Survey Description	on								
Project Name:		Waterbody Na	ame:		w	/aterbody ID:			Date:
Atlantic Coast Pipe	eline	UNT to Jam	ies River		s	bua008			2/5/2016
State:	County:		Company:		Crew I	Member Initials	:	Photos:	
Virginia	Buckingham		NRG		GB, A	AS		3 phot	OS
Tract Number(s):			Nearest Mile	epost:	1	Associated W	etland	ID(s):	
09-001-A001.AR			185.1			wbua006			
Survey Type: (check one)		e □Re-	Route	⊠Access Road		□Other:			
Physical Attribute	es								
Stream Classification (check one)	Epheme	ral ∏Inte	ermittent	⊠Perennial					
Waterbody Type									
(check one)	□River ⊠ St	ream 🗆 Dit	ich 🗆 Ca	anal 🛛 🗆 Other	:				
ОНШМ	OHWM Indic	ator:							
Width: ft.	(check all that app	<i>ly)</i>	⊠ Clear lir on bank	ne ⊡Shelvin	g	☐Wrested vegetation	X	Scouring	g □Water staining
Height:	□Bent,	matted, or missi	ng ⊠Wrack li	ine 🗆 Litter ar	nd	□ Abrupt plan	ıt	□Soil c	haracteristic change
<u>3.0</u> π. N/A□	vegetati	on		debris		community ch	ange		
Width of Waterbody -	Top of Width	of Waterbody -	Toe of Slope	Width of Waterb	ody - W	ater Edge to	Depth	of Water	r:
валк то тор ог валк:	to TOE	e of Slope:		water Edge:			(Approx.)	/	
<u>_17.0</u> ft.		<u>_5.0_</u> ft.			<u>9.0_</u> ft.		N/A□		<u>_2.0_</u> ft.
Sinuosity:	Water	velocity:		Bank height			Banks	slope	
(check one)	(Approx	)		Right:				Right	:
		<u>_1.25_</u> f	OS	L oft:	<u>10.0_</u> ft			l off	<u>75</u> degrees
⊠Meander	ing N/A□			-	<u>10.0_</u> ft			Len	70_ degrees
Qualitative Attrib	utes								
(check one)	□No water ⊠	Clear □Tur	bid □Sh on	neen 🗆 Su n surface sci	rface um	□Algal I mats	□Othe	r:	
Substrate:	Bedrock B	oulder 🛛 Cob	ble 🛛 Grav	el 🛛 Sand 🛛	⊠ Silt/ c	clay 🛛 Organic	: 🗆 (	Other:	
(check all that apply) % of Substrate:	%	% <u>20</u> %	<u> 15 </u> %	<u>   50  </u> %	<u>10_</u> %	<u> 5 </u> %		%	
Width of Riparian Zon	e: Vegetativ	ve Layers:							
Within floods	(check all the	at apply)	☑ Trees	: D	🛛 Saplir	ngs/Shrubs:	$\boxtimes$	Herbs	
James River	(approx.)	or Dominants:	<u>9.0</u> in	· -	_ <u>1.0_</u> in				
Dominant Bank Veget	ation (list):								
Sycamore, black w sedge. fescue. fox	alnut, box elde tail. black-eved	er, multiflora r Susan.	ose, grape,	Japanese hon	eysuc	kle, spotted h	nemlo	ck, win	g stem, broom
Aquatic Habitats (ex: s Artificial step pools	submerged or emerge , woody debris	ed aquatic vegetati s, riffles, large	on, overhanging roots withir	banks/roots, leaf pac n channel	ks, large	submerged wood	, riffles,	deep pool	s):
Aquatic Organisms O	bserved (list):								
minnows									
T&E Species Observe	d (list):								
no									
Disturbances (ex: lives	tock access, manure	in waterbody, was	te discharge pipe	es):					
Timber bridge cros	sing for existin	g road, has u	inderwent s	tream restoration	on				
Tributary is: (check one)	□ Natural	□ A	rtificial, man-m	nade 🛛 Manip	ulated				
Stream Quality <sup>a</sup> : (check one)	□ High	⊠ M	oderate	□ Low					

Waterbody ID: sbua008

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

### Notes:

Continues out of the access road extension corridor in both directions; timber bridge crossing over stream for existing dirt two track road; cobble has been added during restoration; jute erosion fabric still visible on banks; overflow channel from wetland wbua006 connects to stream; timber bridge crossing at this wetland overflow as well.





Waterbody SBUA008 facing south upstream



Waterbody SBUA008 facing north downstream



Waterbody SBUA008 facing west across

Survey Descriptio	n										
Project Name:		Waterb	ody Name				W	aterbody ID:			Date:
Atlantic Coast Pipel	ine	UNT to	James	River			S	buc111			3/8/2016
State:	County:		Co	ompany:			Crew N	Member Initials	5:	Photos:	
Virginia	Nelson		Ν	RG			CR, S	SA		1-3	
Tract Number(s):			Ne	earest Mile	epost:			Associated W	etland	ID(s):	
09-001-B011								None			
Survey Type: (check one)		line	⊠Re-Roι	ute	□Ac	cess Road		□Other:			
Physical Attribute	s										
Stream Classification: (check one)	□Epherr	neral	⊠Intermi	ttent	□Pe	erennial					
Waterbody Type:											
(check one)	River ⊠	Stream	Ditch	🗆 Ca	anal	□ Other					
OHWM Width: _3_ft.	OHWM Ind (check all that a	icator: apply)		☑ Clear lir on bank	ne	□Shelvin	g	□Wrested vegetation		Scourin	g ⊟Water staining
Height:	□Ber vegeta	nt, matted, o ation	r missing	⊠Wrack li	ne	⊠Litter ar debris	nd	□Abrupt plar community ch	nt nange	□Soil c	haracteristic change
N/A∟ Width of Waterbody - 1	Con of Wid	th of Water	hody - To	e of Slone	Width	of Waterb	ody - W	ater Edge to	Denth	of Water	·-
Bank to Top of Bank:	to T	oe of Slope	:		Water	Edge:	ouy n	aler Luge lo	(Approx.	)	-
<u>_10_</u> ft.		1_ft.				_	<u>2</u> ft.				<u>0.3</u> ft.
Cinuccitur	W/of				N/A 🗆	haiaht			N/A 🗆	-	
(check one)	(Appr	rox.)			Бапк	Right			Danks	siope Right	
			<u>1_</u> fps				<u>2</u> ft.				60 degrees
⊠Meanderi	ng N/A					Left:	<u>2_</u> ft.			Left	:: <u>60</u> degrees
Qualitative Attribu	tes				1				I		
Water Appearance: (check one)	No water	⊠Clear		□Sh	een	□Su	rface		□Othe	r-	
				on	surface	e sci	um	mats	_ • • • • •		
Substrate:	Bedrock	Boulder	⊠ Cobble	⊠ Grave	el 🛛	Sand [	□ Silt/ c	lay 🗆 Organio		Other:	
% of Substrate:	%	%	<u>5</u> %	<u>20</u> %	_7	<u>′5_</u> %		_%%	,	_%	
Width of Riparian Zone	: Vegeta	tive Layers:									
10 ft-	(check all Avg. D	that apply) BH of Domi	nants:	⊠ Trees:	:	۵	⊠ Saplir	ngs/Shrubs:	Σ	Herbs	
N/A□	(approx.)		nunto.	<u>8</u> In.		-	<u>2</u> in.				
Dominant Bank Vegeta	tion (list):										
White oak, America	in beech, rec	d maple, s	ycamore	e, river bi	rch, Ja	apanese	honey	/suckle, smil	ax rot	undifoli	a, red cedar
Aquatic Habitats (ex: su	ubmerged or eme	rged aquatic v	regetation, c	overhanging	banks/ro	oots, leaf pac	ks, large	submerged wood	l, riffles,	deep pool	s):
Leaf packs, over ha	anging roots,	riffles									
Aquatic Organisms Ob	served (list):										
Mosquito larvae, sa	lamander la	rvae, frog	S								
T&E Species Observed	l (list):										
None											
Disturbances (ex: liveste	ock access, manu	ire in waterbo	dy, waste di	scharge pipe	es):						
None											
Tributary is: (check one)	⊠ Natura	al	□ Artific	cial, man-m	ade	🗆 Manip	ulated				
Stream Quality <sup>a</sup> : (check one)	🗆 High		⊠ Mode	erate		□ Low					

