STREAM ID S-IJ18-INT			STREAM NA	STREAM NAME UNT to Sinking Creek			
CLIENT MVP			PROJECT N	PROJECT NAME MVP			
LAT 37.322078 LONG -80.552834				DATE 04/14/2016 COUNTY Giles			
INVESTIGATO	ORS E. Fo	ster, S. Lieb, J.	Niergarth				
WATER TYPE TNW RPW NRPW			FLOW REG Perennial	IME Intermiti	tent F Ephemeral]	
		Estimate Mea	asurements		Sinuosity Low	Medium High	
To To		Top of Bank Width: 4.0 ft Top of Bank Height: LB 2.0 ft RB 2.0 ft			Gradient Flat <u>✓</u> Mo	oderate Severe (10 ft/100 ft)	
		Water Depth:	2.00 in		<u>✓ None</u> Moderate	Heavy	
		Water Width:			Artificial, Modified or Chan	nelized	
CHANNEL FE	ATURES	_	Water Mark (Width):	20 ft	Yes _ <u>✓</u> No	0	
					Within Roadside Ditch		
		, ,	Water Mark (Height)	0.0_ III	Yes _ <u>✓</u> No	0	
		Flow Direction	n: Southwest	-	Culvert PresentYes		
					Culvert Material:		
					Culvert Size: in		
		Water Preser	-4			santad by Straam	
FLOW		No water, s Stream bed Standing v	stream bed dry d moist vater		Proportion of Reach Repre Morphology Types (Only ent Riffle 50 % Run 29 Pool 25 %	er if water present)	
	CHARACTERISTICS Velocity		<u>′</u> Moderate		Turbidity <u>✓</u> ClearSlightly t	turbidTurbid	
		Slow					
INOR		JBSTRATE CO		_	DRGANIC SUBSTRATE COM		
INOR Substrate	(shou	d add up to 10	0%) 100	_	does not necessarily add u	ıp to 100%)	
	(shou			(does not necessarily add u	ıp to 100%)	
Substrate Type Bedrock	(shoul	d add up to 100	9%) 100 % Composition in	Substrate Type	Characteristic sticks, wood, coarse	% Composition in Sampling Area	
Substrate Type	(shoul	d add up to 10	9%) 100 % Composition in	Substrate	Characteristic	% Composition in Sampling Area	
Substrate Type Bedrock	Dia	d add up to 100	9%) 100 % Composition in Sampling Reach	Substrate Type Detritus	Characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic	% Composition in Sampling Area	
Substrate Type Bedrock Boulder	Shoul Dia > 29 64-256 2-64 r	meter 66 mm (10") mmm (2.5"-10") mm (0.1"-2.5")	9%) 100 % Composition in Sampling Reach	Substrate Type	Characteristic sticks, wood, coarse plant materials (CPOM)	% Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble	Shoul Dia > 29 64-256 2-64 r	meter 66 mm (10") 7 mm (2.5"-10")	% Composition in Sampling Reach	Substrate Type Detritus	characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM)	% Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt	Shoul Dia	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 40 10	Substrate Type Detritus	Characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic	% Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand	Shoul Dia	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 40 10 10 20	Substrate Type Detritus Muck-Mud Marl	Characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments	% Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt	Shoul Dia	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	% Composition in Sampling Reach 40 10 10 20 20 Surrounding Landu — Commercia — 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	Shoul Dia	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 40 10 10 20 20 Surrounding Landu Commercial Industrial Residential Other:	Substrate Type Detritus Muck-Mud Marl	characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width Wide > 30ft	% Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay	Shoul Dia	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	% Composition in Sampling Reach 40 10 10 20 20 Surrounding Landu — Commercia — Industrial — Residential — Other:	Substrate Type Detritus Muck-Mud Marl	characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width Wide > 30ft	% 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) 4-0.06 mm 4 mm (slick) Predominant Forest Field/Past Agricultura ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 40 10 10 20 20 Commercial Commercial Residential Other:	Substrate Type Detritus Muck-Mud Marl	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	
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) 4-0.06 mm 4 mm (slick) Predominant Forest Field/Past Agricultura ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 40 10 10 20 20 Commercial Commercial Residential Other:	Substrate Type Detritus Muck-Mud Marl	characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width Wide > 30ft	% 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) 4-0.06 mm 4 mm (slick) Predominant Forest Field/Past Agricultura ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 40 10 10 20 20 Commercial Commercial Residential Other:	Substrate Type Detritus Muck-Mud Marl	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 $\underline{\text{NE}}$

STREAM ID S-PP22			STREAM NA	STREAM NAME UNT to Craig Creek			
CLIENT MVP				PROJECT NAME MVP			
LAT 37.321203 LONG -80.412889			9 STATE Virgin	STATE Virginia		COUNTY Craig	
INVESTIGATORS KP JC						DATE 10/29/2019	
WATER TYPE TNW	RPW •	FLOW REG Perennial	IME Intermi	ttent	Ephemeral		
CHANNEL FEATURES Water Depth: 0.25 Water Width: 1.0 Ordinary High Water			Vidth:4.0 ft leight: RB1.0 ft	A.0 ft RB1.0 ft in ft Mark (Width):2.0 ft Mark (Height):2.0 in hwest Gradient (0.5/10 Stream Erosio None Artificial, Modi Yes Within Roadsi Yes Culvert Preser Culvert Materia		lient Flat Moderate (0.5/100 ft)	∠ No
FLOW CHARACTERISTICS Water Present No water, stream Stream bed mois Standing water Flowing water Velocity Fast Mod Slow			tream bed dry I moist vater		Prop Morp Riffle Pool	ert Size:in ortion of Reach Repres bhology Types (Only ente 100 % Run % idity Clear Slightly tu Other	r if water present) %
INOR		JBSTRATE COI	-			-	
Substrate Type	Dia	meter	% Composition in Sampling Reach	Substrat Type	е	Characteristic	% Composition in Sampling Area
Bedrock Boulder	> 25	56 mm (10")	5	Detritus		sticks, wood, coarse plant materials (CPOM)	
Cobble Gravel	64-256	mm (2.5"-10") mm (0.1"-2.5")	30 40	Muck-Muc	t	black, very fine organic (FPOM)	
Sand		-2mm (gritty)	5			, ,	
Silt		4-0.06 mm	15	Marl		grey, shell fragments	
Clay			5				
					te 15-30ft		

MACROINVERTEBRATES/OTHER WILDLIFE OBSERVED OR OTHER NOTES AND OBSERVATIONS

S-PP22 was originally delineated in 2015 and then revisited in 2019. The stream was extended during the 2019 revisit. Channel flow as well as bed and bank characteristic through the ROW/LOD were observed at the time of survey. In 2015, the stream flow went subsurface and lost evidence of bed, bank, and OHWM characteristics within the ROW. After ROW clearing for pipeline construction, it appears the stream has expressed water flow on the surface and bed and bank characteristics have become more established downslope.

Stream Photograph Page

Stream ID <u>S-PP22</u> Date <u>10/29/2019</u>



Photograph Number __1__

Photograph Direction NE

Comments: Upstream



Photograph Number 2

Photograph Direction South

Comments: Downstream

STREAM ID W-0012	STREAM NAME UNT to Sinking Creek
LAT 37.318759 LONG -80.440048	DATE 08/27/2015
CLIENT MAM	PROJECT NAME MVP
INVESTIGATORS A. rodrian, L. sexton, C. Wh	arton
FLOW REGIME Perennial Intermittent Ephemeral	WATER TYPE TNW RPW NRPW <u>✓</u>

Perennial _	Intermitte	nt Ephem	eral 🖊 📑	ΓΝW	RPW —	NRPW 💆		
		Estimate Measurements				Stream Erosion		
		Top of Ban	k Width: 2.0) ft		NoneModerate	<u>✓</u> Heavy	
		Top of Bank Height:				Artificial, Modified or Cha	nnelized	
		LB <u>4.0</u>	<u>in</u> RI	3 <u>4.0</u>	<u>in</u>	Yes _ <u>✓</u> No		
CHANNEL FE	ATURES	Water Dep	th: 0.00 in					
CHANNEL FEATURES		Water Widt	th: 0.0 ft			Dam PresentYes _	<u>∠</u> No	
		High Water	Mark: 4.0	in		Sinuosity Low	Medium High	
		-	tion: West			Cuadiant		
		1 1011 21100				Gradient Flat _✓ Moderate	Severe	
						(0.5/100 ft (2 ft/100 ft)	(10 ft/100 ft)	
		Water Pres				Proportion of Reach Repre	esented by Stream	
		✓ No wate Stream	r, stream bed	ddry		Morphology Types Riffle 0 % Run 0	%	
		Standin				Pool 0 %	70	
FLOW CHARACTER	ISTICS	Flowing	•			•		
CHARACTER	131103	_ `				Turbidity ClearSlightly	turbid Turbid	
		Velocity Fast	Moderat	0		ClearSlightly Stained		
		Fasi Slow	Woderat	æ		Other		
INOR	GANIC SUB	STRATE CO	MPONENTS	:	0	RGANIC SUBSTRATE CON	MPONENTS	
		add up to 10		•	_	does not necessarily add u		
Substrate Type	Diame	ter	% Compo Sampling		Substrate Type	Characteristic	% Composition in Sampling Area	
Bedrock			0		Detritus	sticks, wood, coarse		
Boulder	> 256	mm (10")	25		Delilius	plant materials (CPOM)	20	
Cobble	64-256 m	m (2.5"-10")	25		Muck-Mud	black, very fine organic		
Gravel	2-64 mm	(0.1"-2.5")	35		maon maa	(FPOM)	0	
Sand	0.06-2n	nm (gritty)	15				0	
Silt		0.06 mm	0		Marl	grey, shell fragments		
Clay	< 0.004 ı	mm (slick)	0					
		Predomina ✓ Forest	ant Surroun	ding Lan Commer		Indicate the dominant type V Trees Shrub		
		Field/P	asture	Industrial			aceous	
		Agricul		Resident	tial	<u> </u>		
WATERSHED FEATURES	1	Other:			Floodplain Width Wide > 30ft Moderate 15-30ft			
		Conony C				✓ Narrow <16ft		
		Canopy Cover ✓ Partly open Partly shad		naded				
		Shaded Open				Wetland PresentYes _v_No Wetland ID		
		Indicate the dominant type and record the dominant species present						
AQUATIC VE	GETATION		l emergent		Rooted subme		tingFree floating	
		Floatin	g algae		Attached alga	e	_	
		Large culve	ert under rail	road tracl	ks, conflunce v	with S-C-21 off corridor		
MACROINVER OR OTHER	RTEBRATES							
WILDLIFE OBSERVED/C	THED							
OBSERVATIO								
NOTES								
I		1						

Stream Photograph Page

Stream ID W-0012



Photograph Direction East

Date: 08/27/2015

Comments: 2015 stream identification.



