analysis (NLCD), from Landsa Watershed boundari *Percentages in cato	85 75 ed: p List) was com at satellite es are bas hment va	Not pleted using e imagery an sed off of fie lues have be	es: the 2019 d other s ld delinea sen round	Runoff Score 0.5 1	% in Catchment 5 95 95 Land Cover ary datasets n impacts. nearest full n	0.98 Running Percent (not >100 5 100 Database		
Vi 12 Vi Vcr Vsr Vsr Vsr Vsr Vsr Vsr Vsr	e Variable 1 VwLuse Forest and r Forest and r Forest and r ariable CANOPY WBED UBSTRATE ERO ND DBH NAG SD	50 40 2 within the Weighted A native range (native range (native range (20012 Value Not Used, <20% 1.0 0.08 in 0 % 0.0 Not Used 0.0 100.0	verage of R Land :50% ground :75% ground :75% ground :75% ground :0.10 0.04 1.00 0.00 Not Used 0.10 1.00	chment of the stream. Tunoff Score for watersh Use (Choose From Dro cover) cover) cover) Land Cover Analysis (NLCD), from Landsa Watershed boundari *Percentages in cato	85 75 ed: p List) was com at satellite es are bas hment va	Not pleted using e imagery an sed off of fie lues have be	es: the 2019 d other s ld delinea sen round	Runoff Score 0.5 1	% in Catchment 5 95 95 Land Cover ary datasets n impacts. nearest full n	0.98 Running Percent (not >100) 5 100 Database		
ampli 12 ν: ν _{cr} ν _{sr} ν _{sr} ν _{sr} ν _{sr} ν _{sr}	e Variable 1 VwLuse Forest and r Forest and r Forest and r ariable CANOPY WBED UBSTRATE ERO ND DBH NAG SD RICH	50 40 2 within the Weighted A native range (- native	entire cate verage of R Land :50% ground :75% ground VSI Not Used 0.10 0.04 1.00 0.10 1.00 0.00	chment of the stream. Tunoff Score for watersh Use (Choose From Dro cover) cover) cover) Land Cover Analysis (NLCD), from Landsa Watershed boundari *Percentages in cato	85 75 ed: p List) was com at satellite es are bas hment va	Not pleted using e imagery an sed off of fie lues have be	es: the 2019 d other s ld delinea	Runoff Score 0.5 1	% in Catchment 5 95 95 Land Cover ary datasets n impacts. nearest full n	0.98 Running Percent (not >100) 5 100 Database		
T2 12 V: Vcr Vsr Vsr Vsr Vsr Vsr Vsr Vsr Vsr Vsr Vs	Variable 1 VwLuse Forest and r Forest and r Forest and r Sariable CANOPY WBED UBSTRATE ERO VD DBH NAG SD RICH ETRITUS	50 40 2 within the Weighted A native range (- native	entire cate verage of R Land :50% ground :75% ground VSI Not Used 0.10 0.04 1.00 0.10 1.00 0.10 1.00 0.10 1.00 0.00 0.55	chment of the stream. Tunoff Score for watersh Use (Choose From Dro cover) cover) cover) Land Cover Analysis (NLCD), from Landsa Watershed boundari *Percentages in cato	85 75 ed: p List) was com at satellite es are ba hment va	Not pleted using e imagery an sed off of fie lues have be	es: the 2019 d other s ld delinea	Runoff Score 0.5 1	% in Catchment 5 95 95 Land Cover ary datasets n impacts. nearest full n	0.98 Running Percent (not >100) 5 100 Database		
T2 12 Vition Vit	e Variable 1 VwLuse Forest and r Forest and r Forest and r Forest and r Canopy WBED UBSTRATE ERO WD DBH VAG SD RICH ETRITUS ERB	50 40 2 within the Weighted A native range (native range (native range (20012 Value Not Used, <20% 1.0 0.08 in 0 % 0.0 Not Used 0.0 Not Used 0.0 Not Used 0.0 100.0 0.00 45.0 % 63 %	entire cate verage of R Land :50% ground :75% ground :75% ground 0.10 0.04 1.00 0.10 1.00 0.10 0.10 0.00 Not Used 0.10 0.00 0.55 0.83	chment of the stream. Tunoff Score for watersh Use (Choose From Dro cover) cover) cover) Land Cover Analysis (NLCD), from Landsa Watershed boundari *Percentages in cato	85 75 ed: p List) was com at satellite es are bas hment va	Not pleted using e imagery an sed off of fie lues have be	es: the 2019 d other s ld delinea sen round	Runoff Score 0.5 1	% in Catchment 5 95 95 Land Cover ary datasets nimpacts. hearest full n	0.98 Running Percent (not >100) 5 100 Database		

