CLIENT MVP LAT 37.181385 INVESTIGATORS D WATER TYPE TNW RPW		•	/2016 IME	COUNTY Roanoke		
INVESTIGATORS D WATER TYPE	Hadersbeck C Wie	0 DATE 09/27/ man J Niergarth FLOW REG	/2016 IME	COUNTY Roanoke		
WATER TYPE	NRPW [FLOW REG	IME			
	<u> </u>	FLOW REG Perennial	IME			
	Estimate Mea	·	Internit	tent Ephemeral		
		asurements	T	Sinuosity Low 🗸	Medium High	
		Vidth: 10.0 ft leight:	ft	Gradient Flat Moderate ✓ Severe (0.5/100 ft) (2 ft/100 ft) (10 ft/100 ft) Stream Erosion		
1	Water Depth:			NoneModerate	Heavy	
L	Water Width			Artificial, Modified or Chan	nelized	
CHANNEL FEATUR	=S	Water Mark (Width):	7.0 ft	Yes _ <u>✓</u> No)	
		Water Mark (Height)		Within Roadside Ditch		
	Flow Direction	` ,	· "'	Yes _ <u></u>)	
	1 IOW DITCOLLOR		-	Culvert PresentYes	<u>✓</u> No	
				Culvert Material:		
				Culvert Size:in		
FLOW CHARACTERISTICS	Stream bed Standing w Flowing wa	tream bed dry I moist vater		Proportion of Reach Represe Morphology Types (Only enter Riffle 35 % Run 55 Pool 10 % Turbidity ClearSlightly to Other	er if water present) 5 %	
	Slow			_		
	SUBSTRATE CO			ORGANIC SUBSTRATE COM		
,	ould add up to 100			(does not necessarily add u		
Substrate Type	Diameter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area	
Bedrock	_		Detritus	sticks, wood, coarse		
	> 256 mm (10")	15		plant materials (CPOM)	20	
+	256 mm (2.5"-10")	25	Muck-Mud	black, very fine organic		
	64 mm (0.1"-2.5")	40		(FPOM)		
	.06-2mm (gritty)	20	Morl	grov oball fragmant-		
+	0.004-0.06 mm 0.004 mm (slick)		Marl	grey, shell fragments		
WATERSHED FEATURES	Predominant Forest Field/Past Agricultura ROW	Residential Other:	ıl	Floodplain Width Wide > 30ft Narrow <15ft	1 ate 15-30ft	
	Canopy Cove	Partly shade	ed			
				OTHER MC===		
MACROINV	ERTEBRATES/OT	HER WILDLIFE OBS	SERVED OR	OTHER NOTES AND OBSE	RVATIONS	



Photograph Direction ESE

	STREAM ID S-EF33 STREAM NAME U					ME UNT to Bottom Creek			
	CLIENT MVP PROJECT NAME								
LAT 37.17920		ONG -80.140961							
INVESTIGATO	DRS D Ha	dersbeck S Ryan	S Pilcher						
WATER TYPE			FLOW REGI Perennial	i ME Intermi	ittent 🗸	Ephemeral			
CHANNEL FE	ATURES	Water Depth: Water Width: Ordinary High V	dth:9.0 ft eight: RB1.0 ft2.00 in3.0 ft Vater Mark (Width): Vater Mark (Height):	ft	Gradient (0 Stream Erc None Artificial, N Yes Within Roa Yes Culvert Pro	Flat	nelized <u>✓</u> No		
FLOW CHARACTERI	ISTICS	Water Present No water, streStream bed inStanding wateFlowing wate VelocityFastSlow		Proportion of Reach Represented by Stream Morphology Types (Only enter if water present) Riffle 25 % Run 75 % Pool % Turbidity Clear Slightly turbid Turbid Other					
INOR	-	JBSTRATE COM				SUBSTRATE COM ecessarily add u	-		
Substrate Type	<u> </u>	meter	% Composition in Sampling Reach	Substrat Type	te l	acteristic	% Composition in Sampling Area		
Bedrock				Detritus		s, wood, coarse			
Boulder	> 25	56 mm (10")	10	Demias	plant n	naterials (CPOM)	30		
Cobble	64-256	mm (2.5"-10")	15	l	black				
Gravel	2-64 n	nm (0.1"-2.5")		Muck-Muc	d I black,	very fine organic			
		11111 (0.1 -2.3)	25	Muck-Mud	d black,	(FPOM)			
Sand	0.06-	-2mm (gritty)		Muck-Mu	d black,				
Sand Silt		, ,	25	Muck-Muc Marl	u				
	0.00	-2mm (gritty)	25 25		grey,	shell fragments			
Silt	0.00 < 0.00	-2mm (gritty) 4-0.06 mm 04 mm (slick)	25 25 25 Surrounding Landu Commercia Industrial Residential Other:	Marl Ise Il	u	(FPOM) shell fragments Width 30ft Modera	ate 15-30ft		
Silt Clay	0.00 < 0.00	-2mm (gritty) 4-0.06 mm 4 mm (slick) Predominant S Forest Field/Pastur Agricultural ROW Canopy Cover Open	25 25 25 Surrounding Landu Commercia Industrial Residential Other:	Marl Ise Il	grey, FloodplainWide >	(FPOM) shell fragments Width 30ft Modera	ate 15-30ft		
Silt Clay WATERSHED FEATURES	0.00	-2mm (gritty) 4-0.06 mm 4 mm (slick) Predominant S Forest Field/Pastur Agricultural ROW Canopy Cover Open Shaded	25 25 25 Surrounding Landu Commercia Industrial Residential Other:	Marl Ise Il	grey, Floodplain Wide > ✓ Narrow	width 30ft Modera			
Silt Clay WATERSHED FEATURES	0.00 < 0.00	-2mm (gritty) 4-0.06 mm 4 mm (slick) Predominant S Forest Field/Pastur Agricultural ROW Canopy Cover Open Shaded	25 25 25 Surrounding Landu Commercia Industrial Residential Other: Partly shade	Marl Ise Il	grey, Floodplain Wide > ✓ Narrow	width 30ft Modera			



Photograph Direction East

STREAM ID	STREAM ID S-IJ82 STREAM NAME U					ME UNT to Bottom Creek			
	CLIENT MVP PROJECT NAME								
LAT 37.17081		ONG -80.137934	4	DATE 08/28					
INVESTIGATO	JRS E. Fc	oster, K. Pulver, S	3. Pilch	ner					
WATER TYPE		NRPW		FLOW REG Perennial		nittent	V	Ephemeral	
CHANNEL FE		Estimate Meas Top of Bank W Top of Bank He LB2.0ft Water Depth:_ Water Width:_ Ordinary High \ Ordinary High \ Flow Direction: Water PresentNo water, strStream bed inV Standing waterFlowing water	vidth: _ leight: 0.00 0.0 Water Water : _Sout	RB 3.0 In ft r Mark (Width) r Mark (Height thwest): <u>5.0</u> ft	Gran	dient (0 eam Ere None ficial, M Yes nin Roa Yes vert Pre vert Mai vert Size portion phologe	Flat	nelized
CHARACTERI		Slow	. Mode			Turbidity ClearSlightly turbidTurbid Other ORGANIC SUBSTRATE COMPONENTS			
INOR	-	UBSTRATE COM ld add up to 100°	-	_				SUBSTRATE COM secessarily add u	-
Substrate Type	Dia	meter		Composition in mpling Reach			Char	acteristic	% Composition in Sampling Area
Bedrock	<u></u>				Detritus			s, wood, coarse	
Boulder		56 mm (10")				\perp	plant n	naterials (CPOM)	10
Cobble		6 mm (2.5"-10")	5		Muck-Mu	ıd	black,	very fine organic	
Gravel		mm (0.1"-2.5")						(FPOM)	
Sand		-2mm (gritty)	60		┨ .				
Silt		04-0.06 mm	35	5	Marl		grey,	shell fragments	
Clay WATERSHED FEATURES		Predominant S Forest Forest Field/Pastu Agricultural ROW Canopy Cover Open Shaded	ure _ al _	ounding Land Commercia Industrial Residentia Other: Partly shad	al	\	odplain Wide > Narrow		I ate 15-30ft
		TEBRATES/OTH							RVATIONS
		oserved. Some stance stance of the stance of	`		moist bed.	Likely	ground	water fed.	



Photograph Direction SW

STREAM ID			STREAM NA	ME UNT to E	Bottom Creek	
CLIENT MV	Р					
LAT 37.16958	33 <u>L</u> (ONG -80.13042	8 DATE 08/29/	/2017	COUNTY Roanoke	
INVESTIGATO	ORS E. Fo	ster, K. Pulver, S	S. Pilcher			
WATER TYPE		NRPW	FLOW REG Perennial	IME Intermitte	ent Ephemeral	
CHANNEL FE	ATURES	Top of Bank H LB 1.5 ft Water Depth: Water Width: Ordinary High	Vidth:8.0ft leight:	ft s	GinuosityLow Mo Gradient Flat Mo	(100 ft) (10 ft/100 ft) Heavy nelized ✓ No
FLOW CHARACTER	ISTICS	Stream bed Standing w Flowing war	tream bed dry I moist vater	M F F	Proportion of Reach Repres Morphology Types (Only enter Riffle 25 % Run 60 Pool 15 % Furbidity Clear Other Other	er if water present) %
INOR	-	JBSTRATE COI		_	RGANIC SUBSTRATE COM	
Substrate	(shoul	JBSTRATE COI d add up to 100 meter	0%) 100 % Composition in	Substrate	RGANIC SUBSTRATE COM loes not necessarily add up Characteristic	y to 100%) % Composition in
Substrate Type	(shoul	d add up to 100)%) 100	(c	Characteristic	p to 100%)
Substrate Type Bedrock	(shoul	d add up to 100 meter	0%) 100 % Composition in	Substrate	loes not necessarily add u	y to 100%) % Composition in
Substrate Type	(shoul	d add up to 100 meter 56 mm (10")	0%) 100 % Composition in	Substrate Type	Characteristic sticks, wood, coarse plant materials (CPOM)	y to 100%) % Composition in
Substrate Type Bedrock Boulder	Shoul Diar	meter 56 mm (10") mm (2.5"-10")	% Composition in Sampling Reach	Substrate Type	Characteristic sticks, wood, coarse	p to 100%) % Composition in
Substrate Type Bedrock Boulder Cobble	Shoul Dian > 25 64-256 2-64 r	d add up to 100 meter 56 mm (10")	% Composition in Sampling Reach	Substrate Type Detritus	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic	p to 100%) % Composition in
Substrate Type Bedrock Boulder Cobble Gravel	Shoul Diar	meter 66 mm (10") mm (2.5"-10") nm (0.1"-2.5")	% Composition in Sampling Reach	Substrate Type Detritus	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic	p to 100%) % Composition in
Substrate Type Bedrock Boulder Cobble Gravel Sand	Shoule	d add up to 100 meter 56 mm (10") mm (2.5"-10") nm (0.1"-2.5") -2mm (gritty) 4-0.06 mm 04 mm (slick)	% Composition in Sampling Reach 20 70 10	Substrate Type Detritus Muck-Mud Marl	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments	y to 100%) % Composition in
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt	Shoule	d add up to 100 meter 56 mm (10") mm (2.5"-10") nm (0.1"-2.5") -2mm (gritty) 4-0.06 mm 04 mm (slick)	20 70 10 Surrounding Landu — Commercia ure — Industrial — Residential — Other: Unir	Substrate Type Detritus Muck-Mud Marl Ise Fal mproved road	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments	y to 100%) % Composition in
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Shoul Dian	meter 56 mm (10") mm (2.5"-10") nm (0.1"-2.5") -2mm (gritty) 4-0.06 mm 04 mm (slick) Predominant Forest Field/Past Agricultura ROW Canopy Cove Open Shaded	20 70 10 Surrounding Landu — Commercia ure — Industrial — Residential — Other: Unir	Substrate Type Detritus Muck-Mud Marl Ise Fal mproved road ed	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments cloodplain Width Wide > 30ftModera	y to 100%) % Composition in Sampling Area