Photograph Direction ESE

Date: 10/29/2019

STREAM ID W-0013	STREAM NAME UNT to Sinking Creek
LAT 37.318873 LONG -80.441638	DATE 08/27/2015
CLIENT MVP	PROJECT NAME MVP
INVESTIGATORS A. rodrian, L. sexton, C. Wh	arton
FLOW REGIME Perennial Intermittent Ephemeral	WATER TYPE TNW RPW ⊻ NRPW

Perennial 4	Intermitte	nt Ephem	eral 🗹 TNW	RPW <u>~</u>	NRPW	
			Measurements		Stream Erosion	
		Top of Bank Width: 20.0 ft		<u>t</u>	NoneModerate	<u>✓</u> Heavy
		Top of Ban	k Height:		Artificial, Modified or Char	nnolizod
		LB 4.0	in RB 4.0	in	Yes V No	menzeu
			 th:_3.00 in			
CHANNEL FE	ATURES	·	th: 18.0 ft		Dam PresentYes	<u>∠</u> No
					Sinuosity Low _	Medium High
		_	r Mark: 4.0 in		Silidosity LOW	Mediaiii riigii
		Flow Direc	tion: North		Gradient	_
					Flat Moderate (0.5/100 ft) (2 ft/100 ft)	Severe (10 ft/100 ft)
		Water Pres	cont		Proportion of Reach Repre	` '
			r, stream bed dry		Morphology Types	sented by Stream
			bed moist		Riffle 90 % Run 0	%
FLOW		Standin	•		Pool 10 %	
CHARACTER	ISTICS	<u>✓</u> Flowing	water		Turbidity	
		Velocity			<u>✓</u> ClearSlightly	turbidTurbid
			✓ Moderate		OpaqueStained	
		Slow			Other	
INOR	GANIC SUB	STRATE CO	MPONENTS	C	RGANIC SUBSTRATE COM	// IPONENTS
	(should a	add up to 10	0%)	((does not necessarily add up to 100	
Substrate Type	Diame	ter	% Compositio Sampling Rea		Characteristic	% Composition in Sampling Area
Bedrock			0	Detritue	sticks, wood, coarse	
Boulder	> 256	mm (10")	40	Detritus	plant materials (CPOM)	30
Cobble	64-256 m	m (2.5"-10")	25	Muck-Mud	black, very fine organic	
Gravel	2-64 mm	(0.1"-2.5")	35	WIUCK-WIUU	(FPOM)	0
Sand	0.06-2n	nm (gritty)	0			
Silt	0.004-0	0.06 mm	0	Marl	grey, shell fragments	0
Clay	< 0.004 ı	mm (slick)	0			
		Predomina	ant Surrounding	Landuse	Indicate the dominant type	(Check one)
		<u>✓</u> Forest		nmercial	<u>✓</u> Trees Shrub	
		— Field/P			Grasses Herba	aceous
WATERSHED		Agriculi Other:	.urai Resi	idential	Floodplain Width	
FEATURES		_ 00101.				rate 15-30ft
		Canopy Co			✓ Narrow <16ft	
		<u>✓</u> Partly o	: —	y shaded	aded Wetland PresentYes _✓ No Wetland ID	
		Shaded	Ope	n		
					dominant species present	
AQUATIC VE	GETATION		d emergent	Rooted subm	<u> </u>	tingFree floating
		Floatin	g algae	Attached alga	16	
MACROINVER OR OTHER	RTEBRATES					
WILDLIFE	THE					
OBSERVED/C						
NOTES						

Stream Photograph Page

Stream ID W-0013



Photograph Direction West

Date: 08/27/2015

Comments: 2015 stream identification.



Photograph Direction SSE

Date: 10/29/2019

STREAM ID S-0014	STREAM NAME UNT to Sinking Creek
LAT 37.318549 LONG -80.441615	DATE 08/27/2015
CLIENT MVP	PROJECT NAME MVP
INVESTIGATORS A. rodrian, L. sexton, C. Wh	arton
FLOW REGIME	WATER TYPE TNW RPW NRPW
Perennial — Intermittent Ephemeral	TNVV — RPVV — NRPVV —

relellillal =		nt <u> </u>	erai rivvv	RPW —	NRPW —	
		F-4'4- 1			Ota	
CHANNEL FEATURES		Estimate Measurements Top of Bank Width: 4.0 ft			Stream Erosion _v_NoneModerateHeavy	
		Top of Bank Height:			woderate	ricavy
			ŭ		Artificial, Modified or Char	nnelized
		LB <u>1.0</u>	ft RB <u>1.0</u>	<u>ft</u>	Yes No	
			th: 2.00 in		Dam PresentYes _	✓ No
		Water Widt	h: 4.0 ft			
		High Water	Mark: <u>4.0 in</u>		Sinuosity <u>v</u> Low	Medium High
		Flow Direct	tion: S		Gradient	
					✓ FlatModerate _	Severe
					, , ,	(10 ft/100 ft)
		Water Pres	sent r, stream bed dry		Proportion of Reach Representation Morphology Types	esented by Stream
			ped moist		Riffle 65 % Run 30	%
		Standing			Pool 5 %	
FLOW CHARACTER	ISTICS	<u>✓</u> Flowing	-			
					Turbidity <u>✓</u> ClearSlightly	turbidTurbid
		Velocity <u>✓</u> Fast	Moderate		OpaqueStained	
		Slow	Moderate		Other	
INOR	GANIC SUB	STRATE CO	MPONENTS	0	RGANIC SUBSTRATE COM	/PONENTS
		add up to 10			does not necessarily add u	
Substrate Type	Diame	eter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock			10		sticks, wood, coarse	
Boulder	> 256	mm (10")	40	Detritus	plant materials (CPOM)	30
Cobble	64-256 m	ım (2.5"-10")	25	Muck-Mud	black, very fine organic	
Gravel	2-64 mm	า (0.1"-2.5")	25	Wack-Wad	(FPOM)	0
Sand	0.06-2r	nm (gritty)	0			0
Silt	0.004-0	0.06 mm	0	Marl	grey, shell fragments	0
Clay	< 0.004	mm (slick)	0			
			ant Surrounding Lar		Indicate the dominant type	
		Forest Field/Pa	Commer asture Industria		✓ Trees Shrub Grasses Herba	is iceous
		— Agricult	- · · · · · · - · · · · · · · · · · · ·		Grassesrierba	iceous
WATERSHED		Other:			Floodplain Width	45 006
FEATURES					Wide > 30ft Mode ✓ Narrow <16ft	rate 15-30ft
		Canopy Cover		adod	- Narrow Tolt	
		Partly open Partly shaded ✓ Shaded Open			Wetland PresentYes _v_No	
					Wetland ID	
AOUATIC VE	CETATION			d record the or Rooted submo	dominant species present	ting Free floating
AQUATIC VE	SETATION			Attached alga	<u> </u>	rree lloating
				, ittaoou u.gu		
MACROINVER	TERRATES					
OR OTHER						
WILDLIFE OBSERVED/C						
OBSERVATIO NOTES	NS AND					



Photograph Direction South

STREAM ID	S-IJ17		STREAM NA	STREAM NAME UNT to Sinking Creek			
CLIENT MVP			PROJECT N	PROJECT NAME MVP			
LAT 37.31848	85 L (ONG -80.54782	7 DATE 04/14/	/2016	COUNTY Giles		
INVESTIGATO	ORS E. Fo	ster, S. Lieb, J.	Niergarth				
WATER TYPE	RPW [NRPW	FLOW REG Perennial	IME Intermit	tent Ephemeral	V	
		Estimate Me	asuraments		Sinuosity Low	Medium High	
CHANNEL FEATURES		Estimate Measurements Top of Bank Width:8.0 ft Top of Bank Height: LB4.0 ft		ft	Gradient Flat Moderate Severe (0.5/100 ft) (2 ft/100 ft) (10 ft/100 ft) Stream Erosion None Moderate Heavy Artificial, Modified or Channelized Yes No		
		Flow Direction: Southeast			YesYes Culvert PresentYes Culvert Material:in	<u>✓</u> No	
FLOW CHARACTERISTICS Water Present No water, stree Stream bed m Standing water Flowing water Velocity Fast Slow			stream bed dry d moist vater		Proportion of Reach Represented by Stream Morphology Types (Only enter if water present) Riffle % Run % Pool % Turbidity ClearSlightly turbidTurbidOther		
INOR	RGANIC SI	JBSTRATE CO	MPONENTS	(ORGANIC SUBSTRATE CO	OMPONENTS	
	(shoul	d add up to 10	, ,		(does not necessarily add up to 100%)		
Substrate Type	Dia	meter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area	
Bedrock				Detritus	sticks, wood, coarse		
Boulder	> 25	6 mm (10")	30	Detilius	plant materials (CPOI	⁽¹⁾ 40	
Cobble	64-256	mm (2.5"-10")	30				
 		, ,	- 00	Muck-Mud	black, very fine organ	ic	
Gravel	2-64 r	nm (0.1"-2.5")	30	Muck-Mud	black, very fine organ (FPOM)	ic	
Gravel Sand	2-64 r 0.06	nm (0.1"-2.5") -2mm (gritty)			(FPOM)		
Gravel Sand Silt	2-64 r 0.06- 0.00	nm (0.1"-2.5") -2mm (gritty) 4-0.06 mm	30	Muck-Mud Marl			
Gravel Sand	2-64 r 0.06 0.00 < 0.00	nm (0.1"-2.5") -2mm (gritty) 4-0.06 mm 04 mm (slick)	30 10 Surrounding Landu Commercia ure Industrial al Residential Other:	Marl Ise	grey, shell fragments		
Gravel Sand Silt Clay WATERSHED FEATURES	2-64 r 0.06 0.00 < 0.00	nm (0.1"-2.5") -2mm (gritty) 4-0.06 mm 4 mm (slick) Predominant Forest Field/Past Agricultura ROW Canopy Cove Open Shaded	30 10 Surrounding Landu Commercia Industrial Residential Other:	Marl use	grey, shell fragments Floodplain Width Wide > 30ft Mod	erate 15-30ft	