### Sbuc111

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

#### Notes:

Stream flows underground in parts and may be weakly intermittent





Waterbody SBUC111 facing southeast upstream



Waterbody SBUC111 facing northwest downstream



# Waterbody SBUC111 facing southwest across

Survey Description	n								
Project Name:		Waterbody Na	me:		w	aterbody ID:			Date:
Atlantic Coast Pipel	ine	UNT to Jam	es River		S	buc110			3/8/2016
State:	County:		Company:		Crew I	Member Initials:	: 1	Photos:	
Virginia	Buckingham		NRG		CR, S	SA		1-3	
Tract Number(s):			Nearest Mile	epost:		Associated W	etland	ID(s):	
09-001-B011			199.0			None			
Survey Type: (check one)		e ⊠Re-l	Route	□ Access Road		□Other:			
Physical Attribute	s								
Stream Classification:	Ephomor	ol ⊠loto	mittont						
			milleni						
(check one)	River Sti	ream 🗆 Dite	ch 🗆 C	anal 🗌 Other:	:				
онwм	OHWM Indica	tor:						<u> </u>	
Width: _2_ft.	(cneck all that appl	<i>y)</i>	☑ Clear lir on bank	ne ∐Shelving	g	☐Wrested vegetation		Scouring	l ∐Water staining
Height:	□Bent, r	matted, or missir	ng ⊡Wrack li	ne ⊠Litter ar	nd	□Abrupt plant	t	□Soil ch	naracteristic change
<u>0.4</u> ft. N/A□	vegetatio	n		debris		community ch	ange		
Width of Waterbody - T	op of Width	of Waterbody -	Toe of Slope	Width of Waterbo	ody - W	ater Edge to	Depth	of Water	:
ванк то тор ог ванк:	to Toe	of Slope:		water Edge:		(	(Αρριοχ.)		
<u>_6_</u> ft.	-	<u>1</u> ft.			<u>1_</u> ft.	,	N/A 🗆	-	<u>_0.2_</u> ft.
Sinuosity:	Water	velocity:		Bank height		· · · · · ·	Bank s	lope	
(check one)	(Approx.)			Right:				Right:	
		<u>_1_</u> fps		Left <sup>.</sup>	<u>2</u> ft.			l eft	60 degrees
⊠Meanderii	ng N/A□				<u>2</u> ft.				60 degrees
Qualitative Attribu	tes								
Water Appearance:	No water		oid ⊡Sk		rface		□Other	•	
(			or	surface scu	um	mats		•	
Substrate:	Bedrock 🗆 Bo	oulder 🛛 Cobl	ole 🛛 Grav	el 🛛 Sand 🛛	□ Silt/ c	clay 🗆 Organic		Other:	
% of Substrate:	%	<u>% 5</u> %	<u> 10 </u> %	<u>   85  </u> %		_%%		%	
Width of Riparian Zone	: Vegetativ	e Lavers:							
	(check all that	t apply)	☐ Trees	: 🛛 🛛	⊠ Saplir	ngs/Shrubs:	$\boxtimes$	Herbs	
<u>10 ft</u> - N/A□	Avg. DBH (approx.)	of Dominants:	<u>8</u> in.	-	<u>2</u> in.				
Dominant Bank Vegeta	tion (list):								
White oak, America	n beech, red n	naple, sycam	ore						
Aquatic Habitats (ex: su	ubmerged or emerge	d aquatic vegetatic	on, overhanging	banks/roots, leaf pac	ks, large	submerged wood,	riffles, o	deep pools	\$):
Leaf packs									
Aquatic Organisms Ob	served (list):								
Mosquito larvae									
T&E Species Observed	l (list):								
None									
Disturbances (ex: livesto	ock access, manure	in waterbody, wast	e discharge pip	es):					
None									
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	iade 🗆 Manipi	ulated				
Stream Quality <sup>a</sup> : (check one)	🗆 High	⊠ Mo	oderate	□ Low					

Sbuc110

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

### Notes:

Stream flows underground in parts and may be weakly ephemeral





Waterbody SBUC110 facing northeast upstream



Waterbody SBUC110 facing southwest downstream



# Waterbody SBUC110 facing northwest across

Survey Description	on								
Project Name:		Waterbody Na	me:		W	aterbody ID:			Date:
Atlantic Coast Pipe	line	UNT to Jam	es River		sl	bua007			2/5/2016
State:	County:		Company:		Crew I	Member Initials	:	Photos:	
Virginia	Buckingham		NRG		GB, A	AS		3 photo	os
Tract Number(s):	4		Nearest Mile	epost:		Associated W	etland	ID(s):	
09-001-A001.AR			185.5			none			
Survey Type: (check one)		e □Re-	Route	⊠Access Road		□Other:			
Physical Attribute	es								
Stream Classification: (check one)		al ⊠Inte	rmittent	Perennial					
Waterbody Type:									
(check one) [	□River ⊠ Str	eam 🗆 Dite	ch 🗆 Ca	anal 🗌 Other:					
OHWM Width: 5.0 ft.	OHWM Indica (check all that appl)	<b>tor:</b> /)	⊠ Clear lir on bank	e 🗆 Shelving	g	⊠Wrested vegetation		Scouring	g □Water staining
Height: <u>1.0</u> ft.	□Bent, r vegetatio	natted, or missir n	ng	ne ⊠Litter ar debris	nd	□ Abrupt plar community ch	it nange	□Soil cl	haracteristic change
N/A∟ Width of Waterbody -	Top of Width	of Waterbody -	Toe of Slone	Width of Waterbo	odv - W	ater Edge to	Denth	of Water	••
Bank to Top of Bank:	to Toe	of Slope:		Water Edge:	ouy n	aler Lage to	(Approx.)		•
<u>_9.0</u> ft.	-	<u>3.0</u> ft.			<u>3.0_</u> ft.		N/A□	-	<u>0.35_</u> ft.
Sinuosity:	Water	velocity:		Bank height			Bank s	slope	
	(Approx.)	0.40.4		Right:	40 ft			Right	: 65 dogroos
		<u>_0.40</u> fp	S	Left:	<u>4.0_</u> 11.			Left	<u> </u>
Meander	ing N/A□				<u>3.0_</u> ft.				45 degrees
Qualitative Attribu	utes								
Water Appearance: (check one)	□No water ⊠0	Clear 🗆 Turk	oid ⊡Sh on	een 🗆 Sur surface scu	face um	□Algal mats	□Othe	r:	
Substrate:	Bedrock Bc	ulder 🗆 Cobl	ole 🗆 Grave	el 🛛 Sand 🛛	⊠ Silt/ c	lay 🛛 Organic	: □ (	Other:	
(check all that apply) % of Substrate:	%	%	%	% 45 %	45 %	10 %		%	
Width of Piparian Zon	e: Vegetativ	a lavore:							
Within the floor	c. vegetative (check all that odplain Avg. DBH	apply) of Dominants:	⊠ Trees: 8 0. in	2	Saplir	ngs/Shrubs: n	$\boxtimes$	Herbs	
of James Rive	er (approx.)		<u>_0.0</u>	-	_ <u>0.00</u> _i				
Dominant Bank Veget Silver maple, greer	ation (list): ash, sycamore	e, elderberry,	yellow pop	lar, panic grass	s, woo	od rush, Japa	anese	honeys	suckle, wingstem
Aquatic Habitats (ex: s	ubmerged or emerge	d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles,	deep pool	s):
Leaf packs, emerg	gent vegetation,	woody debri	S						
Aquatic Organisms O	bserved (list):								
none									
T&E Species Observe	d (list):								
none									
Disturbances (ex: lives	tock access, manure i	n waterbody, wast	e discharge pipe	es):					
Appears altered in	conjunction wit	h stream res	toration effo	orts and creatio	n of n	earby wetlan	id miti	gation I	bank
Tributary is: (check one)	□ Natural	□ Ar	tificial, man-m	ade 🛛 🖾 Manipu	ulated				
Stream Quality <sup>a</sup> : (check one)	□ High		oderate	□ Low					

sbua007

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

### Notes:

Upstream continues out of access road extension corridor; downstream flows into sbua006 just before culvert inlet under existing road