Photograph Direction South

	S-IJ83		STREAM NA	ME UNT to	E UNT to Bottom Creek			
CLIENT MVI	Р	PROJECT NAME MVP						
LAT 37.16940	06 <u>L(</u>	ONG -80.138303			COUNTY Roanoke			
INVESTIGATO	ORS E. Fo	ster, K. Pulver, S	S. Pilcher					
WATER TYPE	RPW	NRPW _	FLOW REG Perennial	IME Intermitt	ent Ephemeral			
CHANNEL FE	ATURES	Top of Bank House LB 1.0 ft Water Depth: Water Width: Ordinary High	/idth:5.0ft eight: RB1.0	ft 1.5ft :4.0in	Gradient Flat <u>✓</u> Mo	nelized		
					Culvert Material: Corrugated Culvert Size: 18 in			
FLOW CHARACTER	ISTICS	Stream bed Standing water Flowing water	ream bed dry moist ater		Proportion of Reach Repres Morphology Types (Only ente Riffle % Run Pool % Turbidity Clear Slightly to Other	er if water present) %		
INOR		JBSTRATE CON		_	DRGANIC SUBSTRATE COM			
•	(Snoui	d add up to 100	%) 100	,	does not necessarily add u	p to 100%)		
Substrate Type		meter Teta	% Composition in Sampling Reach	Substrate Type		· · · · · · · · · · · · · · · · · · ·		
			% Composition in	Substrate Type		% Composition in		
Туре	Diar		% Composition in	Substrate	Characteristic	% Composition in		
Type Bedrock	Diar > 25	meter	% Composition in	Substrate Type Detritus	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic	% Composition in		
Type Bedrock Boulder	Diar > 25 64-256 2-64 n	meter 56 mm (10") mm (2.5"-10") nm (0.1"-2.5")	% Composition in	Substrate Type	Characteristic sticks, wood, coarse plant materials (CPOM)	% Composition in		
Type Bedrock Boulder Cobble Gravel Sand	> 25 64-256 2-64 n	meter 56 mm (10") mm (2.5"-10") nm (0.1"-2.5") -2mm (gritty)	% Composition in Sampling Reach	Substrate Type Detritus	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM)	% Composition in		
Type Bedrock Boulder Cobble Gravel Sand Silt	> 25 64-256 2-64 n 0.06-	meter 56 mm (10") mm (2.5"-10") nm (0.1"-2.5") -2mm (gritty) 4-0.06 mm	% Composition in Sampling Reach 30 50	Substrate Type Detritus	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic	% Composition in		
Type Bedrock Boulder Cobble Gravel Sand	> 25 64-256 2-64 n 0.06-	meter 56 mm (10") mm (2.5"-10") nm (0.1"-2.5") -2mm (gritty) 4-0.06 mm 14 mm (slick)	% Composition in Sampling Reach 30 50 10	Substrate Type Detritus Muck-Mud Marl	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments	% Composition in		
Type Bedrock Boulder Cobble Gravel Sand Silt	> 25 64-256 2-64 n 0.06- 0.00 < 0.00	meter 56 mm (10") mm (2.5"-10") nm (0.1"-2.5") -2mm (gritty) 4-0.06 mm 14 mm (slick)	% Composition in Sampling Reach 30 50 10 10 Surrounding Landu — Commercia Industrial I V Residential V Other: Cros	Substrate Type Detritus Muck-Mud Marl Ise Il	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width Wide > 30ft Narrow <15ft	% Composition in Sampling Area		
Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	> 25 64-256 2-64 n 0.06- 0.00 < 0.00	meter 56 mm (10") mm (2.5"-10") nm (0.1"-2.5") -2mm (gritty) 4-0.06 mm 14 mm (slick) Predominant Forest Field/Pastu Agricultura ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 30 50 10 10 Surrounding Landu — Commercia Industrial I	Substrate Type Detritus Muck-Mud Marl Ise Il	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width Wide > 30ft Narrow <15ft	% Composition in Sampling Area		



Photograph Direction South

STREAM ID	S-IJ88			STREAM NA	ME Bottor	n Creek			
CLIENT MV	Р			PROJECT N					
LAT 37.16740		ONG -80.13909		DATE 08/30/		COUNTY Roanoke			
INVESTIGATO	ORS E. Fo	ster, K. Pulver,	S. Pilche	9					
WATER TYPE	RPW [NRPW	F	FLOW REGIME Perennial Intermittent Ephemeral					
		Estimate Mea	acuromo	onte		Sinuosit	y Low 🗸	Medium High	
	Top of Bank V Top of Bank I LB <u>2.5</u> ff Water Depth: Water Width:	Vidth: Height: t	20.0 ft RB 2.5 ft	ft	Gradient Stream E	FlatMo (0.5/100 ft) (2 ft	oderate Severe (10 ft/100 ft) Heavy		
CHANNEL FE	ATURES	Ordinary High			15 O ft	Ye	s <u>v</u> No)	
		_				_	oadside Ditch		
		Ordinary High			: <u>10.0</u> In	Ye)	
		Flow Direction	n: South	west	-		PresentYes		
							Material:		
							ize:in		
FLOW CHARACTER	ISTICS	Water Preser No water, s Stream bed Standing w Flowing wa	stream be d moist vater	ed dry		Proporti	on of Reach Repre ogy Types (Only ento 5 % Run 35 0 %	er if water present)	
							/ r <u>⊬</u> Slightly t	urbid Turbid	
		Velocity <u>✓</u> Fast	_ Modera	ata			er		
		Slow	_ IVIOGCIE	aic		_			
INOR	-	UBSTRATE CO	_	_			SUBSTRATE COM		
I	(shou	ld add up to 100	0%) 100)		(aoes no	necessarily add u	p to 100%)	
Substrate Type		meter	% Co	omposition in pling Reach	Substra Type	te	aracteristic	1	
_			% Co	mposition in	Туре	te Ch	aracteristic	% Composition in Sampling Area	
Туре	Dia		% Co	mposition in		te Ch	aracteristic	% Composition in Sampling Area	
Type Bedrock	Dia	meter	% Co	omposition in pling Reach	Type Detritus	te Ch	aracteristic cks, wood, coarse t materials (CPOM) k, very fine organic	% Composition in Sampling Area	
Type Bedrock Boulder	Dia > 28 64-256 2-64 r	meter 56 mm (10") 5 mm (2.5"-10") nm (0.1"-2.5")	% Co Sam	omposition in pling Reach	Туре	te Ch	aracteristic cks, wood, coarse t materials (CPOM)	% Composition in Sampling Area	
Type Bedrock Boulder Cobble	Dia > 28 64-256 2-64 r	meter 56 mm (10") 5 mm (2.5"-10")	% Co Sam	omposition in pling Reach	Type Detritus	te Ch	aracteristic cks, wood, coarse t materials (CPOM) k, very fine organic	% Composition in Sampling Area	
Type Bedrock Boulder Cobble Gravel	> 29 64-256 2-64 r	meter 56 mm (10") 5 mm (2.5"-10") nm (0.1"-2.5")	% Co Sam 20 30	omposition in pling Reach	Type Detritus	tte Ch stii plan d blac	aracteristic cks, wood, coarse t materials (CPOM) k, very fine organic	% Composition in Sampling Area	
Type Bedrock Boulder Cobble Gravel Sand	> 25 64-256 2-64 r 0.06	meter 56 mm (10") 5 mm (2.5"-10") 7 mm (0.1"-2.5") 7 mm (gritty) 14-0.06 mm 14 mm (slick)	% Co Sam 20 30 50	emposition in pling Reach	Type Detritus Muck-Mu Marl	te Ch stiin plan d blacd	aracteristic cks, wood, coarse t materials (CPOM) k, very fine organic (FPOM) cy, shell fragments	% Composition in Sampling Area	
Type Bedrock Boulder Cobble Gravel Sand Silt	> 29 64-256 2-64 r 0.06 0.00 < 0.00	meter 56 mm (10") 5 mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 14-0.06 mm	% Co Sam 20 30 50 surrou ture al —	emposition in pling Reach	Type Detritus Muck-Mu Marl	te Ch stii plan d blac gre Floodpla Wide	aracteristic cks, wood, coarse t materials (CPOM) k, very fine organic (FPOM) ey, shell fragments in Width	% Composition in Sampling Area	
Type Bedrock Boulder Cobble Gravel Sand Silt Clay	> 29 64-256 2-64 r 0.06 0.00 < 0.00	meter 56 mm (10") 5 mm (2.5"-10") nm (0.1"-2.5") -2mm (gritty) 14-0.06 mm 14 mm (slick) Predominant Forest Field/Past Agricultura ROW Canopy Cove	% Co Sam 20 30 50 surrou ture al —	mposition in pling Reach mding Landu Commercia Industrial Residential Other:	Type Detritus Muck-Mu Marl	te Ch stii plan d blac gre Floodpla Wide	aracteristic cks, wood, coarse t materials (CPOM) k, very fine organic (FPOM) ry, shell fragments in Width > 30ft Modera	% Composition in Sampling Area	
Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	> 29 64-256 2-64 r 0.06 0.00 < 0.00	meter 56 mm (10") 5 mm (2.5"-10") nm (0.1"-2.5") -2mm (gritty) 14-0.06 mm 14 mm (slick) Predominant Forest Field/Past Agricultura ROW Canopy Cove Open Shaded	% Co Sam 20 30 50 surrou ture al —	mposition in pling Reach mding Landu Commercia Industrial Residential Other:	Type Detritus Muck-Mu Marl use	te Ch stii plan d blac gre Floodpla Wide Narro	aracteristic cks, wood, coarse t materials (CPOM) k, very fine organic (FPOM) ry, shell fragments in Width > 30ft Modera	% Composition in Sampling Area	
Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	> 29 64-256 2-64 r 0.06 0.00 < 0.00	meter 56 mm (10") 5 mm (2.5"-10") nm (0.1"-2.5") -2mm (gritty) 14-0.06 mm 14 mm (slick) Predominant Forest Field/Past Agricultura ROW Canopy Cove Open Shaded	% Co Sam 20 30 50 ture — aal — er	nding Landu Commercia Industrial Residential Other:	Type Detritus Muck-Mu Marl Ise	te Ch stii plan d blac gre Floodpla Wide Narro	aracteristic cks, wood, coarse t materials (CPOM) k, very fine organic (FPOM) ey, shell fragments in Width > 30ft Modera w <15ft	% Composition in Sampling Area	