Photograph Direction East

STREAM ID S-IJ16-b			STREAM NA	STREAM NAME UNT to Sinking Creek			
CLIENT MVP				PROJECT NAME MVP			
LAT 37.3183	36 <u>L</u>	ONG -80.54762			COUNTY Giles		
INVESTIGATO	ORS E. Fo	oster, S. Lieb, J.	Niergarth				
WATER TYPE	WATER TYPE TNW RPW NRPW			IME Intermit	tent Ephemeral		
		Estimate Me	asurements		Sinuosity Low 🗸	Medium High	
		Top of Bank Width: <u>10.0</u> ft Top of Bank Height:			Gradient Flat Moderate Sever (0.5/100 ft) (2 ft/100 ft) (10 ft/100 ft)		
		LB <u>6.0</u> f Water Depth:		11	Stream Erosion ✓ None Moderate	Heavy	
					Artificial, Modified or Chan	_ ,	
CHANNEL FE	ATURES	Water Width:		50 #	Yes ✓ No		
		, ,	Water Mark (Width):		Within Roadside Ditch		
		, ,	Water Mark (Height)): <u>24.0</u> In	Yes Villin Roadside Ditch)	
		Flow Direction	n: Southeast	-	Culvert PresentYes		
					Culvert Material:		
					Culvert Size: in		
		Water Prese	nt		Proportion of Reach Repres	sented by Stream	
			stream bed dry		Morphology Types (Only enter		
		Stream bed	d moist		Riffle % Run	%	
FLOW		Standing v			Pool %		
CHARACTER	ISTICS	Flowing water			Turbidity		
		Velocity			ClearSlightly turbidTurbid		
		Fast	_ Moderate		Other		
		Slow					
F		_					
INOR	-	L —— UBSTRATE CO ld add up to 10	-		ORGANIC SUBSTRATE COM		
INOR Substrate	(shou	ld add up to 10	-		(does not necessarily add u	p to 100%)	
	(shou		0%) 100		(does not necessarily add u	p to 100%)	
Substrate Type Bedrock	(shou	ld add up to 10 meter	0%) 100 % Composition in	Substrate Type	Characteristic sticks, wood, coarse	p to 100%) % Composition in	
Substrate Type Bedrock Boulder	(shou	meter 56 mm (10")	0%) 100 % Composition in Sampling Reach	Substrate	Characteristic	p to 100%) % Composition in	
Substrate Type Bedrock Boulder Cobble	Dia > 29	meter 56 mm (10") 6 mm (2.5"-10")	% Composition in Sampling Reach 50 25	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	Shou Dia	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5")	% Composition in Sampling Reach 50 25 15	Substrate Type Detritus	Characteristic sticks, wood, coarse plant materials (CPOM)	p to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand	Shou Dia > 29 64-256 2-64 r 0.06	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty)	% Composition in Sampling Reach 50 25	Substrate Type Detritus Muck-Mud	Characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM)	p to 100%) % Composition in Sampling Area	
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	% Composition in Sampling Reach 50 25 15	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	dd add up to 10 meter 56 mm (10") 6 mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 04-0.06 mm 04 mm (slick)	% Composition in Sampling Reach 50 25 15	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	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt	Shou Dia > 20 64-256 2-64 r 0.06 0.00 < 0.00	dd add up to 10 meter 56 mm (10") 6 mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 04-0.06 mm 04 mm (slick)	% Composition in Sampling Reach 50 25 15 10 Surrounding Landu — Commerciature — Industrial	Substrate Type Detritus Muck-Mud Marl	Characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width	p to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay	Shou Dia > 20 64-256 2-64 r 0.06 0.00 < 0.00	### Total Process ### Total Pr	% Composition in Sampling Reach 50 25 15 10 surrounding Landu — Commerciature — Industrial — Residential — Other:	Substrate Type Detritus Muck-Mud Marl	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	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay	Shou Dia > 20 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) 04-0.06 mm 04 mm (slick) Predominant Forest Field/Past Agricultur ROW Canopy Cove Open	% Composition in Sampling Reach 50 25 15 10 surrounding Landu — Commerciature — Industrial — 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	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay	Shou Dia > 20 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) 04-0.06 mm 04 mm (slick) Predominant Forest Field/Past Agricultur ROW Canopy Cove	% Composition in Sampling Reach 50 25 15 10 Surrounding Landu — Commercia — Industrial — 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	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay	Shou Dia > 20 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) 04-0.06 mm 04 mm (slick) Predominant Forest Field/Past Agricultur ROW Canopy Cove Open	% Composition in Sampling Reach 50 25 15 10 Surrounding Landu — Commercia — Industrial — 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 50	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Shou 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 Agricultur ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 50 25 15 10 Surrounding Landu Commercial Industrial A Residential Other: Partly shad	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 50 ate 15-30ft	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Shou 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 Agricultur ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 50 25 15 10 Surrounding Landu Commercial Industrial A Residential Other: Partly shad	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 50 ate 15-30ft	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Shou 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 Agricultur ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 50 25 15 10 Surrounding Landu Commercial Industrial A Residential Other: Partly shad	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 50 ate 15-30ft	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Shou 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 Agricultur ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 50 25 15 10 Surrounding Landu Commercial Industrial A Residential Other: Partly shad	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 50 ate 15-30ft	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Shou 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 Agricultur ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 50 25 15 10 Surrounding Landu Commercial Industrial A Residential Other: Partly shad	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 50 ate 15-30ft	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Shou 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 Agricultur ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 50 25 15 10 Surrounding Landu Commercial Industrial A Residential Other: Partly shad	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 50 ate 15-30ft	



Photograph Direction SE

STREAM ID S-PP21	STREAM NAME UNT to Craig Creek
LAT 37.31716709 LONG -80.40925493	DATE 10/17/2015
CLIENT MVP	PROJECT NAME MVP
INVESTIGATORS D. Hadersbeck, T. Woods, I	D. McCollough
FLOW REGIME Perennial ✓ Intermittent Ephemeral —	WATER TYPE TNW — RPW ✓ NRPW —

Perenniai -	<u> </u>	nt Ephem	eral TNW	RPW <u> </u>	NRPW	
	1	Father etc.	A		Otunama Functions	
CHANNEL FEATURES			/leasurements k Width: 4 ft		Stream ErosionNone _✓ Moderate Heavy	
		Top of Bank Height:				-
		LB 0.5 ft RB 0.5 ft		r.	Artificial, Modified or Char	nnelized
				<u></u>	Yes _ <u>✓</u> No	
		•	th: 3.00 in		Dam PresentYes _	<u>∕</u> No
		Water Widt			Sinuosity Low _	Medium ✓ High
		ŭ	Mark: 10.0 in			Wedium riigii
		Flow Direct	tion: Southwest		Gradient Flat _✓ Moderate _	Sovere
						(10 ft/100 ft)
		Water Pres			Proportion of Reach Repre	esented by Stream
			r, stream bed dry		Morphology Types Riffle 10 % Run 70	%
		Standing	bed moist		Pool 20 %	70
FLOW CHARACTER	ISTICS	Flowing			20	
OHARAGIER	101100				Turbidity <u>✓</u> ClearSlightly	turbidTurbid
		Velocity Fast	Moderate		Opaque Stained	
		✓ Slow			Other	
INOR	GANIC SUB	BSTRATE COMPONENTS		ORGANIC SUBSTRATE COMPONENTS		IPONENTS
	(should a	dd up to 10	i -	,	does not necessarily add u	
Substrate Type	Diame	ter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock				Detritus	sticks, wood, coarse	
Boulder		mm (10")	10		plant materials (CPOM)	70
Cobble		m (2.5"-10")	20	Muck-Mud	black, very fine organic	
Gravel		(0.1"-2.5")	30		(FPOM)	
Sand Silt		nm (gritty) 0.06 mm	20	Marl	grov shall fragments	
Clay		nm (slick)	20	IVIAII	grey, shell fragments	
Olay	10.0041	` ′	l ant Surrounding Lan	lduse	Indicate the dominant type	(Check one)
		<u>✓</u> Forest	Commer		<u>✓</u> Trees Shrub	
			astureIndustrial		GrassesHerba	ceous
WATERSHED		Agricult Other:	tural Resident		Floodplain Width	
FEATURES		00101.		Wide > 30ft <u>✓</u> Moderate 15-30f		rate 15-30ft
		Canopy Cover		Narrow <16ft		
		<u>✓</u> Partly of Shaded	<u> </u>		Wetland PresentYes _v No	
		_			Wetland ID	
AQUATIC VE	SETATION			d record the d Rooted subme	lominant species present ergent Rooted float	ing Free floating
AGOANOVE	SEIAHON	Floating	· —	Attached algae	_	
L						
		The stream	was visited by the U	SACE in 2017.	. The presence of a stream c	hannel and an
		OHWM was	s confirmed.			
MACROINVER OR OTHER	RTEBRATES					
WILDLIFE	THER					
OBSERVED/C						
NOTES						