Form Rev. 07/09/2014



Waterbody SBUA007 facing southwest upstream



Waterbody SBUA007 facing northwest downstream



Waterbody SBUA007 facing west across

Survey Description	on										
Project Name:		Waterb	ody Nam	e:			v	/aterbody ID:			Date:
Atlantic Coast Pipe	eline	UNT to	o James	River			sl	bua006			2/5/2016
State:	County:		c	company:			Crew I	Member Initials	5:	Photos:	
Virginia	Buckingha	am	Ν	IRG			GB, A	AS		3 phot	OS
Tract Number(s):			N	learest Mile	epost:			Associated W	etland	ID(s):	
09-001-A001.AR			1	85.5				wbua004			
Survey Type: (check one)	□Cent	terline	□Re-Ro	oute	⊠Ac	cess Road	ł	□Other:			
Physical Attribute	es										
Stream Classification (check one)	Ephe	emeral	□Interm	ittent	⊠Pe	erennial					
Waterbody Type: (check one)	River	⊠ Stream	□ Ditch	□ Ca	anal	□ Othe	r:				
OHWM Width:	OHWM In (check all th	ndicator: at apply)		⊠ Clear lir	ne	□Shelvir	ng	⊠Wrested vegetation		Scouring	g ⊟Water staining
Height:	□B	ent, matted, o	r missing	⊠Wrack li	ne	□Litter a	nd	□ Abrupt plar	nt	□Soil c	haracteristic change
_ <u>3.0_</u> π. N/A□	veg	etation				debris		community cł	nange		
Width of Waterbody - Bank to Top of Bank:	Top of W to	idth of Water	body - To :	e of Slope	Width Water	of Waterb Edge:	ody - W	ater Edge to	Depth (Approx.)	of Wate	r:
_ <u>_14.0_</u> ft.		<u>6.0</u> ft.				-	<u>9.0</u> ft.				<u>_2.0_</u> ft.
Sinuosity:	w	later velocity			N/A∟ Bank	height			Bank	slone	
(check one)	(A,	pprox.)			Dank	Right:			Dank .	Riaht	:
		_(	<u>).75_</u> fps			L offi	<u>5.0_</u> ft.				<u>75</u> degrees
⊠Meander	ring N	/A□				Lett:	<u>5.0</u> ft.			Len	.: <u>70</u> degrees
Qualitative Attrib	utes				<u>.</u>						
Water Appearance: (check one)	$\Box$ No water	⊠Clear	□Turbid	□ Sh on	een surfac	⊟Su e so	irface um	□Algal mats	□Othe	r:	
Substrate:	Bedrock	Boulder		Grave	el 🖂	Sand	Silt/ c	lay 🛛 Organio		Other:	
(check all that apply) % of Substrate:	%	%	%	, 	% <u>5</u>	<u>0</u> %	<u>40</u> %	<u>10</u> %		%	
Width of Riparian Zor	ne: Vege	tative Layers	:						_		
<u>In floodplair</u> James River	<u>1 Of</u> Avg.	all that apply) <b>DBH of Dom</b> i (x)	inants:	⊠ Trees: _ <u>8.0_</u> in.	:		⊠ Saplir <u>0.50_</u> i	ngs/Shrubs: n.		I Herbs	
Dominant Bank Veget	tation (list):										
Silver maple, gree	n ash, syca	more, elder	berry, y	ellow pop	lar, pa	anic gras	s, woo	od rush, Japa	anese	honeys	suckle, wingstem
Aquatic Habitats (ex: s	submerged or er	merged aquatic	vegetation,	overhanging	banks/ro	oots, leaf pao	cks, large	submerged wood	l, riffles,	deep pool	s):
Leaf packs, emerg	ent vegetat	ion, woody	debris								
Aquatic Organisms O	bserved (list):										
minnows											
T&E Species Observe	ed (list):										
none											
Disturbances (ex: lives	tock access, ma	anure in waterbo	dy, waste o	lischarge pipe	es):						
Culvert crossing for	or existing tw	wo track roa	ad, strea	ım has be	en re	stored w	here it	enters a we	tland i	mitigatio	on bank
Tributary is: (check one)	□ Nat	ural	□ Artifi	cial, man-m	ade	🛛 Manip	oulated				
Stream Quality <sup>a</sup> : (check one)	🗆 Higl	n	⊠ Mod	erate		□ Low					

sbua006

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap: natural vegetation extends 1/3-1/2 of the active channel width on each side: filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

### Notes:

Continues out of access road extension corridor in both directions; culvert crossing for existing road; downstream enters wetland wbua004 which is part of a wetland mitigation bank; sbua007 flows into this stream just upstream of culvert.





Waterbody SBUA006 facing southwest upstream



Waterbody SBUA006 facing northeast downstream



# Waterbody SBUA006 facing northwest across

inear traternee				The second s			man and the second distance of the second	the matter is the second second second
urvey Description	1				har-1		IDat	-
oject Name:		Vaterbody Nan	ne:	0.	water	body ID:	Dat	e:
ACP	a ornaria Salatsiya	UNT to	JAMES	RIVER	51	Dupo	11	9/2/15
ate:	County/Parish:		Company:		Crew Mem	ber Initials:	Photos: F	aling
VA	Buckin	gham	ESI	viscian dired bon sense inte	LR	,RT	SIN	I,WJ
act Number(s):		5	Nearest Milepo	st:	Ass	sociated Wet	land ID(s):	
09-001-	A001	dealer ton	N	A		WE	up001	
urvey Type: heck one)	Centerline	Re-F	Route	Access Road		Other:	and the second s	
hysical Attribute tream Classification:	5							100000
heck one)	Ephemera	I Ølnter	mittent	Perennial				
Vaterbody Type: theck one)	∃River ⊠ Stre	eam 🗆 Dito	ch 🗆 Can	al 🗌 Other	:		10	
Width: 2_ft.	OHWM Indicat (check all that apply	or: )	Clear line on bank	□Shelvir	ng D V	Wrested egetation	□Scouring	□Water staining
Height: 0.5 ft.	□Bent, n vegetatio	natted, or missir n	ng 🗆 Wrack line	e □Litter a debris	ind E	Abrupt plant community cha	□Soil cha ange	racteristic change
Width of Waterbody -	Top of Width	of Waterbody -	Toe of Slope V	Vidth of Water	oody - Wate	er Edge to	Depth of Water:	
Bank to Top of Bank:	to Toe	of Slope:	V	Vater Edge:			Approx.)	
<u>ft</u> .		ft.		V/AT	ft.		N/AW	π.
Sinuosity:	Water	velocity:	I	Bank height	12 60 7		Bank slope	N. DOMESSION
(check one)	(Approx.			Right:	1 .		Right:	75 dograd
	6. Star		fps	Left:	<u> </u>		Left:	
Meande	ring N/A				ft.			degrees
Qualitative Attrib	outes	1 Marsh	1. 1. 1.		10.000			
Water Appearance:	4							
(check one)	MNo water	IClear LITU	irbid LiShi on	surface	scum	mats	DOther:	
Substrate:			bble Grave	el 🗆 Sand	Silt/ cla	ay 🛛 Organi	c 🗆 Other:	
(check all that apply) % of Substrate:	%	%	% 5	% 15 %	80%		%%	
Width of Riparian Zo	one: Vegetati	ve Layers:					P 11. 11	
15 .	(check all 1	nat apply)	Trees	5:	Saplin	gs/Shrubs:	Herbs	
	Avg. DE	H of Dominant	s:	_in.	2	_in.	<u>_Mi</u> r	I.
Dominant Bank Veg	etation (list):			NESS STATES				
Acer ri	ubrum,	Quercus	s alba	, Micro	stegiu	n vimi	neum	
Aquatic Habitats (e)	c submerged or emer	ged aquatic veget	ation overhanging	banks/roots leaf	packs large	submerged wo	od riffies deep poo	ole):
Intern	nittent f	00015						
Aquatic Organisms	Observed (list):							
none	observ	ed						
T&E Species Obse NDNC	obser	ved						
Disturbances (ex: )	ivestock access man	ure in waterbody	waste disonarge p	ipes):				
none	obser	ved					X.	
Tributary is: (check one)	KNatu	iral	🗆 Artificial, man	-made 🗆 N	Manipulated			
Stream Quality * : (check one)	D Hig	1	Moderate	51	.cw			