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET (FRONT)

STREAM NAME S-0012		LOCATION Giles County							
STATION # R	IVERMILE	STREAM CLASS Ephemeral							
LAT 37.318956 LO	ONG80.440648	RIVER BASIN Middle New							
STORET #		AGENCY							
INVESTIGATORS Anna C	Dehser, Ellyse Sutfliff	•							
FORM COMPLETED BY	AO, ES	DATE 8/10/21 TIME 12:00 PM	REASON FOR SURVEY Baseline Assessment						
WEATHER	Now	Past 24	Has there been a heavy rain in the last 7 days?						
	10 % ✓ %ci	(heavy rain) (steady rain) s (intermittent) loud cover 7 10 %	Air Temperature ^{28.89} ⁰ C						
SITE LOCATION/MAP	Draw a map of the sit	e and indicate the areas sample	d (or attach a photograph)						
	i Crino)	Tinbermat	Stream on						
	Right	- down st	ream Left						
STREAM CHARACTERIZATION	Stream Subsystem	ermittent Tidal	Stream Type Coldwater Warmwater Catchment Area 0.14 km ²						

PHYSICAL CHARACTERIZATION/WATER QUALITY FIELD DATA SHEET (BACK)

WATERSHED FEATURES RIPARIAN VEGETATION (18 meter buffer)	Predominant Surrounding Landuse Forest Commercial Field/Pasture Industrial Agricultural Other Residential Strubs Indicate the dominant type and record the domin Trees Shrubs Dominant species present Wingstem	Local Watershed NPS Pollution ☑ No evidence □ Some potential sources □ Obvious sources Local Watershed Erosion ☑ None □ Moderate □ Heavy tant species present □ Grasses
INSTREAM FEATURES	Estimated Reach Length 9.14 m Estimated Stream Width 0.61 m Sampling Reach Area 5.58 m² Area in km² (m²x1000) km² Estimated Stream Depth NNA m Surface Velocity (at thalweg) NNA m/sec	Canopy Cover □Partly shaded □Shaded Image: Partly open □Partly shaded □Shaded High Water Mark Mage: Partly shaded □Shaded High Water Mark Mage: Partly shaded □Shaded Proportion of Reach Represented by Stream Morphology Types Riffle % Pool % Riffle % Pool % Channelized Yes Dam Present Yes
LARGE WOODY DEBRIS	LWD <u>•</u> m ² Density of LWD <u>•</u> m ² /km ² (LWD/ read	harea) None observed
AQUATIC VEGETATION	Indicate the dominant type and record the domin Rooted emergent Rooted submergent Floating Algae Attached Algae Dominant species present None observed Portion of the reach with aquatic vegetation	hant species present Rooted floating Free floating
WATER QUALITY ***No water quality data collected due to dry streambed.	Temperature_NA 0 C Specific Conductance_NA Dissolved Oxygen _NA pH _NA Turbidity _NA WQ Instrument Used _NA	Water Odors Normal/None Sewage Petroleum Chemical Fishy Other NA Water Surface Oils Slick Slick Sheen Globs None Other NA Turbidity (if not measured) Turbid Clear Slightly turbid Turbid Opaque Stained Other NA
SEDIMENT/ SUBSTRATE	Odors Petroleum ∠Normal Anaerobic Chemical Anaerobic Other Oils ∠ Absent Slight	Deposits □Sludge □Sawdust □Paper fiber □Sand □Relict shells □Other NA □Lpoking at stones which are not deeply embedded, are the undersides black in color? □Yes ☑ No

INC	ORGANIC SUBSTRATE (should add up to 1	COMPONENTS 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	20.04					
Boulder	> 256 mm (10")			materiais (CrOWI)	20 70					
Cobble	64-256 mm (2.5"-10")		Muck-Mud	black, very fine organic	0					
Gravel	2-64 mm (0.1"-2.5")				U					
Sand	0.06-2mm (gritty)	5%	Marl	grey, shell fragments	0					
Silt	0.004-0.06 mm	90%]		0					
Clay	< 0.004 mm (slick)	5%								