Photograph Direction South

STREAM ID S-PP20	STREAM NAME UNT to Craig Creek		
LAT 37.3165383 LONG -80.4086392	DATE 10/17/2015		
CLIENT MVP	PROJECT NAME MVP		
INVESTIGATORS D. Hadersbeck, T. Woods, I	D. McCollough		
FLOW REGIME Perennial ✓ Intermittent Ephemeral —	WATER TYPE TNW — RPW ✓ NRPW —		

i cicililai =	intermitte	пс— приспи	erar rivv —	1XI VV —		
		Estimate N	/leasurements		Stream Erosion	
		_		✓ None Moderate	Heavy	
		Top of Ban				
		LB 1.0	· ·	ft	Artificial, Modified or Char	nnelized
			th: 4.00 in	<u></u>	Yes _ <u>✓</u> No	
CHANNEL FE	CHANNEL FEATURES		th: 4.00 III		Dam PresentYes _	<u>✓</u> No
			Mark: 10.0 in		Sinuosity Low 🗸	Medium <u></u> ✓ High
		J	tion: Southwest		<i>,</i>	
		Flow Direct	IIOn: Oodinwest		Gradient Flat _ ✓ Moderate _	Severe
					(0.5/100 ft (2 ft/100 ft)	(10 ft/100 ft)
		Water Pres			Proportion of Reach Repre	esented by Stream
			r, stream bed dry		Morphology Types Riffle 10 % Run 70	%
		Standing	bed moist g water		Pool 20 %	70
FLOW CHARACTER	ISTICS	Flowing				
OHARAGIER	101100				Turbidity <u>✓</u> ClearSlightly	turbidTurbid
		Velocity Fast	Moderate		OpaqueStained	
		✓ Slow	Moderate		Other	
INOR	GANIC SUB	STRATE CO	MPONENTS	0	RGANIC SUBSTRATE CON	// IPONENTS
	(should a	add up to 10	0%)	(0	does not necessarily add u	p to 100%)
Substrate Type	Diame	ter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock				Detritus	sticks, wood, coarse	
Boulder		mm (10")	10	Botilitao	plant materials (CPOM)	70
Cobble		m (2.5"-10")	20	Muck-Mud	black, very fine organic	
Gravel		1 (0.1"-2.5")	30		(FPOM)	
Sand		nm (gritty)	20			
Silt		0.06 mm	20	Marl	grey, shell fragments	
Clay	< 0.004	mm (slick)	nt Curreunding Lar	duas	Indicate the deminent type	(0) (
		Predominant Surrounding Land			Indicate the dominant type ✓ Trees Shrub	
				I	Grasses Herba	iceous
WATERSHED				tial	Floodplain Width	
FEATURES		Other:		Wide > 30ft Moderate 15-3		rate 15-30ft
		Canopy Co	over		Narrow <16ft	
		<u>✓</u> Partly openPartly sh		haded Wetland Present Yes _		∠ No
		Shaded	OpenOpen		Wetland ID	<u>-</u>
					lominant species present	
AQUATIC VEGETATION		Rooted emergentRooted submergentRooted floatingFree floating Floating algae Attached algae				
		FIOALITY	y alyae	Attached algae		
					· · ·	
MACDOINVEDTERDATES			n was revisited by the sconfirmed.	USACE IN 201	17. The presence of a stream	i channel and
			o comminde.			
OR OTHER						
WILDLIFE OBSERVED/C						
OBSERVATION NOTES	NS AND					



Photograph Direction SW

STREAM ID S-RR13	STREAM NAME Craig Creek
LAT 37.314425 LONG -80.40287336	DATE 09/14/2015
CLIENT MVP	PROJECT NAME MVP
INVESTIGATORS J. Cook, R. Keyser, D. McC	ullough
FLOW REGIME Perennial ✓ Intermittent — Ephemeral —	WATER TYPE TNW — RPW ✓ NRPW —

releliliai =		nt <u> </u>	erai INVV —	RPW —	NRPW —	
	1	Estimate *	lo oo uu o mas t		Streem Freeier	
			/leasurements k Width: 35 ft		Stream Erosion None Moderate Heavy	
		Top of Bank Height:				
CHANNEL FEATURES			· ·	in	Artificial, Modified or Char	nnelized
		LB 48.0		<u>ın</u>	Yes No	
		·	th: 3.00 in		Dam PresentYes _	✓ No
		Water Widt				
		Ŭ	Mark: <u>9.0 in</u>		Sinuosity Low	Medium <u>V</u> High
		Flow Direct	tion: Northeast		Gradient	
						Severe (10 ft/100 ft)
		Water Pres	cont		Proportion of Reach Repre	,
			r, stream bed dry		Morphology Types	ssented by Stream
		Stream I	ped moist		Riffle 35 % Run 30	%
FLOW		Standing	-		Pool 40 %	
CHARACTER	ISTICS	<u>✓</u> Flowing	water		Turbidity	
		Velocity			✓ Clear — Slightly	
		Fast	Moderate		OpaqueStained	
		<u>✓</u> Slow			Other	
INOR	INORGANIC SUBSTRATE COMPONENTS (should add up to 100%)				RGANIC SUBSTRATE COM does not necessarily add u	
Substrate Type	Diame	ter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock				Detritus	sticks, wood, coarse	
Boulder	> 256	mm (10")	15	Delilius	plant materials (CPOM)	40
Cobble	64-256 m	m (2.5"-10")	35	Muck-Mud	black, very fine organic	
Gravel	2-64 mm	(0.1"-2.5")	30	Widok Wida	(FPOM)	
Sand	0.06-2n	nm (gritty)	20			
Silt	0.004-0	0.06 mm		Marl	grey, shell fragments	
Clay	< 0.004 i	mm (slick)				
			ant Surrounding Lan		Indicate the dominant type	
		Forest Field/Pa	Commer asture Industrial		✓ Trees Shrub Grasses Herba	is iceous
		— Agricult			<u> </u>	
WATERSHED FEATURES		✓ Other:			Floodplain Width ✓ Wide > 30ft Mode	rate 15-30ft
TEATOREO		00			Narrow <16ft	rate 13-301t
		Canopy Co ✓ Partly o	o ver open Partly sh	aded	_	
		Shaded Open			Wetland PresentYes Wetland ID	<u>✓</u> No
			a deminant tune en	d voocvel the e		
AQUATIC VE	GETATION			Rooted subme	dominant species present ergent Rooted float	ting Free floating
gomio redelimion		Floatin	· —	Attached alga	<u> </u>	<u> </u>
MACROINVERTEBRATES OR OTHER WILDLIFE						
		;				
OBSERVED/C						
NOTES	III AIID					



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

STREAM ID S-HH18	STREAM NAME UNT to Craig Creek		
LAT 37.31421359 LONG -80.39862398	DATE 10/17/2015		
CLIENT MVP	PROJECT NAME MVP		
INVESTIGATORS S Ryan, A Larson, M Whitte	n, A Carrano		
FLOW REGIME Perennial — Intermittent Ephemeral —	WATER TYPE TNW — RPW ✓ NRPW —		

		Estimate N	/leasurements		Stream Erosion	
CHANNEL FEATURES		Top of Bank Width: 6 ft			<u>✓</u> None Moderate	Heavy
		Top of Bank Height:			Artificial, Modified or Char	nelized
		LB <u>3.0</u>	ft RB <u>2.0</u>	<u>ft</u>	Yes ✓ No	
		Water Dep	th: 2.00 in			
CHANNEL FE	ATURES		th: 2.0 ft		Dam PresentYes _	<u>∕</u> No
			Mark: 2.0 in		Sinuosity Low _	Medium ✓ High
			tion: Northeast			— °
		Flow Direct	IIOII. Itoriiiodot		Gradient Flat _✓ Moderate _	Severe
						(10 ft/100 ft)
		Water Pres			Proportion of Reach Repre	sented by Stream
			r, stream bed dry		Morphology Types Riffle 10 % Run 60	%
			bed moist		Riffle 10 % Run 60 Pool 30 %	%
FLOW		Standing			1 001 30 /0	
CHARACTER	ISTICS	T lowing	Water		Turbidity	
		Velocity			✓ Clear —Slightly	
		Fast ✓ Slow	Moderate		OpaqueStainedOther	
INOR		STRATE CO add up to 10	-		PRGANIC SUBSTRATE COMPONENTS does not necessarily add up to 100%)	
Substrate	Diama	otor	% Composition in	Substrate	Characteristic	% Composition in
Туре	Diame	ilei	Sampling Reach	Туре	oe Characteristic	Sampling Area
Bedrock			60	Detritus	sticks, wood, coarse	
Boulder		mm (10")	5		plant materials (CPOM)	10
Cobble		m (2.5"-10")	20	Muck-Mud	black, very fine organic	
Gravel		า (0.1"-2.5")	15		(FPOM)	
Sand		nm (gritty)				
Silt		0.06 mm		Marl	grey, shell fragments	
Clay	< 0.004	mm (slick)				
			ant Surrounding Lan		Indicate the dominant type ✓ Trees Shrub	
		Forest Commerc			Grasses Herba	
		— Agricult		tial	_	00000
WATERSHED FEATURES		Other:		Floodplain Width Wide > 30ft Moderate 1		rato 15 30ft
TEATORES		Canopy Cover Partly open Partly shaded			Narrow <16ft	rate 13-301t
				aded		
		Shaded Open				<u>✓</u> No
					Wetland ID	
AQUATIC VEGETATION		Indicate the dominant type and record the dominant species present Rooted emergent Rooted submergent Rooted floating Free floating				ing Free floating
AQUATIC VEGETATION		Rooted emergentRooted submergentRooted floatingFree floating Floating algae Attached algae				
			<u> </u>			
		Stream join	ns S-HH17 2015 cor	mments		
		1			ne presence of a stream char	nnel and OHWM
MACROINVER	RTEBRATES				,	
OR OTHER WILDLIFE						
OBSERVED/C						
OBSERVATIONS AND NOTES						