			Waterbody	ID:
			sbu	P017
High Quality: Natural channel, natural vege roots; water color is clear to tea-colored; n disturbance by livestock or man.	etation extends at least one to barriers to fish movemer	or two active channel widtl ht; many fish cover types a	ns on each side; banks vailable; diverse and st	stable and protected b able aquatic habitat; n
Moderate Quality: Altered channel evidence or riparian vegetation only moderately comp film; moderate odor; minor barriers to fish mo	ed by rip-rap; natural vegetal promised; banks moderately ovement; fair aquatic habita	ion extends 1/3-1/2 of the ac / unstable; water color is cl t; minimum disturbance by li	tive channel width on ea budy, submerged object vestock or man.	ich side; filtering functio is covered with greenis
Low Quality: Channel is actively down cuttin width on each side; lack of regeneration; filte pollutants (algal mats, surface scum, surfac from livestock or man.	ng or widening; rip rap and cl aring function severely comp a sheen); heavy odor; seve	nannelization excessive; nat promised; banks unstable (e pre barriers to fish movemer	ural vegetation less than roding); water color is m it; little to no aquatic ha	1/3 of the active channe uddy and turbid; obviou bitat; severe disturbanc
Notes:			- Alle	Managerta .
	nato o have i			
meterals de Carton en en est	tanaka ana	minery constants (DWA)	2463 ( )	in moles
Waterbody Sketch (Include north arrow	r, centerline distance from	centerline, data point location 	, survey boundary, and l	Ds of associated featu
				4
				27
			217	
		-0]	bup	
		Rudy	, 5	
		A AND		
		A		
		A 200	we /	
		"gin		
		\ \		
		the constant		
and the street sector a net be desired with a				

Environmental Field Surveys Waterbody Photo Page



Waterbody sbup017 facing south upstream.



Waterbody sbup017 facing north downstream.

Photo Sheet 1 of 2

Environmental Field Surveys Waterbody Photo Page



Waterbody sbup017 facing west across bank.

Survey Description	n								
Project Name:		Waterbody Nam	e:		N	Vaterbody ID:		D	ate:
Atlantic Coast Pipe	line	UNT to Sycan	nore Cree	k	S	buz005		7	/12/2016
State:	County:	C	ompany:		Crew I	Member Initials:		Photos:	
Virginia	Buckingham	F	RM		SS			1-3	
Tract Number(s):		N	learest Mile	epost:		Associated We	etland	ID(s):	
09-001-A005		1	86.7			None			
Survey Type: (check one)	⊠Centerline	e □Re-Ro	ute	□Access Road	d	□Other:			
Physical Attribute	s								
Stream Classification:									
(cneck one)	<sup>™</sup> Ephemera	al 🗌 Interm	ittent						
Waterbody Type: (check one)	□River ⊠ Str	eam 🗆 Ditch	□ Ca	anal 🛛 🗆 Othe	r:				
онwм	OHWM Indica	tor:							
Width: _1_ft.	(cneck all that apply	/)	☑ Clear lir on bank	ne ∐Shelvir	ng	☐Wrested vegetation	L	Scouring	□Water staining
Height:	□Bent, n	natted, or missing	□Wrack li	ne 🗆 Litter a	and	□Abrupt plant	:	□Soil cha	aracteristic change
<u>0.5</u> ft. N/A□	vegetatio	n		debris		community cha	ange		
Width of Waterbody -	Top of Width o	of Waterbody - To	e of Slope	Width of Waterk	oody - W	ater Edge to	Depth	of Water:	
Bank to Top of Bank:	to Toe	of Slope:		Water Edge:		(	Approx.)	1	
<u>4</u> ft.	-	<u>2_</u> ft.			1	ft.			ft.
Sinuosity:	Water	velocity		N/A⊠ Bank beight			Rank s	slone	
(check one)	(Approx.)			Right:		-	Junite	Right:	
Straight		fps		Loft	<u>4_</u> ft.			Loffi	40 degrees
□Meanderi	ing N/A⊠			Leit.	_4_ft.			Len.	40 degrees
Qualitative Attribu	utes								
Water Appearance:	<b>Z</b>								
(check one)	<sup>⊠</sup> No water □0	Clear DTurbid	□Sh on	leen ⊡Su surface so	urface cum	□Algal □ mats	]Othei	r:	
Substrate:	Bedrock 🛛 Bo	ulder 🗆 Cobble	Grave	el 🗆 Sand	Silt/ o	clay 🗆 Organic		Other:	
% of Substrate:	%	_%%	, D	%%	<u>100 %</u>	<u>%</u> %		_%	
Width of Rinarian Zon	e Vegetative	avers:							
main of Riparian 201	(check all that	apply)	⊠ Trees	:	🛛 Saplii	ngs/Shrubs:	$\boxtimes$	Herbs	
<u>250+ ft</u> · N/A□	Avg. DBH	of Dominants:	<u>4</u> in.		<u>1</u> in.				
Dominant Bank Veget	ation (list):								
Virginia pine; hay-s	cented fern								
Aquatic Habitats (ex: s	ubmerged or emerged	d aquatic vegetation,	overhanging	banks/roots, leaf pa	cks, large	e submerged wood,	riffles,	deep pools)	:
None									
Aquatic Organisms Ol	bserved (list):								
None									
T&E Species Observe	d (list):								
None									
Disturbances (ex: livest	tock access, manure i	n waterbody, waste o	lischarge pipe	es):					
None		-							
Tributary is: (check one)	⊠ Natural	□ Artifi	cial, man-m	ade 🗌 Manip	oulated				
Stream Quality <sup>a</sup> : (check one)	□ High	□ Mod	erate	⊠ Low					

Form Rev. 07/09/2014

sbuz005

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

### Notes:

This is a small ephemeral stream that starts at a knickpoint. Runs subterranean.

N	,' 2rridor
flow	Small ephen. stream
5602005	1



Waterbody SBUZ005 facing northwest upstream



Waterbody SBUZ005 facing southeast downstream



Waterbody SBUZ005 facing southwest across

Survey Description	on	1							
Project Name:		Waterbody Na	ne:		N	/aterbody ID:			late:
Atlantic Coast Pipe	line	UNT to Syca	more Cree	k	s	buz006		7	/12/2016
State:	County:	I	Company:		Crew I	Member Initials:	:	Photos:	
Virginia	Buckingham		ERM		SS			1-3	
Tract Number(s):			Nearest Mile	epost:	J	Associated W	etland	ID(s):	
09-001-A006			187			None			
Survey Type: (check one)	⊠Centerline	e □Re-F	Route	□Access Road		□Other:			
Physical Attribute	s								
Stream Classification:									
(check one)		al 🗌 Inter	mittent	Perennial					
Waterbody Type: (check one)	□River ⊠ Str	ream 🗆 Dito	:h □C	anal 🛛 Other	:				
онwм	OHWM Indica	tor:					_		
Width:ft.	(cneck an that appl	y)	on bank	ne 🛛 Sheivin	g	Wrested vegetation		Scouring	⊔ water staining
Height:	□Bent, r	natted, or missin	g ⊡Wrack li	ne 🗆 Litter ar	nd	□Abrupt plan	t	□Soil ch	aracteristic change
ft. N/A□	vegetatio	n		debris		community ch	ange		
Width of Waterbody -	Top of Width	of Waterbody -	Toe of Slope	Width of Waterb	ody - W	ater Edge to	Depth	of Water:	
Bank to Top of Bank:	to Toe	of Slope:		Water Edge:			(Approx.)		
<u>_3 ft</u> .	_	<u>3_</u> ft.			<u>2</u> ft.				<u>_0.5</u> ft.
Sinuosity:	Water	velocity:		Bank height		1	Bank s	slope	
(check one)	(Approx.)			Right:		·		Right:	
		<u>    0.5   </u> fps	i	l oft:	<u>3_</u> ft.			Loft	<u>90</u> degrees
⊠Meander	ing N/A□			Leit.	<u>2</u> ft.			Len.	85 degrees
Qualitative Attribu	utes								
Water Appearance:	7								
(check one)	No water ⊠0	Clear 🗆 Turb	id □Sh on	neen ⊡Su n surface sci	rface um	□Algal [ mats	□Othe	r:	
Substrate:	Bedrock Bo	oulder 🗆 Cobb	le 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ c	clay 🗆 Organic		Other:	
% of Substrate:	%	%	<u>% 30</u> %	<u>60</u> %	<u>10_</u> %	%		%	
Width of Riparian Zon	e: Vegetative	e Lavers:							
	(check all that	apply)	⊠ Trees	: D	🛛 Saplir	ngs/Shrubs:	$\boxtimes$	Herbs	
<u>250+ ft</u> ∙ N/A□	Avg. DBH (approx.)	of Dominants:	<u>4</u> in.	-	_ <u>1_</u> in.				
Dominant Bank Veget	ation (list):								
Shagbark hickory;	witch hazel								
Aquatic Habitats (ex: s	ubmerged or emerge	d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood,	, riffles,	deep pools	):
Overhanging bank	roots.								
Aquatic Organisms O	bserved (list):								
None									
T&E Species Observe	d (list):								
None									
Disturbances (ex: lives	tock access, manure i	n waterbody, waste	e discharge pipe	es):					
None									
Tributary is: (check one)	⊠ Natural	□ Art	ificial, man-m	ade 🗆 Manip	ulated				
Stream Quality <sup>a</sup> : (check one)	□ High		oderate	⊠ Low					