Notes: No water present

BENTHIC MACROINVERTEBRATE FIELD DATA SHEET

STREAM NAME S-O	012	LOCATION Giles							
STATION # 11452+15	_ RIVERMILE	STREAM CLASS Ephemeral							
LAT <u>37.318956</u>	LONG80.440648	RIVER BASIN Middle New							
STORET #		AGENCY							
INVESTIGATORS AC	D&ES		LOT NUMBER						
FORM COMPLETED	^{BY} ES	DATE 8/10/21 TIME 1230 PM	REASON FOR SURVEY Baseline Assessment						
HABITAT TYPES	Indicate the percentage of Cobble% Sn	reach habitat type present ags% ✓ Vegetated Ba % ☐ Other (anks_100%Sand%						
SAMPLE COLLECTION	Gear used D-frame How were the samples coll Indicate the number of jat Cobble DSn Submerged Macrophytes	kick-net Other	rom bank						
GENERAL COMMENTS	No sample collec Stream identified	ted due to absence as a dry swale.	of stream flow and habitat.						

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						

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

STREAM NAME S-OO12	LOCATION Giles	
STATION # RIVERMILE	STREAM CLASS Ephemeral	
LAT <u>37.318956</u> LONG <u>-80.440648</u>	RIVER BASIN Middle New	
STORET #	AGENCY	
INVESTIGATORS Anna Oehser, Ellyse Sutfliff		
FORM COMPLETED BY AO, ES	DATE 8/10/21 TIME 12:00 PM AM PM	REASON FOR SURVEY Baseline Assessment

	Habitat	Condition Category									
	Parameter	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 0	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0						
n sampling reach	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.						
ted i	score 0	20 19 18 17 16	5 4 3 2 1 0								
eters to be evalua	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).						
aram	_{score} 0	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0						
Ps	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 0	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 U	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0						

Notes: No water present

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

	Habitat	Condition Category								
	Parameter	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	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0					
ing reach	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.					
amp	score 0	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0					
valuated broader than s	8. Bank Stability (score each bank) Note: determine left or right side by facing deurostraam.	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.					
be (SCORE 10	Leπ Bank 10 9	8 / 6	5 4 3	2 1 0					
Parameters to	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 10	Left Bank 10 9	8 7 6	5 4 3	2 1 0					
	SCORE 10	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 9	Left Bank 10 9	8 7 6	5 4 3	2 1 0					
	SCORE /)	Right Bank 10 9	8 7 6	5 4 3	2 1 0					

Total Score _____ Notes: No water present

WOLMAN PEBBLE COUNT FORM

Basin:

County:Montgomery CountyStream Name:UNT to Sinking CreekHUC Code:02080201Survey Date:8/10/2021Surveyors:AO, ESType:Representative

Stream ID: S-OO12

No cobbles or coarse material in stream reach

PEBBLE COUNT									
Inches	PARTICLE	Millimeters		Particle Count	Total #	Item %	% Cum		
	Silt/Clay	< .062	S/C	▲ ▼	100	100.00	100.00		
	Very Fine	.062125		▲ ▼	0	0.00	100.00		
	Fine	.12525		▲ ▼	0	0.00	100.00		
	Medium	.255	S A N D	▲ ▼	0	0.00	100.00		
	Coarse	.50-1.0		▲ ▼	0	0.00	100.00		
.0408	Very Coarse	1.0-2		▲ ▼	0	0.00	100.00		
.0816	Very Fine	2 -4		▲ ▼	0	0.00	100.00		
.1622	Fine	4 -5.7		▲ ▼	0	0.00	100.00		
.2231	Fine	5.7 - 8	G R A V E L	▲ ▼	0	0.00	100.00		
.3144	Medium	8 -11.3		▲ ▼	0	0.00	100.00		
.4463	Medium	11.3 - 16		▲ ▼	0	0.00	100.00		
.6389	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		▲ ▼	0	0.00	100.00		
3.5 - 5.0	Small	90 - 128	CODDLE	▲ ▼	0	0.00	100.00		
5.0 - 7.1	Large	128 - 180	COBBLE	▲ ▼	0	0.00	100.00		
7.1 - 10.1	Large	180 - 256		▲ ▼	0	0.00	100.00		
10.1 - 14.3	Small	256 - 362		▲ ▼	0	0.00	100.00		
14.3 - 20	Small	362 - 512		▲ ▼	0	0.00	100.00		
20 - 40	Medium	512 - 1024	BOULDER	▲ ▼	0	0.00	100.00		
40 - 80	Large	1024 -2048		▲ ▼	0	0.00	100.00		
80 - 160	Vry Large	2048 -4096	1	▲ ▼	0	0.00	100.00		
	Bedrock		BDRK	▲ ▼	0	0.00	100.00		
				Totals:	100				
	Total Tally:		•						