Photograph Direction $\underline{\text{NE}}$

STREAM ID	S-IJ84		STREAM NA	ME UNT to	Bottom Creek			
CLIENT MVI	Р	PROJECT NAME MVP						
LAT 37.1685	13 L (ONG -80.13850			COUNTY Roanoke			
INVESTIGATO	ORS E. Fo	ster, K. Pulver,	S. Pilcher					
WATER TYPE	RPW	NRPW [FLOW REG Perennial	IME Intermitte	Intermittent Ephemeral			
CHANNEL FE	ATURES	Top of Bank H LB2.0fl Water Depth: Water Width:_ Ordinary High	Vidth:15.0ft Height: t	ft	Gradient Flat (0.5/100 ft) (2 ft/ Stream Erosion Moderate Artificial, Modified or Chanryes No Within Roadside Ditch Yes ✓ No Culvert Present Yes Culvert Material: Culvert Size:in	v No		
FLOW CHARACTER	ISTICS	Stream bed Standing w Flowing wa Velocity Fast	tream bed dry I moist vater		Proportion of Reach Represented by Stream Morphology Types (Only enter if water present) Riffle % Run 30 % Pool 70 % Turbidity Clear Slightly turbid Turbid Other			
Ī		<u>✓</u> Slow						
INOR	_	JBSTRATE COI d add up to 100		_	PRGANIC SUBSTRATE COM does not necessarily add up			
Substrate Type	(shoul	JBSTRATE CO		_	does not necessarily add up	o to 100%)		
Substrate	(shoul	JBSTRATE COI	% Composition in	Substrate Type	Characteristic sticks, wood, coarse	% Composition in		
Substrate Type	(shoul	JBSTRATE COI	% Composition in	Substrate	does not necessarily add up Characteristic	% Composition in		
Substrate Type Bedrock	(shoul	JBSTRATE COI d add up to 100 meter	% Composition in	Substrate Type Detritus	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic	% Composition in		
Substrate Type Bedrock Boulder	Shoul Dian > 28 64-256	JBSTRATE COI d add up to 100 meter	% Composition in	Substrate Type	Characteristic sticks, wood, coarse plant materials (CPOM)	% Composition in		
Substrate Type Bedrock Boulder Cobble	Shoul Dial > 25 64-256 2-64 r	JBSTRATE COI d add up to 100 meter 56 mm (10") mm (2.5"-10")	% Composition in	Substrate Type Detritus	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic	% Composition in		
Substrate Type Bedrock Boulder Cobble Gravel	> 25 64-256 2-64 r	JBSTRATE COI Id add up to 100 meter 56 mm (10") 5 mm (2.5"-10") nm (0.1"-2.5")	% Composition in Sampling Reach	Substrate Type Detritus	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic	% Composition in		
Substrate Type Bedrock Boulder Cobble Gravel Sand	Shoul Dial	DBSTRATE COI d add up to 100 meter 56 mm (10") mm (2.5"-10") nm (0.1"-2.5") -2mm (gritty) 4-0.06 mm 04 mm (slick)	% Composition in Sampling Reach 50 40	Substrate Type Detritus Muck-Mud Marl	characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments	% Composition in		
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt	Shoul Dial	DBSTRATE COI d add up to 100 meter 56 mm (10") mm (2.5"-10") nm (0.1"-2.5") -2mm (gritty) 4-0.06 mm 04 mm (slick)	% Composition in Sampling Reach 50 40 10 Surrounding Landu — Commerciaure — Industrial — Residential — Other:	Substrate Type Detritus Muck-Mud Marl	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM)	% Composition in Sampling Area		
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Shoul Diar	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 4-0.06 mm 04 mm (slick) Predominant Forest Agricultura ROW Canopy Cove Open Shaded	Surrounding Landu Commercia Industrial Residential Other:	Substrate Type Detritus Muck-Mud Marl see I	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width Wide > 30ft Modera	% Composition in Sampling Area		



Photograph Direction SSW

Comments:			

STREAM ID	S-IJ89			STREAM NA	ME UNT	to Botto	m Creek		
CLIENT MVI				PROJECT NAME MVP					
LAT 37.16578		ONG -80.13915	4	DATE 08/30/					
INVESTIGATO	ORS E. Fo	ster, K. Pulver,	S. Pilch	ner					
WATER TYPE	RPW [NRPW [FLOW REG Perennial	FLOW REGIME Perennial Intermittent Ephemeral				
CHANNEL FE	ATURES	Water Depth: Water Width:_ Ordinary High Ordinary High Flow Direction	Vidth: _ Height: t	RB 3.0 in ft Mark (Width): Mark (Height)	<u>3.5</u> ft	Stread Stread Artifit With Culve Culve	ient Flat <u>✔</u> Mo	v/100 ft) (10 ft/100 ft) Heavy nelized v No	
FLOW CHARACTER	FLOW CHARACTERISTICS Water Present No water, stream bed dry Stream bed moist Standing water Flowing water Velocity Fast Slow Moderate Slow					Morp Riffle Pool Turb	hology Types (Only enter 60 % Run 20	er if water present)) %	
INOR	-	UBSTRATE CO	_	ENTS 00			NIC SUBSTRATE CON not necessarily add u		
Substrate Type		meter	% C	composition in npling Reach	Substra Type		Characteristic	% Composition in Sampling Area	
Bedrock					Detritus		sticks, wood, coarse		
Boulder	> 2	56 mm (10")	15	5	Detitido		plant materials (CPOM)		
Cobble	64-256	6 mm (2.5"-10")	20)	Muck-Mu	ıd	black, very fine organic		
Gravel		mm (0.1"-2.5")	30)	maon ma		(FPOM)		
Sand	0.06	-2mm (gritty)	35	5					
Silt	0.00	04-0.06 mm			Marl		grey, shell fragments		
Clay	< 0.00	04 mm (slick)							
WATERSHED FEATURES		Predominant ✓ Forest — Field/Past — Agricultura — ROW Canopy Cove — Open ✓ Shaded	ure _ al _	unding Landu Commercia Industrial Residential Other: Partly shad	al	v	dplain Width Vide > 30ft Modera larrow <15ft	ate 15-30ft	
		<u> </u>							
MAC	ROINVER	TEBRATES/OT	HER W	/ILDLIFE OBS	ERVED OF	R OTHE	R NOTES AND OBSE	RVATIONS	
No macros obs	erved. Wi	thin dense rhodo	odendro	on thicket.					



Photograph Direction NW

STREAM ID	S-IJ90		STREAM NA	ME UNT to Bottom Creek				
CLIENT MV			PROJECT N	AME MVP	,			
LAT 37.16567		ONG -80.13933						
INVESTIGATO	ORS E. Fo	ster, K. Pulver,	S. Pilcher					
WATER TYPE				FLOW REGIME Perennial Intermittent Ephemeral				
		l =			<u> </u>			
CHANNEL FE	ATURES	Top of Bank I LB <u>2.5</u> f Water Depth: Water Width:	Vidth:7.0 ft Height: t		Gradient Flat Mod			
			Water Mark (Width):		Within Roadside Ditch			
			Water Mark (Height)	: <u>3.0</u> in	Yes VNo			
		Flow Direction	n: Northwest	_	Culvert PresentYes	√ No		
					Culvert Material:			
								
		Water Preser	-4		Culvert Size:in	andad bu Charan		
FLOW			tream bed dry I moist vater		Proportion of Reach Repres Morphology Types (Only ente Riffle 100 % Run Pool %			
CHARACTER	ISTICS	Thowning wa			Turbidity			
		Velocity			ClearSlightly tu Other	irbidTurbid		
		Fast ✓ Slow	_ Moderate		Other			
INOR	CANIC SI	UBSTRATE CO	MDONENTS		ORGANIC SUBSTRATE COM	PONENTS		
		ld add up to 10			(does not necessarily add up			
Substrate Type	Dia	meter	% Composition in Sampling Reach	Substrat Type	e Characteristic	% Composition in Sampling Area		
Bedrock				Detritus	sticks, wood, coarse			
Boulder		56 mm (10")			plant materials (CPOM)			
Cobble		6 mm (2.5"-10")	30	Muck-Muc	black, very fine organic			
Gravel		mm (0.1"-2.5")	35		(FPOM)			
Sand	0.06	-2mm (gritty)	35					
Silt		04-0.06 mm		Marl	grey, shell fragments			
Clay	< 0.00	04 mm (slick)						
WATERSHED FEATURES		Predominant ✓ Forest — Field/Past — Agricultura — ROW Canopy Cove — Open ✓ Shaded	al ResidentialOther:	al	Floodplain Width Wide > 30ft Narrow <15ft Modera	te 15-30ft		
-								
MAC	ROINVER	TEBRATES/OT	HER WILDLIFE OBS	SERVED OR	OTHER NOTES AND OBSER	VATIONS		
Tributary in der	nse rhodod	dendron thicket.						



Photograph Direction SE

STREAM ID S-KL25 STREAM NAME U					ME UNT	IE UNT to Mill Creek			
CLIENT MV				PROJECT N	AME MVP				
LAT 37.16019		ONG -80.13479	9	DATE 07/11/					
INVESTIGATO	ORS J. Co	ook, A. Mengel, Ł	K. Pulve	er					
WATER TYPE		NRPW		FLOW REG Perennial	IME Interm	nittent 🔽	Ephemeral		
CHANNEL FE	ATURES	Estimate Mea Top of Bank V Top of Bank F LB1.0 fi Water Depth: Water Width: Ordinary High Ordinary High Flow Direction	Width: _ Height: t 	5.0 ft RB 3.0 in ft Mark (Width): Mark (Height)	ft	Stream VN Artificia Y Within F Culvert	FlatMo (0.5/100 ft) (2 ft/ Erosion oneModerate I, Modified or ChangesNo Roadside Ditch esNo PresentYes Material:	nelized <u>✓</u> No	
FLOW CHARACTER	ISTICS	Water Preser No water, s Stream bec Standing w Flowing wa Velocity Fast Slow	stream b d moist vater	ŕ		Proport Morphol Riffle 2 Pool Turbidit	%	er if water present) %	
INOR		UBSTRATE CO					C SUBSTRATE COM	-	
Substrate Type	Dia	meter		omposition in opling Reach	Substra Type	1 (2)	naracteristic	% Composition in Sampling Area	
Bedrock					Detritus		icks, wood, coarse		
Boulder	> 2	56 mm (10")			Detilitus	plar	nt materials (CPOM)		
Cobble	64-256	6 mm (2.5"-10")			Muck-Mu	ıd bla	ck, very fine organic		
Gravel		nm (0.1"-2.5")	30)	WIGGK-WIG		(FPOM)		
Sand	0.06	-2mm (gritty)	20)					
Silt		04-0.06 mm	50)	Marl	gr	ey, shell fragments		
Clay	< 0.00	04 mm (slick)							
WATERSHED FEATURES		Predominant ✓ Forest — Field/Past — Agricultura — ROW Canopy Cove — Open ✓ Shaded	ture _ al _	unding Landu Commercia Industrial Residential Other: Partly shad	al	Wide	ain Width > > 30ft Modera ow <15ft	ate 15-30ft	
MAC	ROINVER	TEBRATES/OT	HER W	ILDLIFE OBS	SERVED OI	R OTHER	NOTES AND OBSER	RVATIONS	
No macroinvert	abrates, d	lue to lack of sui	table su	bstrate					



Photograph Direction North

STREAM ID S-ST9b STREAM N				AM NA	MINAME UNT to Mill Creek				
CLIENT MV	CLIENT MVP PROJECT NAME								
LAT 37.15446		ONG -80.12922					COUNTY Roanoke		
INVESTIGATO	ORS S Ry	an, K Pulver, H F	Phelan						
WATER TYPE	RPW [NRPW	FLOV Perenn	V REG		ittent	Ephemeral		
CHANNEL FE	ATURES	Top of Bank H LB2.0ft Water Depth: Water Width:_ Ordinary High	Vidth: 8.0 leight: RB 2 5.00 in 5.0 ft Water Mark (Water Mark (Harmonia)	8.0 ft RB 2.0 ft in ft r Mark (Width): 6.5 ft r Mark (Height): 9.0 in			Within Roadside Ditch YesNo Culvert Present Yes No Culvert Material: Concrete		
FLOW CHARACTER	ISTICS	nt tream bed dry moist vater ter Moderate	Riffle 25 % Run 50 % Pool 25 % Turbidity ClearSlightly turbidTu			er if water present)) %			
INOR	_	UBSTRATE COI	-				IIC SUBSTRATE CON not necessarily add u		
Substrate Type	Dia	meter	% Composition Sampling R		Substra Type		Characteristic	% Composition in Sampling Area	
Bedrock	. 01	50 (40II)			Detritus		sticks, wood, coarse ant materials (CPOM)		
Boulder		56 mm (10")						10	
Cobble Gravel		mm (2.5"-10") mm (0.1"-2.5")	10		Muck-Mu	d b	lack, very fine organic (FPOM)	0	
Sand		-2mm (gritty)	10				()		
Silt		94-0.06 mm	80		Marl		grey, shell fragments	0	
Clay		04 mm (slick)	10		aii	'	g. og, onon nagmonio		
WATERSHED FEATURES			al Resi Other	mercia strial dential	I	<u>✓</u> Wi	olain Width de > 30ft Modera rrow <15ft	ate 15-30ft	
MAC	ROINVED	TERRATES/OT	HEB WII DI IE	E OPS	ERVED OF	OTHE	NOTES AND OBSE	PVATIONS	
	ert washed	l out area around					ately 25' from culvert. A		