### sbuz006

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

### Notes:

This is a medium sized perennial stream that is very sinuous.





Waterbody SBUZ006 facing west upstream



Waterbody SBUZ006 facing east downstream



Waterbody SBUZ006 facing north across

Survey Description	l .								
Project Name:		Waterbody Na	me:		w	aterbody ID:		1	Date:
Atlantic Coast Pipeli	ne	UNT to Syca	more Cree	k	st	ouz004		4	7/6/2016
State:	County:		Company:		Crew N	lember Initials	: F	Photos:	
Virginia	Buckingham		ERM		SS			1-3	
Tract Number(s):			Nearest Mile	epost:		Associated W	etland	ID(s):	
09-001-A007			186.8			None			
Survey Type: (check one)		e □Re-F	Route	⊠Access Road		□Other:			
Physical Attributes									
(check one)	Ephemera	al 🗌 Inter	mittent	⊠Perennial					
Waterbody Type:									
(check one)	River 🛛 Str	eam 🗆 Dito	ch 🗆 Ca	anal 🗌 Other:					
OHWM	OHWM Indicat	tor:			-			0	
Width: _ <u>6_</u> ft.	(Check all that apply	()	on bank		g			Scouring	staining
Height: <u>1</u> ft.	□Bent, n vegetatio	natted, or missin	g	ne □Litter ar debris	nd	□Abrupt plar community ch	it iange	□Soil ch	aracteristic change
N/A 🗆						· · · · ·	-		
Width of Waterbody - To Bank to Top of Bank:	op of Width of to Toe	of Waterbody - of Slope:	Toe of Slope	Width of Waterbo Water Edge:	ody - W	ater Edge to	Depth (Approx.)	of Water	
<u>_9_</u> ft.	-	<u>8_</u> ft.		N/A 🗆 –	<u>8_</u> ft.		N/A□	-	<u>_0.3_</u> ft.
Sinuosity:	Water	velocity:		Bank height			Bank s	lope	
(check one)	(Approx.)			Right:				Right:	
		<u>_0.5_</u> fps	6	L offi	<u>1_</u> ft.			-	45 degrees
	g N/A□			Left:	<u>8_</u> ft.			Lett	80 degrees
Water Appearance:									
	No water 🖂 🛛	Jear ⊔ l urb	old ⊔Sh on	leen ⊔Sur Isurface scu	itace Jim	⊔ Algal mats	⊔Other	:	
Substrate:	Bedrock 🗆 Bo	ulder 🗆 Cobb	ole 🛛 Grave	el 🛛 Sand 🛛	□ Silt/ c	lay 🗆 Organio	; 🗆 C	Other:	
(check all that apply) % of Substrate:	%	_%	<u>% 90</u> %	<u>   10   </u> %		_%%		%	
Width of Riparian Zone:	Vegetative	e Layers:	⊠ ∓					Llauba	
250+ ft-	Ava. DBH	of Dominants:	⊢ Irees:	: 2	⊴ Sapiir	ngs/Shrubs:	X	Herbs	
N/A	(approx.)		<u></u>	-	_ <u>1</u>				
Red maple, Mountai	n Laurel								
Aquatic Habitats (ex: sub	omerged or emerged	d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles, o	deep pools	s):
None									
Aquatic Organisms Obs	erved (list):								
Few small minnows									
T&E Species Observed	(list):								
None									
Disturbances (ex: livesto	ck access, manure i	n waterbody, waste	e discharge pipe	es):					
None		- *							
Tributary is: (check one)	⊠ Natural	□ Art	tificial, man-m	ade 🗆 Manipi	ulated				
Stream Quality <sup>a</sup> : (check one)	□ High		oderate	∑. ⊠ Low					

### sbuz004

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

Moderate Quality: Altered channel evidenced by rip-rap: natural vegetation extends 1/3-1/2 of the active channel width on each side: filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

### Notes:

Perennial stream.





Waterbody SBUZ004 facing southwest upstream



Waterbody SBUZ004 facing northeast downstream



# Waterbody SBUZ004 facing northwest across
Survey Descrip	otion											
Project Name:			Waterb	ody Name	:	_		N	laterbody ID:			Date:
Atlantic Coast P	Pipeline		UNT to	o Sycam	ore Cree	k		S	buz003		•	7/6/2016
State:	Co	unty:	•	C	ompany:			Crew I	Member Initials	5:	Photos:	
Virginia	Bu	ckinghar	n	E	RM			SS			1-3	
Tract Number(s):				N	earest Mile	epost:			Associated W	etland	I ID(s):	
09-001-A011				18	87.3				None			
Survey Type: (check one)			rline	□Re-Rou	ute	⊠A	ccess Road	d	□Other:			
Physical Attrib	utes											
Stream Classificat	ion:											
(check one)		□Ephen	neral	🗆 Intermi	ttent	⊠P	erennial					
Waterbody Type: (check one)	□Riv	er 🛛	Stream	Ditch		anal	□ Othe	r:				
онwм		OHWM Ind	licator:									
Width: <u>2</u> ft.		Check all that	арріу)		☑ Clear lir on bank	ne	⊠Shelvir	ıg	☐Wrested vegetation	L	JScouring	J ∐Water staining
Height:		□Bei	nt, matted, o	r missing	□Wrack li	ne	□Litter a	nd	□Abrupt plar	nt	□Soil cl	naracteristic change
<u>1</u> π. N/A□		veget	ation				debris		community ch	nange		
Width of Waterbook	ly - Top	of Wid	th of Water	body - To	e of Slope	Width	of Waterk	ody - W	ater Edge to	Depth	of Water	
Бапк то тор от Ба	nk:	to I	oe of Slope	:		water	Eage:			(Αρριοχ.	)	
<u>_3 f</u> f	t.		<u>2</u> ft.					<u>2</u> ft.		N/A□	-	<u>    0.5    </u> ft.
Sinuosity:		Wa	ter velocity:			Bank	height			Bank	slope	
(check one)	aht	(Арр	rox.)				Right:				Right	:
	gin		_	<u>0.5_</u> fps			l eft <sup>.</sup>	<u>2</u> ft.			l eft	<u>45</u> degrees
□Mear	ndering	N/A					2011	<u>2</u> ft.			2011	45 degrees
Qualitative Attr	ributes	;										
Water Appearance (check one)	n: ⊡No	water	⊠Clear	□Turbid	□Sh	ieen	□Su	Irface	□Algal	□Othe	er:	
Substrato		drock 🗆	Pouldor	Cabbla							Othor	
(check all that apply)			Douidei				Sanu		lay 🗆 Organic		Other.	
% of Substrate:		%	%	%	<u>90</u> %	_	<u>10_</u> %		_%%	'	%	
Width of Riparian 2	Zone:	Vegeta	tive Layers	:								
250+ ft-		(check all Avg. D	BH of Domi	nants:	⊠ Trees	:		⊠ Sapliı	ngs/Shrubs:	D	⊴ Herbs	
N/A 🗆		(approx.)			<u> </u>			<u>1</u>				
Dominant Bank Ve	egetation	n <i>(list)</i> :										
Chesthut oak, N	lountai	n Laurei										
Aquatic Habitats (e	ex: subme	erged or eme	erged aquatic v	egetation, o	overhanging	banks/r	oots, leaf pa	cks, large	submerged wood	l, riffles,	deep pool	s):
None												
Aquatic Organism	s Observ	ved (list):										
None												
T&E Species Obse	erved (lis	<i>t)</i> :										
None												
Disturbances (ex:	livestock a	access, mani	ure in waterbo	dy, waste di	scharge pipe	es):						
None					2.1							
Tributary is: (check one)		⊠ Natur	al	□ Artific	cial, man-m	ade	🗆 Manip	oulated				
Stream Quality <sup>a</sup> : (check one)		□ High		□ Mode	erate		⊠ Low					