River Name: Reach Name: Sample Name: Survey Date:	UNT t S-001 Repre 08/10	co Sinking L2 esentative 0/2021	Creek	
Size (mm)		тот #	ITEM %	CUM %
0 - 0.062 0.062 - 0.125 0.125 - 0.25 0.25 - 0.50 0.50 - 1.0 1.0 - 2.0 2.0 - 4.0 4.0 - 5.7 5.7 - 8.0 8.0 - 11.3 11.3 - 16.0 16.0 - 22.6 22.6 - 32.0 32 - 45 45 - 64 64 - 90 90 - 128 128 - 180 180 - 256 256 - 362 362 - 512 512 - 1024 1024 - 2048 Bedrock		100 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	$100.00 \\ 0.00 $	$ \begin{array}{c} 100.00\\ 100.00 \\ 100.00\\ 100.00 \\$
D16 (mm) D35 (mm) D50 (mm) D84 (mm) D95 (mm) D100 (mm) Silt/Clay (%) Sand (%) Gravel (%) Gravel (%) Boulder (%) Bedrock (%)		0.01 0.02 0.03 0.05 0.06 0.06 100 0 0 0 0		

Total Particles = 100.

				For us	e in ephemeral s	treams				
Project #	Pro	oject Name	•	Locality	Cowardin Class.	HUC	Date	SAR #	Impact Length	Impact Factor
22865.06	Mountain Vall Valley	ey Pipeline Pipeline, L	e (Mountain _LC)	Giles County	R6	05050002	8/10/21	S-0012	25	1
Nam	e(s) of Evaluator	r(s)	Stream Nam	e and Informa	ation				SAR Length	
	ES/AO		UNT to Sinki	ng Creek					2	5
. RIPARIAI	N BUFFERS: Ass	ess both bank	's 100 foot riparia	n areas along the	entire SAR. (rou	gh measurements	of length & width	may be acceptab	le)	
			Con	ditional Cate	gory				NOTES>>	
	Optima	al	Subo	ptimal	Mar	ginal	Po	oor		
Riparian Buffers	Tree stratum (dbh > 3 i with > 60% tree canop non-maintained unders areas.	nches) present, y cover and an tory. Wetlands	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.	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			High	LOW	High	LOW	High	LOW		
Scores	1.5		1.2	1.1	0.85	0.75	0.6	0.5		
Delineate ripa Determine so low. Enter the % I	arian areas along each quare footage for each Riparian Area and Scc	n stream bank by measuring pre for each rip	into Condition Ca or estimating lenge parian category in	tegories and Con gth and width. Ca the blocks below.	dition Scores usin alculators are prov	g the descriptors. ided for you	Ensure of % F Blocks e	the sums Riparian Iqual 100		
Right Bank	% Riparian Area>	60%	40%					100%		
	Score >	0.85	0.75							
	1								CI= (Sum % RA * S	cores*0.01)/2
Left Bank	% Riparian Area>	80%	20%					100%	Rt Bank Cl >	0.81
	Score >	0.85	0.75						Lt Bank CI >	0.83
		REACH C	ONDITION I	NDEX and S	TREAM CO	NDITION UN	ITS FOR TH	IS REACH		
OTE: The Cls and	RCI should be rounded to	2 decimal places	The CR should be ro	unded to a whole num	nber.			THE REACH C)EX (RCI) >:
							L			
								R) = (Riparian CI)/2
									CI= (Riparian CI)/2 ENT (CR) >

INSERT PHOTOS:

(WSSI Photo Location "L:\22000s\22800\22865.06\Admin\05-ENVR\Field Data\Spread G\Field Forms\S-OO12\Photos\S-OO12_US COND DS.JPG")



Looking downstream within the ROW. Assessment is limited to areas within the temporary ROW.

PROVIDED UNDER SEPARATE COVER