Photograph Direction West

STREAM ID	STREAM ID S-KL55			STREAM NAME UNT to Mill Creek			
CLIENT MVP			PROJECT N	PROJECT NAME MVP			
LAT 37.1500		ONG -80.13242			COUNTY Roanoke		
INVESTIGAT	ORS E. Fo	oster, J. Cook, K	. Gracie				
TNW	E RPW	NRPW [FLOW REG Perennial	Intermit	tent Ephemeral		
		Estimate Mea	asurements		Sinuosity Low	Medium ✓ High	
			Width: 15.0 ft Height:		Gradient <u>✓</u> FlatMc (0.5/100 ft) (2 ft	oderate Severe (10 ft/100 ft)	
		LB <u>2.0</u> f		ft	Stream Erosion	Heern	
		Water Depth:	in		<u>✓</u> NoneModerate	_	
CHANNEL FE	ATURES	Water Width:			Artificial, Modified or Chan Yes ✓ No		
		Ordinary High	n Water Mark (Width)	: <u>10.0</u> ft		,	
		Ordinary High	n Water Mark (Height): <u>7.0</u> in	Within Roadside Ditch	,	
		Flow Direction	n: Southeast	_	YesNo		
					Culvert PresentYes		
					Culvert Material:		
					Culvert Size:in		
FLOW		Stream bed	stream bed dry d moist vater		Proportion of Reach Representations (Only enter Riffle 20 % Run 70 Pool 10 %	er if water present)	
CHARACTER	RISTICS	✓ Flowing wa Velocity —Fast ✓ Slow	_ Moderate	Turbidity ✓ ClearSlightly turbidTurbi _ Other			
		<u>•</u> 0.0					
INOF	RGANIC SI	UBSTRATE CO	MPONENTS		ORGANIC SUBSTRATE COM	//PONENTS	
INOF	_	UBSTRATE CO	-		ORGANIC SUBSTRATE COM (does not necessarily add u		
Substrate Type	(shou		-		(does not necessarily add u	p to 100%)	
Substrate Type Bedrock	(should Dia	ld add up to 10	0%) 100 % Composition in	Substrate	Characteristic sticks, wood, coarse	p to 100%) % Composition in	
Substrate Type Bedrock Boulder	(shoul	meter 56 mm (10")	0%) 100 % Composition in	Substrate Type	Characteristic	p to 100%) % Composition in	
Substrate Type Bedrock Boulder Cobble	Dia > 28 64-256	meter 56 mm (10") 6 mm (2.5"-10")	0%) 100 % Composition in Sampling Reach	Substrate Type	Characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic	p to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel	Shoul Dia	meter 56 mm (10") 5 mm (2.5"-10") 7 mm (0.1"-2.5")	% Composition in Sampling Reach	Substrate Type Detritus	Characteristic sticks, wood, coarse plant materials (CPOM)	p to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand	Dia	meter 56 mm (10") 5 mm (2.5"-10") 7 mm (0.1"-2.5") 7 -2mm (gritty)	% Composition in Sampling Reach	Substrate Type Detritus Muck-Mud	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM)	p to 100%) % Composition in Sampling Area 0	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt	Shoul Dia	meter 56 mm (10") 6 mm (2.5"-10") 7 mm (0.1"-2.5") 7 -2mm (gritty) 104-0.06 mm	% Composition in Sampling Reach	Substrate Type Detritus	Characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic	p to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand	Shoul Dia	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 04-0.06 mm 04 mm (slick)	% Composition in Sampling Reach 20 70 10	Substrate Type Detritus Muck-Mud Marl	Characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments	p to 100%) % Composition in Sampling Area 0	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt	Shoul Dia	meter 56 mm (10") 5 mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 04-0.06 mm 04 mm (slick) Predominant Forest Field/Past Agriculture ROW Canopy Cove	% Composition in Sampling Reach 20 70 10 t Surrounding Land — Commerciture — Industrial al — Residential — Other:	Substrate Type Detritus Muck-Mud Marl use	Characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width	p to 100%) % Composition in Sampling Area 0	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay	Shoul Dia	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 04-0.06 mm 04 mm (slick) Predominant Forest Field/Past Agriculture ROW Canopy Cove	% Composition in Sampling Reach 20 70 10 surrounding Land — Commerciture Industrial al — Residential — Other:	Substrate Type Detritus Muck-Mud Marl use	Characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width Wide > 30ftModera	p to 100%) % Composition in Sampling Area 0 0	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Shoul Dia	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 04-0.06 mm 04 mm (slick) Predominant Forest Field/Past Agriculture ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 20 70 10 t Surrounding Land — Commerciture Industrial al — Residential — Other: Partly shace	Substrate Type Detritus Muck-Mud Marl use al	Characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width Wide > 30ft Modera Narrow <15ft	p to 100%) % Composition in Sampling Area 0 0 0 ate 15-30ft	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Shoul Dia	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 04-0.06 mm 04 mm (slick) Predominant Forest Field/Past Agriculture ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 20 70 10 t Surrounding Land — Commerciture Industrial al — Residential — Other: Partly shace	Substrate Type Detritus Muck-Mud Marl use al	Characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width Wide > 30ftModera	p to 100%) % Composition in Sampling Area 0 0 0 ate 15-30ft	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Shoul Dia	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 04-0.06 mm 04 mm (slick) Predominant Forest Field/Past Agriculture ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 20 70 10 t Surrounding Land — Commerciture Industrial al — Residential — Other: Partly shace	Substrate Type Detritus Muck-Mud Marl use al	Characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width Wide > 30ft Modera Narrow <15ft	p to 100%) % Composition in Sampling Area 0 0 0 ate 15-30ft	



Photograph Direction West

STREAM ID	STREAM ID S-IJ12			STREAM NAME UNT to Mill Creek					
	CLIENT MVP				PROJECT NAME MVP				
LAT 37.1483		ONG -80.13391	3	DATE 04/09/2016 COUNTY Roanoke					
INVESTIGATO	ORS E. Fo	ster, S. Lieb, J.	Nierga	rth					
WATER TYPE	WATER TYPE TNW RPW NRPW NRPW				Interm	nittent	· 🔲	Ephemeral	
CHANNEL FEATURES Estimate Measuren Top of Bank Width: Top of Bank Height: LB1.0ft Water Depth:2.00 Water Width:2.5 Ordinary High Water Ordinary High Water Flow Direction: _Sou			RB 1.0 ft In ft Mark (Width) Mark (Height	Sinuosity Low Medium High Gradient Flat Moderate Sever			derate Severe (10 ft/100 ft) Heavy nelized No		
FLOW CHARACTER	FLOW CHARACTERISTICS Water Present No water, stream Stream bed moist Standing water Flowing water Velocity Fast Slow Model Model Slow			·	_	Mo Riff Po Tu	rpholo fle 45 ol 10 rbidity Clear	gy Types (Only ente % Run 45 %	er if water present)
INOR	_	UBSTRATE CO	_	_		ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)			
Substrate Type	Dia	meter		composition in npling Reach			Cha	racteristic	% Composition in Sampling Area
Bedrock					Detritus			ks, wood, coarse	
Boulder	> 25	56 mm (10")			Detilitus		plant	materials (CPOM)	10
Cobble		mm (2.5"-10")			Muck-Mu	ıd	black, very fine organic		
Gravel		nm (0.1"-2.5")	10)	Widok Wie		(FPOM)		
Sand	0.06	-2mm (gritty)	60)					
Silt		4-0.06 mm	30)	Marl		grey	, shell fragments	
Clay	< 0.00	04 mm (slick)							
WATERSHED FEATURES Predominant Su ✓ Forest ✓ Field/Pasture — Agricultural — ROW Canopy Cover — Open — Shaded		ure _ al _ -	unding Land Commerci Industrial Residentia Other:	al	Flo	Wide >	n Width > 30ft <u>√</u> Modera v <15ft	ate 15-30ft	
-									
MAC	ROINVER	TEBRATES/OT	HER W	/ILDLIFE OB	SERVED O	R OTI	HER NO	OTES AND OBSER	RVATIONS
Algae	NOMYLN	.EDITALEO/OT		TEDEN E OB	OLIVELD O			O. LO AND ODGE	WAIIVIIV



Photograph Direction South

STREAM ID	STREAM ID S-EF44			STREAM NAME UNT to Bottom Creek			
CLIENT MV	Р		PROJECT N	PROJECT NAME MVP			
LAT 37.14299		ONG -80.13833		DATE 08/23/2016 COUNTY Roanoke			
INVESTIGATO	DRS D Ha	dersbeck, S The	erkildson, K Pulver				
WATER TYPE	RPW [NRPW	FLOW REG Perennial	IME Intermit	ttent		
		Estimate Mea	acuramento.		Sinuosity Low 🗸	Modium High	
		Top of Bank V Top of Bank H	Vidth:7.0 ft Height: t	ft	Gradient Flat	oderate Severe /100 ft) (10 ft/100 ft)	
					Artificial, Modified or Chan		
CHANNEL FE	ATURES	Water Width:			Yes ✓ No		
			Water Mark (Width):		Within Roadside Ditch		
			Water Mark (Height)): <u>3.0</u> in	Yes VNC)	
		Flow Direction	ı: West	_	Culvert PresentYes		
					Culvert Material:		
					Culvert Size:in		
FLOW		Stream bed Standing w	stream bed dry d moist vater		Proportion of Reach Repres Morphology Types (Only enter Riffle 30 % Run 70 Pool %	er if water present)	
CHARACTER	ISTICS	✓ Flowing wa	ter		Turbidity		
		Velocity			ClearSlightly turbidTurbid		
		Fast	_ Moderate		✓ Other		
		<u></u> ✓ Slow					
INORGANIC SUBSTRATE COMPON (should add up to 100%)			MPONENTS		ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)		
	(shou		· ·	1		p to 100%)	
Substrate Type			9%) 100 % Composition in Sampling Reach	1	(does not necessarily add u		
Type Bedrock	Dia	d add up to 100 meter	% Composition in Sampling Reach	Substrate	characteristic sticks, wood, coarse	y to 100%) % Composition in Sampling Area	
Type Bedrock Boulder	Dia	meter 56 mm (10")	% Composition in Sampling Reach	Substrate Type	characteristic sticks, wood, coarse plant materials (CPOM)	p to 100%) % Composition in	
Type Bedrock Boulder Cobble	Dia > 28	meter 56 mm (10") mm (2.5"-10")	% Composition in Sampling Reach 20 20	Substrate Type	characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic	y to 100%) % Composition in Sampling Area	
Type Bedrock Boulder Cobble Gravel	Dia > 25 64-256 2-64 r	meter 66 mm (10") mmm (2.5"-10") mm (0.1"-2.5")	% Composition in Sampling Reach 20 20 50	Substrate Type Detritus	Characteristic sticks, wood, coarse plant materials (CPOM)	y to 100%) % Composition in Sampling Area	
Type Bedrock Boulder Cobble Gravel Sand	> 29 64-256 2-64 r	d add up to 100 meter 56 mm (10") mm (2.5"-10") nm (0.1"-2.5") -2mm (gritty)	% Composition in Sampling Reach 20 20	Substrate Type Detritus Muck-Mud	characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM)	y to 100%) % Composition in Sampling Area	
Type Bedrock Boulder Cobble Gravel Sand Silt	> 29 64-256 2-64 r 0.06 0.00	d add up to 100 meter 56 mm (10") mm (2.5"-10") nm (0.1"-2.5") -2mm (gritty) 4-0.06 mm	% Composition in Sampling Reach 20 20 50	Substrate Type Detritus	characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic	y to 100%) % Composition in Sampling Area	
Type Bedrock Boulder Cobble Gravel Sand	> 29 64-256 2-64 r 0.06 0.00 < 0.00	meter 56 mm (10") mm (2.5"-10") nm (0.1"-2.5") -2mm (gritty) 4-0.06 mm 4 mm (slick) Predominant Forest Field/Past Agricultura ROW	% Composition in Sampling Reach 20 20 50 10 Surrounding Lando — Commercial — Industrial — Residential — Other:	Substrate Type Detritus Muck-Mud Marl	characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM)	y to 100%) % Composition in Sampling Area	
Type Bedrock Boulder Cobble Gravel Sand Silt Clay	> 29 64-256 2-64 r 0.06 0.00 < 0.00	meter 56 mm (10") mm (2.5"-10") nm (0.1"-2.5") -2mm (gritty) 4-0.06 mm 4 mm (slick) Predominant Forest Field/Past Agricultura	% Composition in Sampling Reach 20 20 50 10 Surrounding Lando — Commercial — Industrial — Residential — Other:	Substrate Type Detritus Muck-Mud Marl Jse al	characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width Wide > 30ft Modera	p to 100%) % Composition in Sampling Area	
Type Bedrock Boulder Cobble Gravel Sand Silt Clay	> 29 64-256 2-64 r 0.06 0.00 < 0.00	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 4-0.06 mm 4 mm (slick) Predominant Forest Field/Past Agricultura ROW Canopy Cove Open	% Composition in Sampling Reach 20 20 50 10 Surrounding Landu Commercia Industrial Residential Other:	Substrate Type Detritus Muck-Mud Marl Jse al	characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width Wide > 30ft Modera	p to 100%) % Composition in Sampling Area	
Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Dia > 29 64-256 2-64 r 0.06 0.00 < 0.00	meter 56 mm (10") mm (2.5"-10") nm (0.1"-2.5") -2mm (gritty) 4-0.06 mm 4 mm (slick) Predominant Forest Field/Past Agricultura ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 20 20 50 10 Surrounding Landu Commercia Industrial Residential Other: Partly shad	Substrate Type Detritus Muck-Mud Marl Jase al	characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width Wide > 30ft Modera	p to 100%) % Composition in Sampling Area 20 ate 15-30ft	
Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	> 29 64-256 2-64 r 0.06 0.00 < 0.00	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 4-0.06 mm 04 mm (slick) Predominant Forest Field/Past Agricultura ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 20 20 50 10 Surrounding Landu Commercia Industrial Residential Other: Partly shad	Substrate Type Detritus Muck-Mud Marl Jase al	characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width Wide > 30ft Narrow <15ft Modera	p to 100%) % Composition in Sampling Area 20 ate 15-30ft	