Waterbody ID:

sbuz003

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

#### Notes:

Perennial stream on access road.

3001 Gorvidon SPOZORZ Cu Vex



Waterbody SBUZ003 facing southwest upstream



Waterbody SBUZ003 facing northeast downstream



Waterbody SBUZ003 facing southeast across

THINK HINGON DULL ONOUT	L	inear	Wa	terboo	iy D	ata	She	et
-------------------------	---	-------	----	--------	------	-----	-----	----

Survey Description	1		e		
Project Name:	Waterboo	ly Name:	W	/aterbody ID:	Date:
HCP		Sycamore	Reek	sbup 00-	> 7/14/15
State:	County/Parish:	Company:	Crew N	Member Initials:	Photos:
VA	Buckingha	mesi	R	-T, LR	W,E,N
Tract Number(s):		Nearest Milepos	t:	Associated Wetlan	id ID(s):
04-005,0	9-001-8010	N		W00	P005
(check one)	Centerline	Re-Route E	Access Road	Other:	
Physical Attribute Stream Classification:	5		PRODUCTION AND AND AND AND AND AND AND AND AND AN		n an
(check one)	□Ephemeral [	⊐Intermittent 🖌	Perennial		
Waterbody Type: (check one)	JRiver Stream	Ditch Canal	Other:		
OHWM	OHWM Indicator:				
$\frac{3}{ft}$	(Check an mat appry)	on bank		vegetation	staining
Height:	Bent, matted, or	missingWrack line	Litter and	□Abrupt plant	□Soil characteristic change
N/A⊡ft.	vegetation		debris	community change	
Width of Waterbody - 1	op of Width of Waterb	ody - Toe of Slope Wi	dth of Waterbody - W	Vater Edge to Dep	th of Water:
Bank to Top of Bank:	to Toe of Slope:	Wa	iter Edge: 	(Appn	ox.)
<u> </u>	f	t litz	<u> </u>	ft.	ft.
Sinuosity	Mater velocitur	N//	\L	Rop	
(check one)	(Approx)		Right .	Ban	Right (
	<u> </u>	fps		_ft.	degrees
」 通Meanderi		•	Left:	ft.	Left: 80 degrees
Qualitățiva Attribu			· · · · · · · · · · · · · · · · · · ·		
Water Appearance:	1103 V				
(check one)	]Nowater ∰©lear	⊡Turbid ⊡Sheer on su	n ⊡Surface rface scum	□Algal □Ot mats	her:
Substrate:	Bedrock 🖸 Boulder E	Cobble 🗹 Gravel	Sand DSilt/	clay 🗆 Organic 🛛	Other:
(check all that apply) % of Substrate:	% %	« 20 <sub>%</sub>	<i>30</i> 50	<b>%</b> %	04
			······································		<i>n</i>
Width of Riparian Zon	e: Vegetative Layers:	Maria		R+ (0)	Marine 1
<u>20</u> ft.	Avg. DBH of Domir	nants: <b>7</b> in		ings/Snrubs:	NH4 in
N/A	(approx)	n		,((1.	().
Vallinom	LONMBOSL	m, Alnus	servia	ta, Plato	anus occidentali
Aquatic Habitats (ex. s	ubmerged or emerged aquatic v	egetation, overhanging bar	ks/roots, leaf packs, larg	je submerged wood, riffi	es, deep pools):
leaf packs	s, over har	iging bai	nks		
Aquatic Organisms O	oserved (list):	$\overline{\mathbf{U}}$			
mayfly	, frogs				
T&E Species Observe	d (list):	, ,		·	
none	observed	ι .			
Disturbances (ex: lives	tock access, manure in waterbo	dy, waste discharge pipes):			· · · · · · · · · · · · · · · · · · ·
none	observed				
Tributary is:	<u> </u>				
(check one)	,씩 Natural	🗆 Artificial, man-mad	e 🛛 Manipulated	l	
(check one)	🔀 High	Moderate	🗆 Low		

.

Waterbody ID: 560 o 00*5* High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man. Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man. Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man. Notes: 7 T 1. ( × + 12 T S T Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) . sbup DUS wbup005 stoup DOb 4 L 6 data point 560P005

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Waterbody sbup005 facing west upstream.



Waterbody sbup005 facing east downstream.

Photo Sheet 1 of 2



Waterbody sbup005 facing north across bank.

Linear Waterbody Data Sheet				
Survey Description				<u> </u>
Project Name:	Waterbody Name:	M	Vaterbody ID:	Date:
HUT	4JT to Sycamo	E Ceche	5000000	1119/15
State: County/Parish:	Company:	Crewi	Member Initials: Phot	os: Facing
VH BULKIN	19 ham 155-	K	1, LK 58	I, NW, N
Tract Number(s):	J Nearest Mile	post:	Associated Wetland ID(s	):
09-005		NA	MOUTOO	5
Survey Type: (check one) Centerline	e ViRe-Route	☐Access Road	□Other:	
Physical Attributes				
Stream Classification:		L		
(cneck one) Ephemera	al Lintermittent			
(check one)	eam 🗆 Ditch 🗆 Ca	inal 🛛 Other:		
OHWM OHWM indica Width:ft.	tor:	e 🛛 Shelving	□Wrested □Sco vegetation	uring ⊡Water staining
Height: 0.5 ft. Bent, r vegetatio	natted, or missing □Wrack lin on	ne ELitter and debris	□Abrupt plant □S community change	oil characteristic change
Width of Waterbody - Top of Width	of Waterbody - Toe of Slope	Width of Waterbody - V	Water Edge to Depth of W	Vater:
Bank to Top of Bank: to Toe	of Slope: 7	Water Edge:	(Approx.)	ΛE
ft	ft.		_ftN/AF1	<u>U.S.ft</u>
Sinuosity: Water	velocity:	Bank height	Bank slop	e
(check one) (Approx.)	11	Right:	5	Right: 45 down
ViMoandering	fps	Left:		Left: 4
N/AL			_tt.	
Qualitative Attributes	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		
(check one)	Clear DTurbid DSh or	een ⊡Surface surface scum	⊡Algal ⊡Other: mats	
Substrate: 🗌 Bedrock 🗍 B	oulder 🛛 Cobble 🕅 Grav	el 🔟 Sand 💆 Silt/	clay 🛛 Organic 🛛 Othe	er:
% of Substrate:%	<u>_%% 20</u>	<u>_% 30% 50</u>	<u>&gt;</u> %%	_%
Width of Riparian Zone: Vegetativ	e Lavers:		<u> </u>	
2D = (check all the	at apply)	s: X Sap	lings/Shrubs: 🛛 📈 He	rbs
N/A	l of Dominants: <u>8</u>	_in	inN	<u>Hr</u> in.
Dominant Bank Vegetation (list): Acer subrum	Athyrium a	splenioide	s, Urtica	dioida
Aquatic Habitats (ex: submerged or emerge	ed aquatic vegetation, overhanging	i banks/roots, leat packs, larg	ge submerged wood, riffles, dee	p pools):
leaf packs	,			
Aquatic Organisms Observed (list):				
hone observed	j			
T&E Species Observed (list): NONL (DSEN)	ورا			
Disturbances (ex: livestock access, manure	e in waterbody, waste discharge pir	Des):		
none observ	ed .			
Tributary is: (check one)	l 🗆 Artificial, man-r	nade 🛛 Manipulateo	d	
(check one)	□ Moderate	□ Low		

.