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

STREAM ID S-RR14	STREAM NAME UNT to Craig Creek		
LAT 37.31398483 LONG -80.40243974	DATE 09/14/2015		
CLIENT MVP	PROJECT NAME MVP		
INVESTIGATORS J. Cook, R. Keyser, D. McC	ullough		
FLOW REGIME Perennial — Intermittent— Ephemeral ✓	WATER TYPE TNW RPW NRPW ✓		

Perennial _	Intermitte	nt Ephem	eral 🗹 🛮 TNW .	RPW	NRPW 🚣	
			Measurements		Stream Erosion	
			k Width: 7 ft		NoneModerate	Heavy
		Top of Ban	-		Artificial, Modified or Cha	nnelized
		LB <u>2.0</u>	ft RB <u>18.</u> 0	<u>0 in</u>	Yes No	
CHANNEL FE	ATURES	Water Dep	th: <u>0.00 in</u>		Dam PresentYes	No
			Water Width: 0.0 ft		Daili Flesellt les _	<u>v</u> No
		High Water	r Mark: <u>3.0 in</u>		Sinuosity <u>~</u> Low	Medium <u>v</u> High
		Flow Direct	tion: North		Gradient	
					✓ FlatModerate .	Severe
					(0.5/100 ft (2 ft/100 ft)	(10 ft/100 ft)
		Water Pres	sent er, stream bed dry		Proportion of Reach Reproduction Morphology Types	esented by Stream
			bed moist		Riffle % Run	%
EL OW		Standing			Pool %	
FLOW CHARACTER	ISTICS	Flowing	water		Turbidity	
		Velocity			Turbidity ClearSlightly	turbidTurbid
		•	Moderate		OpaqueStained	
		Slow			Other	
INORGANIC SUBSTRATE COMPO				_	RGANIC SUBSTRATE CO	
	(should a	add up to 10			does not necessarily add u	1
Substrate Type	Diame	ter	% Composition Sampling Rea		Characteristic	% Composition in Sampling Area
Bedrock				Detritus	sticks, wood, coarse	
Boulder		mm (10")	10		· · · · · ·	
Cobble		m (2.5"-10")	30	Muck-Mud	black, very fine organic	
Gravel		(0.1"-2.5")	35		(FPOM)	
Sand		nm (gritty)	25			
Silt		0.06 mm		Marl	grey, shell fragments	
Clay	< 0.004 i	mm (slick)		l	In dia static and a major and them.	
		✓ Forest	ant Surrounding Com	Landuse mercial	Indicate the dominant type ✓ Trees Shrub	
		Field/P				aceous
WATERCHER		Agricult	tural Resid	dential	Floodplain Width	
WATERSHED FEATURES	'	Other: Canopy Cover Partly open Partly shaded				erate 15-30ft
					✓ Narrow <16ft aded Wetland Present Yes ✓ No	
				/ shaded		
		<u></u> ✓ Shaded	Oper	1	Wetland ID	<u> </u>
Indicate f					dominant species present	
AQUATIC VEGETATION _			d emergent	Rooted subm	_	tingFree floating
		Floating	g algae	Attached alga	e	
		T-, .			0.7	, , , , , , , , , , , , , , , , , , , ,
MACDOINIVEDTEDDATES		The stream was confirm		d extended in 201	6. The presence of a stream	channel and OHWM
			neu.			
OR OTHER						
WILDLIFE OBSERVED/C						
OBSERVATION NOTES	ONS AND					



Photograph Direction North

STREAM ID S-006	STREAM NAME Craig Creek
LAT 37.313034 LONG -80.405281	DATE 08/22/2015
CLIENT MVP	PROJECT NAME MVP
INVESTIGATORS A. rodrian, L. sexton, C. Wh	arton
FLOW REGIME Perennial — Intermittent Ephemeral —	WATER TYPE TNW RPW ✓ NRPW

		Estimate N	/leasurements		Stream Erosion	
			k Width: 10.0 ft		<u>✓ None</u> Moderate	Heavy
		Top of Bank Height:			Artificial, Modified or Char	nnelized
CHANNEL FEATURES		LB <u>3.0</u>	ft RB <u>1.0</u>		Yes _ ∠ No	
		Water Dep	th: 4.00 in			
CHANNELTE	ATORES	Water Widt	th: 3.0 ft		Dam PresentYes _	<u>∠</u> No
		High Water	r Mark: <u>1.0 ft</u>		Sinuosity Low	Medium High
		Flow Direct	tion: E		Gradient	
					✓ Flat Moderate _	Severe
					, ,	(10 ft/100 ft)
		Water Pres	sent er, stream bed dry		Proportion of Reach Repre Morphology Types	esented by Stream
			bed moist		Riffle 35 % Run 50	%
FLOW		Standin	•		Pool 15 %	
CHARACTER	ISTICS	<u></u> Flowing	water		Turbidity	
		Velocity			✓ Clear —Slightly	turbidTurbid
		•	✓ Moderate		OpaqueStained	
		Slow			Other	
INORGANIC SUBSTRATE CO			_	RGANIC SUBSTRATE CON		
Cubatasta	(snould a	add up to 10		,	loes not necessarily add u	·
Substrate Type	Diame	ter	% Composition in Sampling Reach	Substrate Type	Characteristic	% Composition in Sampling Area
Bedrock			10	Detritus	sticks, wood, coarse	
Boulder		mm (10")	30		plant materials (CPOM)	15
Cobble		m (2.5"-10")	20	Muck-Mud	black, very fine organic	0
Gravel		(0.1"-2.5")	25		(FPOM)	
Sand	0.06-2mm (gritty) 0.004-0.06 mm		15	Marl grev, shell fragments		0
Silt		mm (slick)	0	Iviari	grey, shell fragments	
Clay	V 0.004 I	. ,	l ∪ ant Surrounding Lar	duso	Indicate the dominant type	(Check one)
		<u>✓</u> Forest	Commer		✓ Trees Shrub	
			astureIndustria		Grasses Herba	ceous
WATERSHED		— Agricul	tural Residen		Floodplain Width	
FEATURES		Other:			Wide > 30ft Mode	rate 15-30ft
		Canopy Co			✓ Narrow <16ft	
		Partly openPartly sha		wetland PresentYes <u>✓</u> No		∨ No
		<u>✓</u> Shaded	Open		Wetland ID	_
_					lominant species present	ting Froe floating
AQUATIC VEGETATION _				Rooted subme Attached algae	<u> </u>	tingFree floating
				,auu. u.gu.		
		The stream	was revisited and ex	tended on 10/	17/2016. The presence of a s	stream channel and
			s confirmed.		3.0 ргооспос от а с	Jam J. Jam J
MACROINVER	RTEBRATES					
OR OTHER WILDLIFE						
OBSERVED/C						
NOTES	NIO AND					

Stream ID s-006



Photograph Direction East

Date: 08/22/2015

Comments: 2015 stream identification.



Photograph Direction South

Date: 10/17/2016

Comments: 2016 stream extension

STREAM ID S-QQ3	STREAM NAME UNT to Sinking Creek
LAT 37.311638 LONG -80.532287	DATE 09/25/2015
CLIENT MVP	PROJECT NAME MVP
INVESTIGATORS A lands, S. Kite	
FLOW REGIME Perennial — Intermittent— Ephemeral	WATER TYPE TNW RPW NRPW

Perenniai –	_ memilie	nt <u> </u>	erai — TNW —	RPW —	NRPW —	
		Estimate N	Measurements		Stream Erosion	
		Top of Ban	k Width: 2.0 ft		<u>✓</u> None Moderate	Heavy
		Top of Bank Height:			Artificial, Modified or Chan	nolizod
		LB 2.0	ft RB <u>2.0 f</u>	<u>ft</u>	Yes ✓ No	inenzeu
CHANNEL FE	ATLIDES	Water Dept	th: 0.00 ft			
ONAMILE I LATORES		Water Widt			Dam PresentYes	<u>∕</u> No
		High Water	Mark: <u>1.0 ft</u>		Sinuosity 🔽 Low	Medium High
		Flow Direct	tion: South		Gradient	
						Severe (10 ft/100 ft)
		Water Pres	ent		Proportion of Reach Repre	,
			r, stream bed dry		Morphology Types	-
			bed moist		Riffle 50 % Run 50 Pool %	%
FLOW	IOTIOO	Standing	•		70	
CHARACTERISTICS			Water		Turbidity	
		Velocity	✓ Madarata		ClearSlightly turbidTurbidOpaqueStainedOther	
		Slow	Fast Moderate			
I — I — I INORGANIC SUBSTRATE COMPONENTS			0	RGANIC SUBSTRATE COM	IPONENTS	
iii oi		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				Dotritus	sticks, wood, coarse	
Boulder	> 256	mm (10")	15	Detritus	plant materials (CPOM)	5
Cobble	64-256 m	ım (2.5"-10")	30	Muck-Mud	black, very fine organic	
Gravel	2-64 mm	า (0.1"-2.5")	15	Widok Widd	(FPOM)	
Sand	0.06-2r	nm (gritty)	10			
Silt		0.06 mm	20	Marl	grey, shell fragments	
Clay	< 0.004	mm (slick)	10	_		
		Predomina Forest	ant Surrounding Lan Commer		Indicate the dominant type Trees Shrub	
		Field/Pa			✓ Grasses — Herba	
		Agricult				
WATERSHED FEATURES		Other:			Floodplain Width Wide > 30ft Moder	rate 15-30ft
		Canopy Co	over		Narrow <16ft	
		Partly openPartly shaded		aded	Wetland PresentYes	No
Shade		Shaded	<u>✓</u> Open		Wetland ID	<u>✓</u> No
			• •		dominant species present	inn Frankland
AQUATIC VEGETATION Rooted emerger Floating algae		· —	Rooted submer Attached alga	<u> </u>	ingFree floating	
		Information	listed on this form re-	presents the c	data collected in 2015. The str	ream was revisited
		on 10/28/20)19. The presence of	a stream char	nnel and OHWM was confirm	ed.