Photograph Direction $\underline{\text{NE}}$

STREAM ID	STREAM ID S-IJ43			STREAM NAME Mill Creek			
CLIENT MV	CLIENT MVP			PROJECT NAME MVP			
LAT 37.1388		ONG -80.13940		DATE 07/11/2016 COUNTY Roanoke			
INVESTIGATO	ORS E. Fo	ster, K. Lew, J.	Bittner				
TNW		NRPW	FLOW REG Perennial	IME Intermit	tent Ephemeral		
		Estimate Mea	asurements		Sinuosity Low	Medium High	
Top of Bank Top of Bank			Width: 18.0 ft Height:		Gradient <u>✓</u> Flat Mo (0.5/100 ft) (2 ft	oderate Severe (100 ft) Severe	
		LB <u>2.0</u> f		π	Stream Erosion ✓ None Moderate	Нозм	
		Water Depth:				_ ′	
CHANNEL FE	ATURES	Water Width:			Artificial, Modified or Chan Yes • No		
		Ordinary High	Water Mark (Width)		<u> </u>	,	
		Ordinary High	n Water Mark (Height): <u>12.0</u> in	Within Roadside Ditch		
		Flow Direction	n: Southwest	_	YesNo		
					Culvert PresentYes		
					Culvert Material:		
					Culvert Size:in		
FLOW		Stream bed	stream bed dry d moist vater		Proportion of Reach Repre Morphology Types (Only entrainment and State of S	er if water present)	
CHARACTER	ISTICS	✓ Flowing wa Velocity Fast ✓ Slow	<u>′</u> Moderate		Turbidity Clear Slightly turbid Turbid Other		
INOR	_	UBSTRATE CO			DRGANIC SUBSTRATE COM (does not necessarily add u		
Substrate Type	(shou			((does not necessarily add u	p to 100%)	
Substrate	(should Dia	ld add up to 10	0%) 100 % Composition in	Substrate Type	Characteristic sticks, wood, coarse	p to 100%) % Composition in	
Substrate Type	(should Dia	ld add up to 10	0%) 100 % Composition in	Substrate	Characteristic	p to 100%) % Composition in	
Substrate Type Bedrock	(shoul	ld add up to 10	0%) 100 % Composition in	Substrate Type Detritus	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic	y to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel	Shoul Dia	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5")	0%) 100 % Composition in Sampling Reach	Substrate Type	Characteristic Sticks, wood, coarse plant materials (CPOM)	y to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand	Dia	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty)	9%) 100 % Composition in Sampling Reach	Substrate Type Detritus Muck-Mud	characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM)	y to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt	Shoul Dia	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 14-0.06 mm	% Composition in Sampling Reach	Substrate Type Detritus	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic	y to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand	Shoul Dia	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 14-0.06 mm 14 mm (slick)	% Composition in Sampling Reach	Substrate Type Detritus Muck-Mud Marl	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments	y to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt	Shoul Dia	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 14-0.06 mm 14 mm (slick) Predominant Forest Field/Past Agriculture ROW Canopy Cove	% Composition in Sampling Reach 30 10 60 t Surrounding Land — Commerciature — Industrial al — Residentia	Substrate Type Detritus Muck-Mud Marl use al	characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width	y to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay	Shoul Dia	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 14-0.06 mm 14 mm (slick) Predominant Forest Field/Past Agriculture ROW Canopy Cove	% Composition in Sampling Reach 30 10 60 Surrounding Landout Commercial Industrial Residential Cother: Valler	Substrate Type Detritus Muck-Mud Marl use al	characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width Wide > 30ft Modern	p to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Shoul Dia	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 14-0.06 mm 14 mm (slick) Predominant Forest Field/Past Agriculture ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 30 10 60 Surrounding Landous Commercial Industrial Residential Cother: Valler	Substrate Type Detritus Muck-Mud Marl use al ley	characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width Wide > 30ft Modern	y to 100%) % Composition in Sampling Area 5	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	(shoul Dia	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 14-0.06 mm 14 mm (slick) Predominant Forest Field/Past Agriculture ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 30 10 60 Surrounding Landous Commercial Industrial Residential Cother: Valler	Substrate Type Detritus Muck-Mud Marl use al ley	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width Wide > 30ft Narrow <15ft	p to 100%) % Composition in Sampling Area 5	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	(shoul Dia	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 14-0.06 mm 14 mm (slick) Predominant Forest Field/Past Agriculture ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 30 10 60 Surrounding Landous Commercial Industrial Residential Cother: Valler	Substrate Type Detritus Muck-Mud Marl use al ley	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width Wide > 30ft Narrow <15ft	y to 100%) % Composition in Sampling Area 5	



Photograph Direction SW

STREAM ID S-Y09	STREAM NAME UNT to Mill Creek
LAT 37.134572 LONG -80.137649	DATE 07/14/2015
CLIENT MVP	PROJECT NAME MVP
INVESTIGATORS D Hadersbeck, K Lew, G Bu	da, J Swilik
FLOW REGIME Perennial Intermittent ✓ Ephemeral	WATER TYPE TNW RPW_✓ NRPW

			leasurements		Stream Erosion		
		·	k Width: 4.0 ft		<u>✓</u> NoneModerate	Heavy	
		Top of Ban	•		Artificial, Modified or Char	nnelized	
CHANNEL FEATURES		LB <u>1.0</u>		<u>ft</u>	<u>✓</u> YesNo		
		•	h: <u>0.50 in</u>		Dam PresentYes _	✓ No	
		Water Widt	h: <u>3.5 ft</u>				
		High Water	Mark: 4.0 ft		Sinuosity <u>v</u> Low <u>v</u>	Medium High	
		Flow Direct	ion: South		Gradient		
					—	Severe (10 ft/100 ft)	
		Water Pres			Proportion of Reach Repre	esented by Stream	
		Stream b	r, stream bed dry ned moist		Morphology Types Riffle 20 % Run 80	%	
EL 014/		Standing			Pool %		
FLOW CHARACTER	ISTICS	<u>✓</u> Flowing	water		Turkidity		
		Velocity			Turbidity Clear ✓ Slightly turbid — Turbid		
		,	Moderate		OpaqueStained		
		✓ Slow			Other		
INOR		STRATE CO		ORGANIC SUBSTRATE COMPONENTS			
0.1.1.1	(snould	add up to 100		(does not necessarily add up to 100%)			
Substrate Type	Diame	eter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area	
Bedrock				Detritus	sticks, wood, coarse		
Boulder		mm (10")		200.100	plant materials (CPOM)	90	
Cobble		m (2.5"-10")		Muck-Mud	black, very fine organic		
Gravel		1 (0.1"-2.5")			(FPOM)		
Sand		nm (gritty)		Mand			
Silt		0.06 mm mm (slick)	90	Marl	grey, shell fragments		
Clay	< 0.004	, ,	10	duco	Indicate the dominant type	(Chaols and)	
		Predominant Surrounding Landuse ✓ Forest Commercial			✓ Trees Shrub		
		Field/Pa			GrassesHerba	ceous	
WATERSHED		Agricult	ural Resident	ial	Floodplain Width		
FEATURES		Other:			Wide > 30ft Mode	rate 15-30ft	
		Canopy Co	over		✓ Narrow <16ft		
		Partly o		aded	Wetland PresentYes	<u>✓</u> No	
		_			Wetland ID	_	
AQUATIC VE	SETATION				dominant species present ergent Rooted float	ing Free floating	
AQUATIC VE	SCIATION			Attached alga		i ice noating	

	Connects to S-Y07. Black pipe emerged from creek bed and supplying water to creek. Cinder block structure at head of feature during 2015 survey.
MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	Information listed on this form represents the data collected in 2015. The stream was not accessible for survey in 2019 to reconfirm the presence of a stream channel and OHWM.