Waterbody ID: 5 bup 006 High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man. Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man. Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man. 11-11 1.1 Notes: 51 ST . <u>1</u>2... Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) =sbup005 sbup006 data Point wbup005  $\checkmark$ V sbupoes ١

v.



Waterbody sbup006 facing west upstream.



Waterbody sbup006 facing east downstream.

Photo Sheet 1 of 2



Waterbody sbup006 facing north across bank.

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Survey Description		<u> </u>			
Project Name:	Waterbo	dy Name:		Waterbody ID:	Date:
HUM	4NT-	to Sycamor	z Greck	ISBUPUUY	1/14/15
State: Cou	inty/Parish:	Company:	Cr	ew Member Initials:	Photos:
VH K	suckingha	m ESI	• • • • • • • • • • • • • • • • • • •	KI, LIK	SE, NW, SW
fract Number(s):	$\cup$	Nearest Milep	ost:		ID(s):
07-005		NIP	<u>\</u>	NH	
(check one)		Re-Route	Access Road	□Other:	
Physical Attributes					an a
(check one)	Ephemeral	□Intermittent			
Waterbody Type: (check one)	er Stream	🗆 Ditch 🛛 Car	nal 🗆 Other:		<u> </u>
OHWM Width: <u>2</u> ft.	DHWM Indicator: check all that apply)	Clear line on bank	Shelving	□Wrested □ vegetation	]Scouring ⊟Water staining
Height: <u>0.5</u> , ft.	□Bent, matted, or vegetation	missing DWrack line	e □Litter and debris	□Abrupt plant community change	□Soil characteristic change
Width of Waterbody - Top o	of Width of Waterb	ody - Toe of Slope	Width of Waterbod	y - Water Edge to Depth	of Water:
Bank to Top of Bank: $\underline{3}_{ft.}$		t.	Water Edge: 	ft. N/A□	<u>0,5</u> ft.
Sinuosity: (check one) □Straight ℃Meandering	Water velocity: (Approx.)	fps	Bank height Right: Left:	,ft. 2ft.	Right: <u>75</u> degrees Left: <u>8D</u> degrees
Qualitative Attributes		· · · · · · · ·		<sup>n.</sup>	
Water Appearance:	<u> </u>				·
(check one)	water KClear	⊡Turbid □She on :	en ⊡Surfa surface scum	ce ⊟Algal ⊡Othe mats	ər:
Substrate:                Bea (check all that apply) % of Substrate:	drock	Cobble & Grave	I X Sand X % <u>40</u> % <u>4</u>	Silt/ clay □ Organic □ %%	Other:%
Width of Riparian Zone: <u>2.0 ft</u> . N/AD	Vegetative Layers: (check all that apply) Avg. DBH of Domin (approx)	及Trees: nants: <u></u> 名	jn	Saplings/Shrubs: E	i Herps NH in.
Dominant Bank Vegetation Woodwardia	areolata	, Smilax	rotona	difolia, Ac	ier rubrum
Aquatic Habitats (ex: subme leaf packs)	erged or emerged aquatic v DVCがんん	regetation, overhanging t	oanks/roots, leaf packs	, large submerged wood, riffles	, deep pools):
Aquatic Organisms Observ	frogs				
T&E Species Observed (IIs	Served			· · · · · · · · · · · · · · · · · · ·	, , <u>andress</u>
Disturbances /ov: livesteeles		dy wasta disabarga nina	c)+	· · · · · · · · · · · · · · · · · · ·	
none ob:	Servess, manure in waterbol	ay, waste user arge pipe			
Tributary is: (check one)	Natural	Artificial, man-ma	ade 🛛 Manipul:	ated	
Stream Quality <sup>a</sup> : (check one)	Aliah	□ Moderate			

Waterbody ID: 5 WP 104 High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man. Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man. Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man. en la companya de la Notes: Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features) study corridor Ð data Point Sbop ODy

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Waterbody sbup004 facing southeast upstream.



Waterbody sbup004 facing northwest downstream.

Photo Sheet 1 of 2



Waterbody sbup004 facing southwest across bank.

Survey Description	on							
Project Name:		Waterbody Na	me:		w	aterbody ID:		Date:
Atlantic Coast Pipe	eline	UNT to Walt	on Fork		S	BUC003		11/11/2013
State:	County:		Company:		Crew I	Member Initials:	Photos:	
Virginia	Buckingham		NRG		CR, C	CG	SBUC	003_001-003
Tract Number(s):			Nearest Mile	epost:		Associated Wet	land ID(s):	
09-005			186.5			WBUC002		
Survey Type: (check one)		e ⊠Re-F	Route	□ Access Road		□Other:		
Physical Attribute	es							
Stream Classification: (check one)	Ephemera	al 🛛 🖾 Inter	rmittent	Perennial				
Waterbody Type:								
(check one)	_River ⊠ Str	eam 🗆 Dito	cn ⊔Ca	anal 🗆 Other:	•			
OHWM Width: 3 ft.	OHWM Indica (check all that apply	tor: /)	⊠ Clear lir on bank	ne 🗆 Shelvin	g	□Wrested vegetation	□Scourin	g ⊡Water staining
Height:	□Bent, r	natted, or missin	ng ⊡Wrack li	ne 🗆 Litter ar	nd	Abrupt plant	□Soil c	haracteristic change
N/A□	vegetatio	1		debris		community chan	ige	
Width of Waterbody - Bank to Top of Bank:	Top of Width to Toe	of Waterbody - of Slope:	Toe of Slope	Width of Waterbe Water Edge:	ody - W	ater Edge to De	epth of Wate	r:
- 12 ft.		1 ft			15 ft			<u>0.25_</u> ft.
		<u> </u>		N/A 🗆	<u></u>	N/	A	
Sinuosity: (check one)	Water (Approx.)	velocity:		Bank height		Ba	ank slope	
□Straight		0 fps		Right:	<u>4_</u> ft.		Right	<u>30</u> degrees
⊠Meander	ing N/A□	<u> </u>		Left:	3 ft.		Lef	t: 50 degrees
Qualitative Attrib	utes							
Water Appearance:								
(check one)	No water □C	Clear 🗆 Turb	oid ⊠Sh on	neen ⊡Sui n surface scu	rface um	□Algal □0 mats	Other:	
Substrate: (check all that apply)	Bedrock Bc	oulder 🗆 Cobb	ole 🛛 Grave	el 🛛 Sand 🛛	□ Silt/ c	clay 🗆 Organic	□ Other:	
% of Substrate:	%	%	_% <u>50 %</u>	<u>   50  </u> %		_%%	%	
Width of Riparian Zon	e: Vegetative	e Layers:						
<u>12 ft</u> -	(check all that Avg. DBH	apply) of Dominants:	⊠ Trees _6_in.	:	⊠ Saplir _2_in.	ngs/Shrubs:	⊠ Herbs	
N/A□ Dominant Bank Veget	(approx.)							
WITE OAK, BEEC	H, RED MAPLE	, MOUNTAIN	I LAUREL,	WINTERBERF	RY, SN	MILAX		
Aquatic Habitats (ex: s	submerged or emerged	d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood, rit	ffles, deep poo	s):
LEAF PACKS								
Aquatic Organisms O	bserved (list):							
NONE								
T&E Species Observe NONE	<b>d</b> (list):							
Disturbances (ex: lives	tock access, manure i	n waterbody, waste	e discharge pipe	es):				
AREA WTHIN STR	REAM BUFFER	HAD BEEN	LOGGED					
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	ade 🗆 Manip	ulated			
Stream Quality <sup>a</sup> : (check one)	🗆 High	⊠ Mo	oderate	□ Low				