	Information listed on this form represents the data collected in 2015. The stream was revisited on 10/28/2019. The presence of a stream channel and OHWM was confirmed.
MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	



Photograph Direction South

Date: 09/25/2015

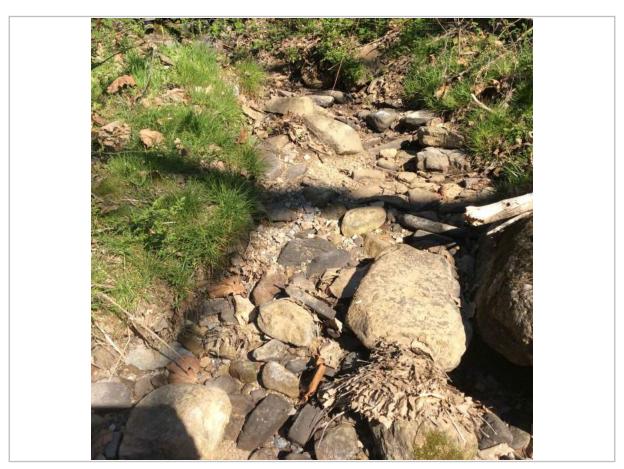
Comments: 2015 stream identification.



Photograph Direction North

Date: 10/28/2019

STREAM ID S-IJ16-a			STREAM NA	STREAM NAME UNT to Sinking Creek			
CLIENT MVP				PROJECT NAME MVP			
LAT 37.3127		ONG -80.54500			COUNTY Giles		
INVESTIGATO	ORS E. Fo	ster, S. Lieb, J.	Niergarth				
WATER TYPE TNW RPW NRPW			FLOW REG Perennial	IME Intermit	tent Ephemeral 🗾	<u> </u>	
		Estimate Mea	asurements		Sinuosity Low 🗸	Medium High	
		Top of Bank Width: <u>7.0</u> ft Top of Bank Height:			Gradient	oderate Severe (100 ft) (100 ft)	
LB <u>2.0</u> ft Water Depth: <u>0.</u> 0					Stream ErosionNone Moderate	Heavy	
					Artificial, Modified or Chan	_ ,	
CHANNEL FE	ATURES	Water Width:			✓ Yes No		
		_	Water Mark (Width):		Within Roadside Ditch		
		, ,	Water Mark (Height)	: <u>6.0</u> in	Yes VIIII Yes	1	
		Flow Direction	n: South	_			
					Culvert Present _ Yes		
					Culvert Material: Corrugated	<u>Metal</u>	
					Culvert Size: 24 in		
		Water Presei	nt stream bed dry		Proportion of Reach Represemental Morphology Types (Only enter		
		Stream bed			Riffle % Run	%	
EL OW		Standing v	vater		Pool %		
FLOW CHARACTER	ISTICS	Flowing wa	iter		Turkidity		
		Valasity			TurbidityClearSlightly turbidTurbid		
		Velocity Fast	_ Moderate		Other	_	
		Slow					
INORGANIC SUBSTRATE COMPO				1			
INOR	_				DRGANIC SUBSTRATE COM (does not necessarily add u		
Substrate	(shoul	ld add up to 10			does not necessarily add u	p to 100%)	
	(shoul		0%) 100	(does not necessarily add u	p to 100%)	
Substrate Type Bedrock	(shoul	ld add up to 10	0%) 100 % Composition in	Substrate Type	Characteristic sticks, wood, coarse	p to 100%) % Composition in	
Substrate Type Bedrock Boulder	Dian > 25	neter 56 mm (10")	0%) 100 % Composition in	Substrate	does not necessarily add u	p to 100%) % Composition in	
Substrate Type Bedrock Boulder Cobble	Dian	meter 56 mm (10") 5 mm (2.5"-10")	% 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 Dial	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5")	% Composition in Sampling Reach 40 20 20	Substrate Type Detritus	Characteristic sticks, wood, coarse plant materials (CPOM)	p to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand	Shoul Dial	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty)	% Composition in Sampling Reach 40 20 20 10	Substrate Type Detritus Muck-Mud	characteristic sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM)	p to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt	Shoul Dial	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 14-0.06 mm	% Composition in Sampling Reach 40 20 20	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 Dial	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 40 20 20 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	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt	Should Dian	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 40 20 20 10 10 Surrounding Landu Landustrial	Substrate Type Detritus Muck-Mud Marl	characteristic Sticks, wood, coarse plant materials (CPOM) black, very fine organic (FPOM) grey, shell fragments Floodplain Width	p to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay	Should Dian	meter 56 mm (10") 5 mm (2.5"-10") 7 mm (0.1"-2.5") 7 mm (gritty) 7 mm (slick) 7 Predominant 7 Forest 7 Field/Past 7 Agricultura	% Composition in Sampling Reach 40 20 20 10 10 Surrounding Landu — Commercial ture — Industrial — Residential — Other:	Substrate Type Detritus Muck-Mud Marl	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	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay	Should Dian	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 40 20 20 10 10 Surrounding Landu — Commercia — Industrial — Residential — Other:	Substrate Type Detritus Muck-Mud Marl	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	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Shoul Dian	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 40 20 20 10 10 Surrounding Landu Commercia Industrial Residential Other: Partly shad	Substrate Type Detritus Muck-Mud Marl	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 15	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Shoul Dian	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 40 20 20 10 10 Surrounding Landu Commercia Industrial Residential Other: Partly shad	Substrate Type Detritus Muck-Mud Marl	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 15	



Photograph Direction South

STREAM ID S-NN17	STREAM NAME Sinking Creek
LAT 37.311354 LONG -80.516414	DATE 08/29/2015
CLIENT MVP	PROJECT NAME MVP
INVESTIGATORS D. McCullough, K. Larsen, F	R. Turner, C. Carver
FLOW REGIME Perennial Intermittent Ephemeral	WATER TYPE TNW — RPW ✓ NRPW —

			Measurements		Stream Erosion	Heern
		Top of Bank Width: 70.0 ft			<u>✓</u> NoneModerate	neavy
		Top of Bank Height:			Artificial, Modified or Char	nelized
CHANNEL FEATURES		LB <u>4.0 ft</u> RB <u>5.0 ft</u>			Yes _ <u>✓</u> No	
		-	th: 1.00 ft		Dam PresentYes _	✓ No
		Water Widt				_
		High Water	Mark: <u>2.0 ft</u>		Sinuosity <u>v</u> Low	Medium High
		Flow Direct	tion: Southwest		Gradient	
					Flat	Severe (10 ft/100 ft)
		Water Pres			Proportion of Reach Repre	sented by Stream
			r, stream bed dry oed moist		Morphology Types Riffle 60 % Run 35	%
		Standing			Pool 5 % Run 35 %	
FLOW CHARACTER	ISTICS	Flowing	water		Touch inline	
		Velocity			Turbidity <u>✓</u> ClearSlightly turbid <u>✓</u> Turb OpaqueStained	
			✓ Moderate			
		Slow			Other	
INOR		STRATE CO		_	RGANIC SUBSTRATE COM	
	(should	add up to 100		(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")	15	200.100	plant materials (CPOM)	10
Cobble		m (2.5"-10")	45	Muck-Mud	black, very fine organic	0
Gravel		1 (0.1"-2.5")	25		(FPOM)	Ŭ
Sand		nm (gritty)	10	NAI	non a la ell for non auto	0
Silt		0.06 mm	5	Marl	grey, shell fragments	
Clay	\ 0.004	mm (slick)	0 ant Surrounding Lan	duso	Indicate the dominant type	(Chack ana)
		<u>✓</u> Forest	•	cial	✓ Trees Shrub	
		✓ Field/Pa	astureIndustrial		Grasses Herbaceous	
WATERSHED		Agricult	ural 🔽 Resident	tial		
FEATURES		Other:			✓ Wide > 30ft Mode	rate 15-30ft
		Canopy Co			Narrow <16ft	
		<u>✓</u> Partly of Shaded	· —	aded	Wetland PresentYes	✓ No
		_			Wetland ID	-
AQUATIC VE	CETATION				dominant species present ergent Rooted float	ing Free floating
AQUATIC VE	SEIAIIUN			Attached alga	<u>—</u>	ree noading
			-			

	Macroinvertebrates include snails and worms. Small fish and raccoon tracks observed 2015 comments
MACROINVERTEBRATES OR OTHER WILDLIFE OBSERVED/OTHER OBSERVATIONS AND NOTES	Stream was revisited and extended in 2016. The presence of a stream channel and OHWM was confirmed.