Photograph Direction South

STREAM ID S-Y7	STREAM NAME UNT to Mill Creek
LAT 37.134315 LONG -80.137151	DATE 07/14/2015
CLIENT MVP	PROJECT NAME MVP
INVESTIGATORS D Hadersbeck, K Lew, G Bu	da, J Swilik
FLOW REGIME Perennial Intermittent ✓ Ephemeral	WATER TYPE TNW RPW ✓ NRPW

			leasurements		Stream Erosion		
		Top of Ban	k Width: 4.0 ft		<u>✓ None</u> Moderate .	Heavy	
		Top of Ban	k Height:		Artificial, Modified or Chan	nelized	
CHANNEL FEATURES		LB <u>0.5</u>	ft RB <u>1.0</u>	<u>ft</u>	Yes ∠ No		
		Water Dept	h: <u>1.00 in</u>		Dam PresentYesv	∠ No.	
		Water Widt	h: <u>3.0 ft</u>				
		High Water	Mark: <u>3.5</u> ft		Sinuosity Low	Medium High	
		Flow Direct	ion: East		Gradient		
						Severe (10 ft/100 ft)	
		Water Pres			Proportion of Reach Repre	sented by Stream	
			r, stream bed dry bed moist		Morphology Types Riffle 60 % Run 40	%	
		Standing			Pool %	,,	
FLOW CHARACTER	ISTICS	Flowing					
		Valasitus			Turbidity Clear ✓ Slightly to	turbidTurbid	
		Velocity Fast	Moderate		OpaqueStained		
		✓ Slow			Other		
INOR	GANIC SUB	STRATE CO	MPONENTS		RGANIC SUBSTRATE COM		
	(should	add up to 100	0%)	(does not necessarily add up to 100%)			
Substrate Type	Diame	eter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area	
Bedrock			0	Detritus	sticks, wood, coarse		
Boulder		mm (10")		Detritus	plant materials (CPOM)	35	
Cobble	64-256 m	m (2.5"-10")	5	Muck-Mud	black, very fine organic		
Gravel		า (0.1"-2.5")	5		(FPOM)		
Sand		nm (gritty)	40				
Silt		0.06 mm	40	Marl	grey, shell fragments		
Clay	< 0.004	mm (slick)	10				
		Predomina ✓ Forest	ant Surrounding Lan Commer	i duse cial	Indicate the dominant type Trees Shrubs		
		Field/Pa			Grasses Herba		
WATERSHED		Agricult	ural Resident	tial	Floodplain Width		
FEATURES		Other:			Wide > 30ft Moder	ate 15-30ft	
		Canopy Co	over		✓ Narrow <16ft		
		Partly o	penPartly sh	aded	Wetland Present ✓ Yes	No	
		<u></u> ✓ Shaded	Open		Wetland ID W-Z10; W-Y1; V		
			e dominant type and	d record the c	lominant species present	_	
AQUATIC VE	GETATION		_		ergentRooted float	ingFree floating	
		rioating	y aiyae	Attached alga	-		

MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	Connects to S-Y08 Information listed on this form represents the data collected in 2015. The stream was not accessible for survey in 2019 to reconfirm the presence of a stream channel and OHWM.



Photograph Direction SE

STREAM ID S-Y8	STREAM NAME UNT to Mill Creek
LAT 37.13415 LONG -80.137552	DATE 07/14/2015
CLIENT MVP	PROJECT NAME MVP
INVESTIGATORS D Hadersbeck, K Lew, G Bu	da, J Swilik
FLOW REGIME Perennial ✓ Intermittent — Ephemeral —	WATER TYPE TNW RPW_✓ NRPW

i elelililai.		пс— приспи		1X1 VV —				
		Catimata I	/leasurements		Stream Erosion			
			k Width: 4.0 ft		✓ None Moderate	Heavv		
CHANNEL FEATURES								
		Top of Ban	· ·		Artificial, Modified or Char	nnelized		
		LB <u>1.0</u>		<u>ft</u>	Yes No			
		Water Dep	th: 1.00 in		Dam Present Yes	∠ No		
		Water Widt	h: 3.5 ft		Dam Tresent 163 _			
		High Water	Mark: <u>4.0 ft</u>		Sinuosity Low	Medium High		
		Flow Direct	tion: East		Gradient			
					Flat Moderate _	Severe		
					. ,	(10 ft/100 ft)		
		Water Pres			Proportion of Reach Repre	esented by Stream		
			r, stream bed dry bed moist		Morphology Types Riffle 75 % Run 25	%		
		Standing			Pool %	70		
FLOW	ICTICC	Flowing	•		,,,			
CHARACTER	131163				Turbidity			
		Velocity			✓ Clear — Slightly — Opaque — Stained	turbidTurbid		
		Fast ✓ Slow	Moderate		OpaqueStainedOther			
		_						
INOR		STRATE CO add up to 10		ORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%)				
Substrate	`	•	% Composition in	Substrate	does not necessarily dad u	% Composition in		
Type	Diame	eter	Sampling Reach	Type	Characteristic	Sampling Area		
Bedrock			0		sticks, wood, coarse			
Boulder	> 256	mm (10")		Detritus	plant materials (CPOM)	15		
Cobble		m (2.5"-10")	5		black, very fine organic			
Gravel		n (0.1"-2.5")	5	Muck-Mud	(FPOM)			
Sand	0.06-2r	nm (gritty)	40					
Silt		0.06 mm	40	Marl	grey, shell fragments			
Clay	< 0.004	mm (slick)	10					
,		` ′	ant Surrounding Lan	duse	Indicate the dominant type	(Check one)		
		<u>✓</u> Forest	Commer		✓ Trees Shrub			
		Field/P			Grasses Herba	ceous		
WATERSHED		Agricult	tural Resident	tial	Floodplain Width			
FEATURES		Other:			Wide > 30ft Moderate 15-30ft ✓ Narrow <16ft			
		Canopy Co	over					
		Partly of		aded				
		✓ Shaded	Dpen		Wetland Present ✓ Yes Wetland ID W-Y1; W-Y2			
		Indicate th	e dominant type and		dominant species present			
AQUATIC VE	GETATION		• • •	Rooted subme		ing Free floating		
		Floatin	g algae	Attached algae	e —	<u> </u>		
		Information	listed on this form re	presents the d	ata collected in 2015. The st	ream was not		
		accessible	for survey in 2019 to	reconfirm the p	presence of a stream channe	and OHWM.		
MACROINVER	RTEBRATES	s						
OR OTHER WILDLIFE								
OBSERVED/C								
OBSERVATIO NOTES	UNA CHU							
		1						



Photograph Direction $\underline{\text{NE}}$

STREAM ID S-B22	STREAM NAME UNT to Mill Creek
LAT 37.129067 LONG -80.133446	DATE 04/09/2015
CLIENT MVP	PROJECT NAME MVP
INVESTIGATORS C. Ansari, J. Rodriguez, M.	Whitten
FLOW REGIME Perennial ✓ Intermittent — Ephemeral —	WATER TYPE TNW RPW_✓ NRPW

			Measurements		Stream Erosion	Hann
		Top of Bank Width: 4.0 ft		None _v_ModerateHeavy		
				Artificial, Modified or Channelized		
		LB <u>4.0</u>	ft RB <u>2.0</u>	<u>ft</u>	Yes _ <u>✓</u> No	
CHANNEL FE	ATURES	Water Dept	th: 8.00 in		Dam Present Yes	∠ No.
		Water Widt	h: <u>2.5 ft</u>		Dam Flesent les _	<u>/ </u>
		High Water	Mark: <u>12.0 in</u>		Sinuosity Low	Medium High
		Flow Direct	tion: Northeast		Gradient	
					FlatModerate _	Severe
		W-4 D	4		. , , ,	(10 ft/100 ft)
		Water Pres	senτ r, stream bed dry		Proportion of Reach Repre Morphology Types	esented by Stream
			ped moist		Riffle 80 % Run 10	%
FLOW		Standing	•		Pool 10 %	
CHARACTER	ISTICS	<u>✓</u> Flowing	water		Turbidity	
		Velocity			✓ ClearSlightly	turbidTurbid
		Fast	✓ Moderate		OpaqueStained	
		Slow			Other	
INORGANIC SUBSTRATE COMPO (should add up to 100%)			_	RGANIC SUBSTRATE COM loes not necessarily add u		
Substrate Type	Diame	ter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock			0	Detritue	sticks, wood, coarse	
Boulder	> 256 ı	mm (10")	0	Detritus	plant materials (CPOM)	5
Cobble	64-256 m	m (2.5"-10")	0	Muck-Mud	black, very fine organic	
Gravel	2-64 mm	(0.1"-2.5")	0	Waak Waa	(FPOM)	
Sand	0.06-2n	nm (gritty)	90			
Silt).06 mm	10	Marl	grey, shell fragments	
Clay	< 0.004 r	mm (slick)	0	_	<u> </u>	
		Predominant Surrounding Landuse Forest Commercial		i duse cial	Indicate the dominant type (Check one) Trees Shrubs	
		Field/Pasture Industrial			Grasses Herba	
WATERCHER		Agricultural Residential		tial	Floodplain Width	
WATERSHED FEATURES		Other:			Wide > 30ft <u>✓</u> Moderate 15-30ft	
		Canopy Cover			Narrow <16ft	
		Partly openPartly shaded		aded	Wetland Present ✓ Yes	No
		ShadedV Open Wetland ID W-B25 PEM				
					lominant species present	
AQUATIC VEGETATION		✓ Rooted emergent ✓ Rooted submergent — Rooted floating — Free Floating algae — Attached algae		tingFree floating		
		1 10atility	y alyae	Allacrieu algae	-	
		Stroom for	turo located is a bish	v dicturbed fi-	d Aroa proviously forests -	The area was
		recently cle	•	y aistaibea ile	ld. Area previously forested.	ine area was
MACROINVER	RTEBRATES	'				
OR OTHER WILDLIFE						
OBSERVED/C						
OBSERVATION NOTES	NS AND					



Photograph Direction $\underline{\text{NE}}$

STREAM ID S-B23	STREAM NAME UNT to Mill Creek
LAT 37.128843 LONG -80.133958	DATE 04/09/2015
CLIENT MVP	PROJECT NAME MVP
INVESTIGATORS C. Ansari, J. Rodriguez, M.	Whitten
FLOW REGIME Perennial Intermittent Lephemeral	WATER TYPE TNW RPW_✓ NRPW

Perenniai —		nt <u> — Epnem</u>	erai INVV —	RPW —	NRPW —	
		Estimate Measurements Top of Bank Width: 2.0 ft		Stream Erosion ✓ None Moderate	Ности	
					<u>▶ None</u> Woderate	пеачу
		Top of Bank Height:			Artificial, Modified or Char	nnelized
		LB <u>4.0</u>	ft RB <u>2.0</u>	<u>ft</u>	Yes _ <u>✓</u> No	
CHANNEL FE	ATURES	Water Dep	th: 2.00 in		Dam PresentYes _	∠ No
		Water Widt	h: 18.0 in			<u></u>
		High Water	Mark: <u>3.0 ft</u>		Sinuosity <u>~</u> Low	Medium High
		Flow Direct	tion: East		Gradient	
						Severe
					(0.5/100 ft (2 ft/100 ft)	,
		Water Pres	sent r, stream bed dry		Proportion of Reach Repre Morphology Types	esented by Stream
			ped moist		Riffle 70 % Run 30	%
FLOW		Standin	g water		Pool %	
CHARACTER	ISTICS	<u>✓</u> Flowing	water		Turbidity	
		Velocity			✓ Clear —Slightly	turbidTurbid
			✓ Moderate		OpaqueStained	
		Slow			Other	
INOR		STRATE CO add up to 10	MPONENTS 0%)	_	RGANIC SUBSTRATE CON loes not necessarily add u	
Substrate Type	Diame	ter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock			0	Detritue	sticks, wood, coarse	
Boulder	> 256	mm (10")	0	Detritus	plant materials (CPOM)	10
Cobble	64-256 m	m (2.5"-10")	10	Muck-Mud	black, very fine organic	
Gravel	2-64 mm	(0.1"-2.5")	20	WIUCK-WIUU	(FPOM)	
Sand	0.06-2n	nm (gritty)	60			
Silt	0.004-0	0.06 mm	10	Marl	grey, shell fragments	
Clay	< 0.004	mm (slick)	0			
			ant Surrounding Lar		Indicate the dominant type	
		Forest Commer ✓ Field/Pasture Industrial			✓ Trees Shrub Grasses Herba	
		Agricul		tial	_	occous
WATERSHED FEATURES		Other:			Floodplain Width Wide > 30ft Mode	rate 15-30ft
FEATURES					Narrow <16ft	rate 15-301t
		Canopy Cover <u>✓</u> Partly open Partly sh		aded		
		Shaded Open			Wetland Present <u>v</u> Yes Wetland ID	No
		Indicate th	e dominant type and			
AQUATIC VE	GETATION	Indicate the dominant type and record the dominant species presentRooted emergentRooted submergentRooted floatingFree floating				
		Floatin	g algae	Attached algae	e	
		Feature is	a tributary to S-B22.			
MACROINVER OR OTHER	RTEBRATES					
WILDLIFE OBSERVED/C	THER					
OBSERVATIO						
NOTES						
i		1				



Photograph Direction ESE

STREAM ID S-B25	STREAM NAME UNT to Mill Creek
LAT 37.128835 LONG -80.132768	DATE 04/10/2015
CLIENT MVP	PROJECT NAME MVP
INVESTIGATORS C.Ansari, J. Rodriguez, M. V	Vhitten
FLOW REGIME Perennial Intermittent ✓ Ephemeral	WATER TYPE TNW RPW_✓ NRPW

				Stream Erosion	Haarini	
			k Width: 5.0 ft		<u>✓</u> NoneModerate	Heavy
		Top of Bank Height:		Artificial, Modified or Char	nnelized	
		LB <u>3.0</u>	ft RB <u>3.0</u>	<u>ft</u>	<u>✓</u> YesNo	
CHANNEL FE	ATURES	Water Dept	h: 1.00 in		Dam PresentYes	∠ No
		Water Widt	h: <u>1.0 ft</u>		_ _	<u> </u>
		High Water	Mark: <u>2.0 in</u>		Sinuosity <u>v</u> Low	Medium High
		Flow Direct	ion: North		Gradient	
						Severe
		14/-4 D			`	(10 ft/100 ft)
		Water Pres No wate	sent r, stream bed dry		Proportion of Reach Repre Morphology Types	sented by Stream
		Stream			Riffle 15 % Run 15	%
FLOW		Standing	g water		Pool 70 %	
CHARACTER	ISTICS	<u></u> Flowing	water		Turbidity	
		Velocity			✓ ClearSlightly	turbidTurbid
		Fast Moderate			OpaqueStained	
		✓ Slow			Other	
INOR		STRATE CO		_	ORGANIC SUBSTRATE COMPONENTS	
	(should a	add up to 10	,	,	(does not necessarily add up to 100%)	
Substrate Type	Diame	ter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock			0	Detritus	sticks, wood, coarse	
Boulder		mm (10")	0	Boundo	plant materials (CPOM)	30
Cobble		m (2.5"-10")	0	Muck-Mud	black, very fine organic	
Gravel	2-64 mm	1 (0.1"-2.5")	0		(FPOM)	
Sand		nm (gritty)	10			
Silt		0.06 mm	70	Marl	grey, shell fragments	
Clay	< 0.004	mm (slick)	20			
		Predomina Forest	ant Surrounding Lan Commer	iduse rcial	Indicate the dominant type Trees Shrub	
		Field/Pa	astureIndustrial		Grasses Herba	
		Agricult			_	
WATERSHED FEATURES		Other:			Floodplain Width Wide > 30ft Moder	rate 15-30ft
1 2 11 51 12 5		Canopy Cover		✓ Narrow <16ft		
		Partly of		aded		
		Shaded			Wetland Present ∠Yes Wetland ID W-B25 PSS/PE	
			e dominant type and	d record the	dominant species present	
AQUATIC VEGETATION		Rooted Floating		Rooted subm Attached alga	ergentRooted float	ingFree floating
		171041111	y aiya c	Allacineu aiga	C	

MACROINVERTEBRATES
OR OTHER
WILDLIFE
OBSERVED/OTHER
OBSERVATIONS AND
NOTES

Information listed on this form represents the data collected in 2015 and 2019. The stream was revisited on 11/2/2019 and 9/9/20 and the presence of a stream channel and OHWM was confirmed. 2019 and 2020 surveys changed the flow regime to intermittent.

2019 notes:

OHWM width = 1ft OHWM depth = 1 inch

2015 notes: Highly disturbed from recent clear cut.



Photograph Direction South

Date: 04/10/2015

Comments: 2015 stream identification.



Photograph Direction South

Date: 11/02/2019

Comments: 2019 stream identification confirmation.

STREAM ID S-B21	STREAM NAME UNT to Mill Creek
LAT 37.128601 LONG -80.131051	DATE 04/09/2015
CLIENT MVP	PROJECT NAME MVP
INVESTIGATORS C. Ansari, J. Rodriguez, M.	Whitten
FLOW REGIME Perennial Intermittent Ephemeral	WATER TYPE TNW RPW_✓ NRPW

i eleliliai —		пі— прпеш		101 77 —	1414 W —	
			leasurements		Stream Erosion ✓ None Moderate	Heavy
		Top of Bank Width: 4.0 ft Top of Bank Height:			woderate .	ricavy
		· ·	ŭ		Artificial, Modified or Chan	nelized
CHANNEL FE	ATURES	LB 12.0 in RB 8.0 in Water Depth: 6.00 in			Yes <u></u> ✓ No Dam PresentYes _✓	<u>^</u> No
		Water Widt	Mark: 8.0 ft		Sinuosity Low _v_	Medium High
		Flow Direct				
		Flow Direct	ION: IW		Gradient ✓ Flat Moderate _	Severe
					<u> </u>	(10 ft/100 ft)
FLOW	ICTION		r, stream bed dry bed moist g water		Proportion of Reach Repre Morphology Types Riffle 60 % Run 30 Pool 10 %	sented by Stream
SHARASTERISTICS =		Velocity Fast _✓ ModerateSlow			Turbidity ✓ Clear — Slightly to — Opaque — Stained — Other — —	turbidTurbid
INORGANIC SUBSTRATE COMPONENTS			ORGANIC SUBSTRATE COMPONENTS			
Substrate	(should	uld add up to 100%)		`	does not necessarily add up	•
Type	Diame	eter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock				Detritus	sticks, wood, coarse	
Boulder		mm (10")		Detritus	plant materials (CPOM)	5
Cobble		ım (2.5"-10")	5	Muck-Mud	black, very fine organic	
Gravel		า (0.1"-2.5")	20		(FPOM)	
Sand		nm (gritty)	60			
Silt		0.06 mm	10	Marl	grey, shell fragments	
Clay	< 0.004	mm (slick)	5	duco	Indicate the dominant type	(Chaola ana)
-		Predominant Surrounding Landuse Forest Commercial Field/Pasture Industrial Agricultural Residential Other:		cial tial	Trees Shrub: Grasses Herbar Floodplain Width	S
Canopy CoverPartly open Partly sShaded Open		pen v Partly sha		Wetland Present <u>✓</u> Yes Wetland IDW-b24	No	
AQUATIC VE			d record the d Rooted subme Attached algae	ergentRooted float	ingFree floating	
					t. The feature runs parallel to bed from a recent clear cut of	

	This is a mapped NHD feature with fish present. The feature runs parallel to Bent Mountain Rd in the project corridor. The area is highly disturbed from a recent clear cut of the adjacent lands.
MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	



Photograph Direction $\underline{\text{NW}}$

STREAM ID S-H1	STREAM NAME Green Creek
LAT 37.12775 LONG -80.116772	DATE 03/28/2015
CLIENT MVP	PROJECT NAME MVP
INVESTIGATORS A. Grech, A. Stott, H. Heist	
FLOW REGIME Perennial ✓ Intermittent — Ephemeral —	WATER TYPE TNW — RPW ✓ NRPW —

Perennial -	Intermitte	nt Ephem	eral TNW	RPW –	NRPW	
		Estimate Measurements Top of Bank Width: 10 ft		Stream ErosionNone ✓ Moderate	Незуу	
					None _v woderate	i leavy
CHANNEL FEATURES		Top of Ban	•		Artificial, Modified or Char	nnelized
		LB <u>1.2</u>	ft RB <u>3.0</u>	<u>ft</u>	<u>✓</u> Yes No	
		Water Dep	th: 3.00 in		Dam Present _v Yes _	No
		Water Widt	h: <u>5.0 ft</u>		<u></u>	_'''
		High Water	Mark: <u>4.0 in</u>		Sinuosity Low	Medium High
		Flow Direct	tion: South		Gradient	
					Flat Moderate	
		Water Due			, , ,	(10 ft/100 ft)
		Water Pres No wate	r, stream bed dry		Proportion of Reach Repre Morphology Types	esented by Stream
		Stream I			Riffle 90 % Run	%
FLOW		Standin	•		Pool 10 %	
CHARACTER	ISTICS	<u> </u>	water		Turbidity	
		Velocity			✓ ClearSlightly	
		Fast	✓ Moderate		OpaqueStained	
		Slow			Other	
INOR			MPONENTS	_	RGANIC SUBSTRATE COM	
Cubatasta	(snoula a	add up to 10		,	loes not necessarily add u	<u>, , , , , , , , , , , , , , , , , , , </u>
Substrate Type	Diame	ter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock				Detritus	sticks, wood, coarse	
Boulder		mm (10")	30	Dounted	plant materials (CPOM)	50
Cobble	64-256 m	m (2.5"-10")	20	Muck-Mud	black, very fine organic	
Gravel	2-64 mm	(0.1"-2.5")	15		(FPOM)	
Sand		nm (gritty)	35			
Silt		0.06 mm		Marl	grey, shell fragments	
Clay	< 0.004 r	mm (slick)				
		Predomina ✓ Forest	ant Surrounding Lar Commer	iduse rcial	Indicate the dominant type ✓ Trees Shrub	
		Field/Pasture Industrial			GrassesHerba	
		AgriculturalResident		tial	_	
WATERSHED FEATURES		✓ Other:			Floodplain Width Wide > 30ft Mode	rate 15-30ft
		Canopy Cover			✓ Narrow <16ft	
		Partly openPartly sh		aded	aded Wetland Present Yes	
		ShadedOpen			Wetland PresentYes Wetland ID	<u>v</u> No
		Indicate th	e dominant type and	d record the d	Iominant species present	
AQUATIC VE	GETATION	Rooted emergentRooted submergentRooted floatingFree floating				
		Floatin	Floating algaeAttached algae			
		Logging are	ea on West Bank			
MACROINVER OR OTHER	KIEBKAIES					
WILDLIFE OBSERVED/C	THER					
OBSERVATIO						
NOTES						
I						



Photograph Direction South

Date: 03/28/2015

Comments: 2015 stream identification.



Photograph Direction South

Date: 11/05/2019

Comments: 2019 stream identification confirmation.