Photograph Direction SW

STREAM ID	S-KL43		STREAM NA	STREAM NAME UNT to Sinking Creek				
CLIENT MVP			PROJECT N	PROJECT NAME MVP				
LAT 37.3075		ONG -80.46682			cou	NTY Giles		
INVESTIGATO	ORS J. Co	ook, S. Pilcher, S	S. Therkildson					
WATER TYPE	RPW [NRPW [FLOW REG Perennial	IME Intermiti	tent	Ephemeral		
		Estimate Mea	asuraments		Sinuosity	∠ Low	Medium High	
			Vidth: 10.0 ft		_		<u> </u>	
Top of Bank F LB <u>1.0</u> ft Water Depth:		-			Gradient		derate Severe (100 ft) (10 ft/100 ft)	
		LB <u>1.0</u> ft RB <u>1.0</u> ft			Stream Er	,	(10 10 10 10	
				None		Heavy		
	Water Width: 8.0				Artificial, I	Modified or Chani	nelized	
CHANNEL FE	CHANNEL FEATURES		Water Mark (Width):	80 ft	Yes	<u> </u>	1	
			Water Mark (Height)		Within Roa	adside Ditch		
		Flow Direction	· ·	0.0_ 111	Yes	<u> </u>	1	
		I low birection	i. Itoriiiwoot	_	Culvert Pr	esentYes	<u>√</u> No	
					Culvert Ma	terial:		
					Culvert Siz	e:in		
		Water Preser	nt		Proportion	of Reach Repres	sented by Stream	
			tream bed dry			y Types (Only ente		
		Stream bed moist Standing water			Riffle 50 Pool	% Run 50 %	%	
FLOW CHARACTER	ISTICS	Flowing wa		Turbidity ✓ ClearSlightly turbid Turbid				
CHARACTER	131103		<u>·</u> . io.ii.ig mate.			urbid Turbid		
		Velocity Fast _✓	•		Other_			
		Slow	_ Moderate					
INOR	-	UBSTRATE CO				SUBSTRATE COM	-	
	-	UBSTRATE CO	0%) 100	(does not n	SUBSTRATE COM ecessarily add u	p to 100%)	
Substrate	(shou		0%) 100 % Composition in	Substrate	does not n		y to 100%) % Composition in	
	(shou	ld add up to 10	0%) 100	Substrate Type	does not n	acteristic	p to 100%)	
Substrate Type	(shou	ld add up to 10	0%) 100 % Composition in	Substrate	Char	ecessarily add u	y to 100%) % Composition in	
Substrate Type Bedrock	(shou	ld add up to 100	0%) 100 % Composition in	Substrate Type Detritus	Char stick plant r	acteristic s, wood, coarse naterials (CPOM)	y to 100%) % Composition in	
Substrate Type Bedrock Boulder	(shou) Dia > 29 64-256	meter 56 mm (10")	% Composition in Sampling Reach	Substrate Type	Char stick plant r	acteristic s, wood, coarse	y to 100%) % Composition in	
Substrate Type Bedrock Boulder Cobble	Shou Dia	meter 56 mm (10") 6 mm (2.5"-10")	% Composition in Sampling Reach	Substrate Type Detritus	Char stick plant r	acteristic s, wood, coarse naterials (CPOM) very fine organic	y to 100%) % Composition in	
Substrate Type Bedrock Boulder Cobble Gravel	Shou Dia	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5")	% Composition in Sampling Reach	Substrate Type Detritus	Char Stick plant r black,	acteristic s, wood, coarse naterials (CPOM) very fine organic	y to 100%) % Composition in	
Substrate Type Bedrock Boulder Cobble Gravel Sand	Shou Dia > 29 64-256 2-64 r 0.06 0.00	dd add up to 100 meter 56 mm (10") 5 mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 04-0.06 mm 04 mm (slick)	% Composition in Sampling Reach 30 30 40	Substrate Type Detritus Muck-Mud Marl	Char stick plant r black,	acteristic s, wood, coarse naterials (CPOM) very fine organic (FPOM) shell fragments	y to 100%) % Composition in	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt	Shou Dia > 29 64-256 2-64 r 0.06 0.00	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 04-0.06 mm 04 mm (slick) Predominant	% Composition in Sampling Reach 30 30 40 Surrounding Landu	Substrate Type Detritus Muck-Mud Marl	character of the charac	acteristic s, wood, coarse naterials (CPOM) very fine organic (FPOM) shell fragments Width	y to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt	Shou Dia > 29 64-256 2-64 r 0.06 0.00	meter 56 mm (10") 5 mm (2.5"-10") 7 mm (0.1"-2.5") 7 mm (gritty) 7 mm (slick) Predominant Forest	% Composition in Sampling Reach 30 30 40 Surrounding Landu Commercia	Substrate Type Detritus Muck-Mud Marl	closes not	acteristic s, wood, coarse naterials (CPOM) very fine organic (FPOM) shell fragments Width 30ft Modera	p to 100%) % Composition in	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay	Shou Dia	meter 56 mm (10") mm (2.5"-10") mm (0.1"-2.5") -2mm (gritty) 04-0.06 mm 04 mm (slick) Predominant	% Composition in Sampling Reach 30 30 40 Surrounding Landu — Commerciaure — Industrial	Substrate Type Detritus Muck-Mud Marl	character of the charac	acteristic s, wood, coarse naterials (CPOM) very fine organic (FPOM) shell fragments Width 30ft Modera	p to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt	Shou 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	% Composition in Sampling Reach 30 30 40 Surrounding Landu — Commerciaure — Industrial	Substrate Type Detritus Muck-Mud Marl	closes not	acteristic s, wood, coarse naterials (CPOM) very fine organic (FPOM) shell fragments Width 30ft Modera	p to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay	Shou Dia	meter 56 mm (10") 5 mm (2.5"-10") 7 mm (0.1"-2.5") 7 mm (gritty) 7 mm (slick) Predominant Forest Field/Past Agricultura ROW	% Composition in Sampling Reach 30 30 40 Surrounding Landu — Commercia — Industrial — Residential — Other:	Substrate Type Detritus Muck-Mud Marl	closes not	acteristic s, wood, coarse naterials (CPOM) very fine organic (FPOM) shell fragments Width 30ft Modera	p to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay	Shou Dia	756 mm (10") 756 mm (2.5"-10") 75mm (0.1"-2.5") 75mm (gritty) 75mm (gritty) 75mm (slick)	% Composition in Sampling Reach 30 30 40 Surrounding Landu — Commercia — Industrial — Residential — Other:	Substrate Type Detritus Muck-Mud Marl	closes not	acteristic s, wood, coarse naterials (CPOM) very fine organic (FPOM) shell fragments Width 30ft Modera	p to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay	Shou 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 Agricultura ROW Canopy Cove	% Composition in Sampling Reach 30 30 40 Surrounding Landu — Commercia — Industrial — Residential — Other:	Substrate Type Detritus Muck-Mud Marl	closes not	acteristic s, wood, coarse naterials (CPOM) very fine organic (FPOM) shell fragments Width 30ft Modera	y to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay	Shou 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 Agricultura ROW Canopy Cove	% Composition in Sampling Reach 30 30 40 Surrounding Landu — Commercia — Industrial — Residential — Other:	Substrate Type Detritus Muck-Mud Marl	closes not	acteristic s, wood, coarse naterials (CPOM) very fine organic (FPOM) shell fragments Width 30ft Modera	y to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Shou 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 Agricultura ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 30 30 40 Surrounding Landu — Commercia — Industrial — Residential — Other:	Substrate Type Detritus Muck-Mud Marl	closes not	acteristic s, wood, coarse naterials (CPOM) very fine organic (FPOM) shell fragments Width 30ft Modera <15ft	y to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Shou 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 Agricultura ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 30 30 40 Surrounding Landu Commercia Industrial Residential Other: Partly shad	Substrate Type Detritus Muck-Mud Marl	closes not	acteristic s, wood, coarse naterials (CPOM) very fine organic (FPOM) shell fragments Width 30ft Modera <15ft	y to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Shou 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 Agricultura ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 30 30 40 Surrounding Landu Commercia Industrial Residential Other: Partly shad	Substrate Type Detritus Muck-Mud Marl	closes not	acteristic s, wood, coarse naterials (CPOM) very fine organic (FPOM) shell fragments Width 30ft Modera <15ft	y to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Shou 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 Agricultura ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 30 30 40 Surrounding Landu Commercia Industrial Residential Other: Partly shad	Substrate Type Detritus Muck-Mud Marl	closes not	acteristic s, wood, coarse naterials (CPOM) very fine organic (FPOM) shell fragments Width 30ft Modera <15ft	y to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Shou 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 Agricultura ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 30 30 40 Surrounding Landu Commercia Industrial Residential Other: Partly shad	Substrate Type Detritus Muck-Mud Marl	closes not	acteristic s, wood, coarse naterials (CPOM) very fine organic (FPOM) shell fragments Width 30ft Modera <15ft	y to 100%) % Composition in Sampling Area	
Substrate Type Bedrock Boulder Cobble Gravel Sand Silt Clay WATERSHED FEATURES	Shou 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 Agricultura ROW Canopy Cove Open Shaded	% Composition in Sampling Reach 30 30 40 Surrounding Landu Commercia Industrial Residential Other: Partly shad	Substrate Type Detritus Muck-Mud Marl	closes not	acteristic s, wood, coarse naterials (CPOM) very fine organic (FPOM) shell fragments Width 30ft Modera <15ft	y to 100%) % Composition in Sampling Area	



Photograph Direction West

STREAM ID S-NN11	STREAM NAME UNT to Sinking Creek
LAT 37.30593 LONG -80.467533	DATE 08/27/2015
CLIENT MVP	PROJECT NAME MVP
INVESTIGATORS D. McCullough, K. Larsen, F	R. Turner
FLOW REGIME Perennial Intermittent Ephemeral	WATER TYPE TNW RPW ⊻ NRPW