STREAM ID S-G26	STREAM NAME UNT to Green Creek				
LAT 37.127049 LONG -80.111388	DATE 04/04/2015				
CLIENT MVP	PROJECT NAME MVP				
INVESTIGATORS G. Stevens, A. Rodrian, S. Kelly					
FLOW REGIME Perennial Intermittent Ephemeral	WATER TYPE TNW RPW ✓ NRPW				

Type Diameter Sampling Reach Type Characteristic Sampling Area Bedrock Boulder > 256 mm (10") 30 Detritus Sticks, wood, coarse plant materials (CPOM) 75 Cobble 64-256 mm (2.5"-10") 20 Muck-Mud (FPOM) Sand 0.06-2mm (gritty) 15 Silt 0.004-0.06 mm Stick) 5 Predominant Surrounding Landuse — Commercial — Agricultural — Residential — Other: — Agricultural — Residential — Other: — Partly open — Partly shaded — Open Shaded — Open Wetland ID Indicate the dominant species present Characteristic Sampling Area Sticks, wood, coarse plant materials (CPOM) Tobal	Perenniai –	_ mermine	nt <u> </u>	erai INVV	RPW —	NRPW —		
Top of Bank Width: 7 ft Top of Bank Height: Loy of RB 4.0 ft Water Poeth: 3.00 in Water Width: 4.0 ft High Water Mark: 5.0 in Flow Direction: South Flow Direction: South Flow Direction: South Proportion of Reach Represented by Stream Morphology Types CHARACTERISTICS Water Present No water, stream bed dry Sizeam bed moist Standing water Velocity Fast Moderate Standing water Velocity Fast Moderate Stream Worphology Types Characteristics INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) Substrate Type Diameter Sampling Reach Substrate			F-414- B			Ota		
Top of Bank Height: LB 2.0 ft RB 4.0 ft Water Depth: 3.00 in Water Width: 4.0 ft High Water Mark: 5.0 in Flow Direction: South Flow Direction: South Flow Water Present No water, Stream bed dry Stream bed moist Stranding water FLOW CHARACTERISTICS Water Present No water, Stream bed dry Stream bed moist Stranding water Flowing water Flowing water Velocity Flat Simuosity Flow Indicate the dominant species and up to 100%) Water Present No water, Stream bed dry Stream bed moist Stream bed moist Stream bed moist Flowing water Flowing water Flowing water Flowing water Velocity Velocity Flowing water Fl								
CHANNEL FEATURES LB 2.0 ft RB 4.0 ft Yes			Top of Bank Width			Woderate		
Water North				· ·	. .		nnelized	
Water Wridth: 4.0 ft High Water Mark: 5.0 in Flow Direction: South Flow Direction: South Gradient			LB <u>2.0</u>	tt RB <u>4.0</u>	<u>rt</u>	Yes _ <u>✔</u> No		
High Water Mark: S.O in Flow Direction: South Gradient	CHANNEL FE	ATURES	Water Dep	th: 3.00 in		Nam Present Yes	∠ No	
FLOW Direction: South			Water Widt	h: 4.0 ft			<u></u>	
Water Present			High Water	Mark: <u>5.0 in</u>		Sinuosity <u>v</u> Low	Medium High	
Light Moderate Severe (2 ft/100 ft) (10 ft/100 ft)			Flow Direct	tion: South		Gradient		
Water Present						✓ FlatModerate _		
No water, stream bed dry Stream bed moist Standing water Pool 10 % Run 30 %								
Stream bed moist Riffle 60 % Run 30 %							esented by Stream	
Standing water Flowing water Turbidity Clear Commercial Clear Cle				•		Riffle 60 % Run 30 % Pool 10 %		
CHARACTERISTICS Flowing water Velocity Fast Slow Moderate Slow			_					
Velocity		ISTICS		-				
INORGANIC SUBSTRATE COMPONENTS (should add up to 100%) Substrate Type Diameter Type Bedrock Boulder Oble G4-256 mm (10") Sampling Reach Clay Forest Forest Forest Forest Forest Agricultural Agricultural Agricultural Agricultural Agricultural Sanded Open Floating algae AQUATIC VEGETATION INORGANIC SUBSTRATE COMPONENTS (does not necessarily add up to 100%) Composition in Substrate Type Characteristic Sticks, wood, coarse plant materials (CPOM) 75 Characteristic Sticks, wood, coarse plant materials (CPOM) 75 Detritus Detritus Detritus Detritus Plant materials (CPOM) 75 Detritus							turbid Turbid	
Slow				Moderate				
Should add up to 100% Composition in Substrate Type Diameter Sampling Reach Sampling Reach Type Characteristic Sampling Area				Woderate				
Should add up to 100% Composition in Substrate Type Diameter Sampling Reach Type Characteristic Sampling Area Sampling Reach Sampling Reach Sampling Reach Sampling Reach Sampling Reach Sampling Reach Sampling Area Sticks, wood, coarse plant materials (CPOM) 75								
Bedrock Sampling Reach Type Characteristic Sampling Area Bedrock Double Sampling Reach Type Sticks, wood, coarse plant materials (CPOM) 75 Cobble 64-256 mm (10") 30 Detritus Sticks, wood, coarse plant materials (CPOM) 75 Cobble 64-256 mm (2.5"-10") 20 Muck-Mud (FPOM) Black, very fine organic (FPOM) Sand 0.06-2mm (gritty) 15 Silt 0.004-0.06 mm Marl grey, shell fragments Clay < 0.004 mm (slick) 5 Predominant Surrounding Landuse Industrial Industrial Agricultural Residential Other: Canopy Cover Partly open Partly shaded Open Wetland Present Yes No Wetland ID AQUATIC VEGETATION Indicate the dominant type and record the dominant species present Rooted floating Free floating Industrial Rooted algae Confluences with SG27			-					
Sampling Reach Sticks, wood, coarse plant materials (CPOM) 75 Detritus		Diame	eter			Characteristic		
Boulder > 256 mm (10") 30 Detritus plant materials (CPOM) 75 Cobble 64-256 mm (2.5"-10") 20 Muck-Mud black, very fine organic (FPOM) Sand 0.06-2mm (gritty) 15 Silt 0.004-0.06 mm Marl grey, shell fragments Clay < 0.004 mm (slick) 5 Predominant Surrounding Landuse Fledd/Pasture Industrial Agricultural Residential Other: Canopy Cover Partly open Partly open Partly open Shaded Open Wetland ID AQUATIC VEGETATION MACROINVERTEBRATES OR OTHER OBSERVED/OTHER OBSERVED/				Sampling Reach	Туре		Sampling Area	
Gobble 64-256 mm (2.5"-10") 20		> 256	mm (10")	30	Detritus		75	
Gravel 2-64 mm (0.1"-2.5") 20 Muck-Mud (FPOM) Sand 0.06-2mm (gritty) 15 Silt 0.004-0.06 mm Arl grey, shell fragments Clay < 0.004 mm (slick) 5 Predominant Surrounding Landuse Forest Commercial Field/Pasture Industrial Agricultural Residential Other: Canopy Cover Partly open Partly open Partly shaded Shaded Open Wetland ID AQUATIC VEGETATION MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVED/OTHER OBSERVED/OTHER ORD ARROLL VEGETATION (Green) Marl (FPOM) Marl (FPOM) (Account type and record the dominant type (Check one) Floodplain type	Cobble		. ,	20		black very fine organic		
Sand 0.06-2mm (gritty) 15	Gravel				Muck-Mud			
Clay < 0.004 mm (slick) 5	Sand	0.06-2n	, , = 5					
WATERSHED FEATURES Predominant Surrounding Landuse	Silt	0.004-0	0.06 mm		Marl	grey, shell fragments		
WATERSHED FEATURES WATERSHED FEATURES WATERSHED FEATURES WATERSHED FEATURES WATERSHED FEATURES WATERSHED FEATURES Residential Other: Agricultural Residential Wide > 30ft Wide > 30ft Warrow <16ft Partly open Partly open Shaded Open Wetland Present Yes No No Wetland ID Indicate the dominant type and record the dominant species present Rooted emergent Rooted submergent Floating algae Attached algae Confluences with SG27 MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND	Clay	< 0.004	mm (slick)	5				
WATERSHED FEATURES Field/Pasture				ant Surrounding Lan	duse	Indicate the dominant type	(Check one)	
WATERSHED FEATURES Agricultural Residential Other: Partly open Partly open Partly shaded Open			_	_		ial <u>v</u> Trees Shrubs		
WATERSHED FEATURES Other:							iceous	
Canopy Cover Partly open Partly shaded Shaded Open Wetland Present Yes No Wetland ID Indicate the dominant type and record the dominant species present Rooted emergent Rooted submergent Rooted floating Free floating Floating algae Confluences with SG27 MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND	WATERSHED		— •	Resideni	liai			
AQUATIC VEGETATION Indicate the dominant type and record the dominant species present Rooted emergent Floating algae Confluences with SG27 MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND Wetland Present Yes V No Wetland ID Wetland Present Yes V No Wetland ID Free floating Attached algae Confluences with SG27	FEATURES		_ 00101.				rate 15-30ft	
AQUATIC VEGETATION Indicate the dominant type and record the dominant species present Rooted emergent Floating algae Confluences with SG27 MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND						<u>✓</u> Narrow <16ft		
AQUATIC VEGETATION Indicate the dominant type and record the dominant species present Rooted emergent Strategies Rooted emergent Strategies Rooted floating Free floating Attached algae Confluences with SG27 MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND			— · · · — ·			Wetland Present Yes	✓ No	
AQUATIC VEGETATIONRooted emergentRooted submergentRooted floatingFree floatingRooted floatingFree floating			Snade	SnadedOpen			_	
Confluences with SG27 MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND								
Confluences with SG27 MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND	AQUATIC VE	GETATION		_		<u> </u>	tingFree floating	
MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND			Floating	y algae	Allacried alga-			
MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND								
OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND			Confluence	Confluences with SG27				
OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND	MACROINVERTERRATES							
OBSERVED/OTHER OBSERVATIONS AND	OR OTHER	VIEDKAIES	'[
OBSERVATIONS AND								
NOTES	OBSERVATIO							
	NOTES							



Photograph Direction South

STREAM ID S-G27	STREAM NAME UNT to Green Creek				
LAT 37.127027 LONG -80.111013	DATE 04/04/2015				
CLIENT MVP	PROJECT NAME MVP				
INVESTIGATORS G. Stevens, A. Rodrian, S. Kelly					
FLOW REGIME Perennial ✓ Intermittent — Ephemeral —	WATER TYPE TNW — RPW ✓ NRPW —				

i eleliliai =		пі— Ерпсіп					
			_				
		Estimate Measurements Top of Bank Width: 7 ft				Stream Erosion	
		·	<u> </u>		None <u>v</u> Moderate Heavy		
		Top of Ban	· ·		Artificial, Modified or Char	nnelized	
		LB <u>2.0</u>	ft RB <u>4.0</u>	<u>ft</u> .	Yes _ <u>✓</u> No		
CHANNEL FE	ATURES	Water Dep	th: 3.00 in		Dem Bresent Voc. 4 No.		
		Water Widt	h: <u>4.0 ft</u>		Dam PresentYes _	<u> </u>	
		High Water	Mark: <u>5.0 in</u>		Sinuosity 🔽 Low	Medium High	
		Flow Direct	tion: Southwest		Gradient <u>✓</u> FlatModerateSevere (0.5/100 ft (2 ft/100 ft) (10 ft/100 ft)		
		Water Pres			Proportion of Reach Represented by Stream		
			r, stream bed dry oed moist		Morphology Types Riffle 60 % Run 30 %		
		Standing			Pool 10 % Rull 30 %		
FLOW CHARACTER	ISTICS	Flowing	•		. •		
CHARACTER	101100	_ `			Turbidity		
		Velocity ✓ Fast	Moderate		✓ Clear — Slightly — Opaque — Stained	turbidTurbid	
		Slow	iviouerate		Other		
INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)				(does not necessarily add up to 100%)			
Substrate	Diame	ter	% Composition in	Substrate	Characteristic	% Composition in	
Туре			Sampling Reach	Туре	Sampling Ar		
Bedrock Boulder	> 256	mm (10")	30	Detritus	sticks, wood, coarse plant materials (CPOM)	70	
Cobble		m (2.5"-10")				70	
Gravel		,	20	Muck-Mud	black, very fine organic (FPOM)		
Sand		nm (0.1"-2.5") 20 -2mm (gritty) 15			,		
Silt		0.06-2mm (gritty) 15 0.004-0.06 mm		Marl	grey, shell fragments		
Clay		4 mm (slick) 5			g. ey, enem mag.mem.e		
0.0,		. ,	ant Surrounding Lan	duse	Indicate the dominant type	(Check one)	
		✓ Forest	Commer		<u>✓</u> Trees Shrub	s	
		— Field/P			Grasses Herba	ceous	
WATERSHED		Agricult	ural Resident		Floodplain Width		
FEATURES		Other:			Wide > 30ft Moderate 15-30ft		
		Canopy Cover			✓ Narrow <16ft		
		Partly open Partly shaded			Wetland PresentYes <u>✓</u> No		
		Shaded	ShadedOpen		Wetland ID	<u>-</u>	
					lominant species present		
· · · · · · · · · · · · · · · · · · ·					ingFree floating		
		Floating	g algae	Attached algae			
		1					
Confluences with SG26 and into a culvert							
MACROINVERTEBRATES							
OR OTHER	VIEDKAIES	'					
WILDLIFE OBSERVED/OTHER							
OBSERVATION NOTES							
NOTES							



Photograph Direction SW