Perenniai –		nt <u> — Epnem</u>	erai rivvv	RPW —	NRPW —		
		Estimate Measurements Top of Bank Width: 5.0 ft			Stream Erosion None Moderate Heavy		
		Top of Ban	k Width: 5.0 ft		<u>✓ None</u> Moderate	Heavy	
		Top of Ban	k Height:		Artificial, Modified or Char	nnelized	
		LB <u>0.5</u>	ft RB <u>1.0</u>	<u>ft</u> .	Yes ⊂ <u></u> No		
CHANNEL FEATURES		Water Dep	th: 0.50 in				
		Water Widt	h: 2.0 ft		Dam PresentYes _	<u>∕</u> No	
			Mark: 2.0 in		Sinuosity V Low	Medium High	
		Flow Direct				_ •	
		Flow Direct	11011.		Gradient Flat Moderate _	✓ Sovoro	
					(0.5/100 ft (2 ft/100 ft)		
		Water Pres	sent		Proportion of Reach Repre	esented by Stream	
			r, stream bed dry		Morphology Types	-	
			bed moist		Riffle 60 % Run 10 Pool 30 %	%	
FLOW		Standing	•		Pool 30 %		
CHARACTER	ISTICS	<u>✓</u> Flowing	water		Turbidity		
		Velocity			✓ ClearSlightly		
			Moderate		OpaqueStained		
		<u>✓</u> Slow			Other		
INOR		STRATE CO add up to 10		_	RGANIC SUBSTRATE COM loes not necessarily add u		
Substrate	(Siloulu (add up to 10	% Composition in	•	Ī	% Composition in	
Type	Diame	ter	Sampling Reach	Type	Characteristic	Sampling Area	
Bedrock			30	Dotritus	sticks, wood, coarse		
Boulder	> 256	mm (10")	15	Detritus	plant materials (CPOM)	10	
Cobble	64-256 m	m (2.5"-10")	25	Musels Musel	black, very fine organic		
Gravel	2-64 mm	ı (0.1"-2.5")	20	Muck-Mud	(FPOM)	0	
Sand	0.06-2n	nm (gritty)	10			_	
Silt	0.004-0	0.06 mm	0	Marl	grey, shell fragments	0	
Clay	< 0.004 ı	mm (slick)	0				
			ant Surrounding Lar	iduse	Indicate the dominant type	(Check one)	
		<u>✓</u> Forest	Commer	cial	<u>✓</u> Trees Shrub		
		✓ Field/Pa			Grasses Herba	ceous	
WATERSHED		Other:	tural <u>v</u> Residen	uai	Floodplain Width		
FEATURES		_ 00101.		✓ Wide > 30ft Moderate 15		rate 15-30ft	
		Canopy Co			Narrow <16ft		
		Partly o		aded	ded Wetland PresentYes ∠No		
		<u>✓</u> Shaded Open			Wetland ID	_	
					lominant species present		
AQUATIC VE	GETATION		_	Rooted subme	<u> </u>	tingFree floating	
		Floating	g algae	Attached algae			
		Unnamed t	ributary to Sinking Cr	eek			
MACROINVER OR OTHER	RTEBRATES	•					
WILDLIFE	TUED						
OBSERVED/C							
NOTES							

Stream ID S-NN11



Photograph Direction SSE

Date: 08/27/2015

Comments: 2015 stream identification.



Photograph Direction SE

Date: 10/29/2019

STREAM ID S-NN12	STREAM NAME UNT to Sinking Creek
LAT 37.300333 LONG -80.472927	DATE 08/27/2015
CLIENT MVP	PROJECT NAME MVP
INVESTIGATORS D. McCullough, K. Larsen, F	R. Turner
FLOW REGIME Perennial — Intermittent— Ephemeral —	WATER TYPE TNW — RPW — NRPW ✓

Perenniai _		nt <u> </u>	erai invv —	RPW —	NRPW —	
		F-414- 1			04 F!	
			fleasurements k Width: 2.0 ft		Stream Erosion ✓ None Moderate	Heavv
		Top of Donk Height:		-		
					Artificial, Modified or Char Yes _ ✓ No	nnelized
			th: 0.00 in	<u>···</u>	Yes _ <u>v</u> No	
CHANNEL FEATURES		Water Widt			Dam PresentYes	<u>∕</u> No
			Mark: 2.0 in		Sinuosity Low	Medium High
		Flow Direct				g
		Flow Direct	IIOII. 1401U1		Gradient Flat _✓ Moderate _	Severe
						(10 ft/100 ft)
		Water Pres			Proportion of Reach Repre	esented by Stream
		✓ No wate	r, stream bed dry		Morphology Types Riffle % Run	%
		Standing			Pool %	,,
FLOW CHARACTER	ISTICS	Flowing	water		T	
		Velocity			Turbidity ClearSlightly	turbidTurbid
		Fast	Moderate		OpaqueStained	
		Slow			Other	
INOR	GANIC SUB	STRATE CO		_	RGANIC SUBSTRATE CON loes not necessarily add u	-
Substrate		-		Substrate		% Composition in
Type	Diame	ter	Sampling Reach	Туре	Characteristic	Sampling Area
Bedrock				Detritus	sticks, wood, coarse	
Boulder		mm (10")	10	2011.100	plant materials (CPOM)	10
Cobble		m (2.5"-10")	10	Muck-Mud	black, very fine organic	0
Gravel		(0.1"-2.5")	20		(FPOM)	
Sand Silt		nm (gritty) 0.06 mm	10	Mod	grov shall fragments	0
		mm (slick)	50 0	Marl	grey, shell fragments	
Clay	< 0.004 1	, ,	ant Surrounding Lar	duso	Indicate the dominant type	(Chook one)
		<u>✓</u> Forest	Commer		<u>✓</u> Trees Shrub	s
		Field/P			Grasses Herba	ceous
WATERSHED		Agricult Other:	tural Residen	tial	Floodplain Width	
FEATURES		Outlet.		Wide > 30ft Moderate 15-30		rate 15-30ft
		Canopy Cover			✓ Narrow <16ft	
		Partly open Partly sha			Wetland PresentYes	<u>✓</u> No
					Wetland ID	
AQUATIC VE	SETATION			d record the d Rooted subme	lominant species present ergent Rooted float	ing Free floating
AQUATIC VE	SETATION	Floating	_	Attached algae	_	rree nearing
		Unnamed e	ephemeral stream. Fe	d by seep nea	r western edge of corridor, w	here stream turns
		intermittent	•	•		
MACROINVEI OR OTHER	RTEBRATES					
WILDLIFE OBSERVED/C	THED					
OBSERVATIO						
NOTES						

Stream ID S-NN12



Photograph Direction North

Date: 08/27/2015

Comments: 2015 stream identification.



Photograph Direction NW

Date: _____

STREAM ID	STREAM ID S-MN21			STREAM NAME UNT to Mill Creek			
CLIENT MVP				PROJECT NAME MVP			
LAT 37.2994		ONG -80.39122		DATE 05/11/2017 COUNTY Montgomery			
INVESTIGATO	ORS S Ry	an, K Pulver, H F	Phelan				
WATER TYPE	RPW	NRPW	FLOW REG Perennial	IME Intermi	ittent Ephemeral		
		Estimate Mea	asurements Vidth: 7.0 ft		SinuosityLow	MediumHigh	
		Top of Bank H	Height:	-	Gradient Flat ✓ Moderate Severe (0.5/100 ft) (2 ft/100 ft) (10 ft/100 ft)		
		Water Depth:	t RB <u>2.0</u> 3.00 in	π	Stream Erosion None Moderate	Heavy	
Water Width:					Artificial, Modified or Chann		
CHANNEL FE	ATURES	Ordinary High	Water Mark (Width):	5.0 ft	YesNo		
			Water Mark (Height)		Within Roadside Ditch		
		Flow Direction			Yes <u>✓</u> No		
					Culvert PresentYes _		
					Culvert Material:		
					Culvert Size:in		
FLOW		Stream bed Standing w	tream bed dry I moist vater		Proportion of Reach Repres Morphology Types (Only ente Riffle 15 % Run 65 Pool 20 %	r if water present)	
CHARACTER	ISTICS	<u>✓</u> Flowing water			Turbidity		
		Velocity			✓ ClearSlightly turbidTurbid		
		Fast _ <u>v</u>	_ Moderate		Other		
INOR	-	UBSTRATE COI			ORGANIC SUBSTRATE COM		
Substrate	(Snoul	ld add up to 100	% Composition in	Substrat	(does not necessarily add up to 100%) ate		
Type	Dia	meter	Sampling Reach	Type	Characteristic	Sampling Area	
Bedrock			10	Detritus	sticks, wood, coarse		
Boulder		56 mm (10")	10	Detitios	plant materials (CPOM)	25	
Cobble		6 mm (2.5"-10")	40	Muck-Muc	black, very fine organic	0	
Gravel		mm (0.1"-2.5")	30		(FPOM)	0	
Sand		-2mm (gritty)	10	Morl	arov shall fragments	0	
Silt Clay		04-0.06 mm 04 mm (slick)		Marl	grey, shell fragments	· ·	
Clay	<u> </u>		Surrounding Land	160	 Floodplain Width		
WATERSHED Field/Pasture Agricultural		Commercia			te 15-30ft		
WATERSHED FEATURES	ı	Field/Past	ureIndustrial		Narrow <15ft		
	ı	Field/Past Agricultura	ureIndustrial alResidential Other:				
		Field/Past Agricultura ROW Canopy Cove	ureIndustrial alResidentialOther:				
FEATURES		Field/Past Agricultura ROW Canopy Cove Open Shaded	ureIndustrial al ResidentialOther: erPartly shade	ed		EVATIONS	
FEATURES	ROINVER	Field/Past Agricultura ROW Canopy Cove Open Shaded	ureIndustrial al ResidentialOther: erPartly shade	ed SERVED OR	Narrow <15ft	EVATIONS	
FEATURES	ROINVER	Field/Past Agricultura ROW Canopy Cove Open Shaded	ureIndustrial alResidentialOther: Partly shade HER WILDLIFE OBS	ed SERVED OR	Narrow <15ft	EVATIONS	
FEATURES	ROINVER	Field/Past Agricultura ROW Canopy Cove Open Shaded	ureIndustrial alResidentialOther: Partly shade HER WILDLIFE OBS	ed SERVED OR	Narrow <15ft	EVATIONS	



Photograph Direction NE