Waterbody ID: SBUC003

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

#### Notes:





Waterbody SBUC003 facing northwest upstream



Waterbody SBUC003 facing southeast downstream



# Waterbody SBUC003 facing southwest across

Linear Waterbody	y Data Sheet	t							
Survey Description	1								
Project Name:		Waterbody Na	ne:		Wa	aterbody ID:			Date:
Atlantic Coast Pipeli	ne	Walton Fork			SE	30C008			1/13/2015
State:	County:		Company:		Crew M	lember Initials:		Photos:	
Virginia	Buckingham		NRG		CR, A	S		SBUC	008_001-003
Tract Number(s):			Nearest Mile	epost:		Associated We	etland	ID(s):	
AR 196 (tract 09-00	5)		186.8			WBUC007			
Survey Type: (check one)		e □Re-f	Route	□ Access Road	l	Other:			
Physical Attributes	3								
Stream Classification:									
(check one)		al 🛛 Inter	mittent	Perennial					
Waterbody Type: (check one)	River 🛛 Str	eam 🗌 Dito	ch □Ca	anal 🗌 Other	:				
OHWM Width:	OHWM Indica (check all that apply	tor: v)	⊠ Clear lin on bank	ne 🗆 Shelvin	g	□Wrested vegetation		Scouring	g ⊟Water staining
Height:	□Bent, r	natted, or missin	g	ne 🗆 Litter ar	nd	□Abrupt plant		□Soil c	haracteristic change
<u>1.5</u> π. N/A□	vegetatio	'n		debris		community cha	ange		
Width of Waterbody - Te Bank to Top of Bank:	op of Width to Toe	of Waterbody - of Slope:	Toe of Slope	Width of Waterbo Water Edge:	ody - Wa	ater Edge to	Depth Approx.	of Wate	
<u>8 f</u> t.	-	<u>1_</u> ft.		N/A□	<u>3_</u> ft.	Ν	√A□		<u>1.5</u> ft.
Sinuosity:	Water	velocity:		Bank height		E	Bank	slope	
(check one)	(Approx.)			Right:	05 (1			Right	:
		<u>_1.5_</u> fps	5	Left:	<u>2.5_</u> ft.			Left	<u>60</u> degrees
Meanderin	9 N/A□				<u>2</u> ft.				50 degrees
Qualitative Attribut	tes								
Water Appearance: (check one)	No water ⊠0	Clear 🗆 Turb	id ⊡Sh on	leen ⊡Sul surface scu	rface um	□Algal □ mats	]Othe	r:	
Substrate:	Bedrock 🗆 Bo	oulder 🗆 Cobb	le 🗆 Grave	el 🛛 Sand 🛛	⊠ Silt/ cl	ay 🗆 Organic		Other:	
(check all that apply) % of Substrate:	%	%	_%	% <u>20 </u> %	<u>80 </u> %	%		%	
Width of Riparian Zone	: Vegetative	e Layers:							
<u>ft</u> .	(check all that <b>Avg. DBH</b>	apply) of Dominants:	⊠ Trees: _8_in.	:	⊠ Saplin _2_in.	gs/Shrubs:	Σ	I Herbs	
N/A⊠ Dominant Bank Vegetat	(approx.)			_					
White Oak, Shortlea	if Pine, Brooks	ide Alder, Ho	p Sedge, V	Voolgrass					
Aquatic Habitats (ex: su	bmerged or emerged	d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	ks, large :	submerged wood,	riffles,	deep pool	s):
Riffles and deep poo	ols								
Aquatic Organisms Obs	served (list):								
None									
T&E Species Observed	(list):								
None									
Disturbances (ex: livesto	ck access, manure i	n waterbody, waste	e discharge pipe	es):					
Stream runs through	n a culvert und	ler a logging i	oad						
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	ade 🗆 Manip	ulated				
Stream Quality <sup>a</sup> : (check one)	□ High	⊠ Mo	oderate	□ Low					

Waterbody ID: SBUC008

<sup>a</sup> High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.
 Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.
 Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

#### Notes:





Waterbody SBUC008 facing upstream



Waterbody SBUC008 facing downstream



Waterbody SBUC008 facing across

Survey Descriptio	n								
Project Name:		Waterbody Na	ne:		w	aterbody ID:			Date:
Atlantic Coast Pipe	line	UNT to Walte	on Fork		S	buc108			11/7/2015
State:	County:		Company:		Crew I	Member Initials	: F	Photos:	
Virginia	Buckingham		NRG		CR, A	AS .		1-3	
Tract Number(s):			Nearest Mile	epost:		Associated W	etland	ID(s):	
09-015						Wbuc106			
Survey Type: (check one)		e □Re-F	Route	⊠Access Road		□Other:			
Physical Attribute	S								
Stream Classification: (check one)	□ Ephemera	al 🛛 Inter	mittent	Perennial					
Waterbody Type:									
(check one)	River Str	eam 🗆 Dito	h 🗆 C	anal 🛛 Other	:				
ОНШМ	OHWM Indica	tor:						<u> </u>	
Width: _ <u>3_</u> ft.	(check all that appl	()	on bank	ne 🗆 Sheivin	g	vegetation		Scouring	g ⊡Water staining
Height:	□Bent, r	natted, or missin	g ⊠Wrack li	ine ⊠Litter a	nd	□Abrupt plan	t	□Soil cł	naracteristic change
ft. N/A□	vegetatio	n		debris		community ch	ange		
Width of Waterbody - 1	op of Width	of Waterbody -	Toe of Slope	Width of Waterb	ody - W	ater Edge to	Depth	of Water	:
Bank to Top of Bank:	to Toe	of Slope:		Water Edge:			(Approx.)		
<u>_10_</u> ft.	-	<u>1</u> ft.			<u>2.5_</u> ft.			-	<u>_0.4_</u> ft.
Sinuosity:	Water	velocity:		N/AL			Bank s	lone	
(check one)	(Approx.)	velocity.		Right:			Dunik S	Right	:
		<u>_0.5_</u> fps	i	L offi	<u>2.5_</u> ft.			1.044	60 degrees
⊠Meanderi	ng N/A□			Len.	<u>2.5_</u> ft.			Len	60degrees
Qualitative Attribu	ites					· · · · · · · · · · · · · · · · · · ·			
Water Appearance: (check one)	<sup>□</sup> No water ⊠0	Clear 🗆 Turb	id ⊡Sh	neen ⊡Su surface sci	rface	□Algal [ mats	□Other	:	
Substrate:	Bedrock 🗆 Bo	oulder 🗆 Cobb	le 🗆 Grav	el 🛛 Sand 🗌	⊠ Silt/ c	lay 🛛 Organic		)ther:	
(check all that apply)	0/	0/	0/ 0/	70.9/	20.0/	10.9/		0/	
	%	70	_%%	_70_%	<u>20</u> %	<u>    10   </u> %		%	
Width of Riparian Zone	e: Vegetative (check all that	e Layers:		-	🛛 Sanlir	nas/Shruhs:		Harbs	
<u>20 ft</u> ·	Avg. DBH	of Dominants:	<u> </u>	. <u></u>	<u>2</u> in.	igs/officios.		TIELDS	
Dominant Bank Vegeta	ation (list):								
White oak, America	in hornbeam, b	eech, easterr	n red cedar	r, mountain lau	rel, so	uthern lady fo	ern, Ja	apanes	e honeysuckle
Aquatic Habitats (ex: se	ubmerged or emerge	d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles, o	deep pools	s):
Leaf packs									
Aquatic Organisms Ob	served (list):								
None									
T&E Species Observed	l (list):								
None									
Disturbances (ex: livest	ock access, manure i	n waterbody, waste	e discharge pipe	es):					
Flows through a pa	rtially buried 2'	diameter culv	vert						
Tributary is: (check one)	⊠ Natural	□ Art	ificial, man-m	nade 🗆 Manip	ulated				
Stream Quality <sup>a</sup> : (check one)	□ High	⊠ Mo	oderate	□ Low					

Waterbody ID:

Sbuc108

**High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

#### Notes:





Waterbody SBUC108 facing north upstream



Waterbody SBUC108 facing south downstream



# Waterbody SBUC108 facing west across

Survey Descriptio	n								
Project Name:		Waterbody Na	me:		v	/aterbody ID:			Date:
Atlantic Coast Pipel	ine	UNT to Walt	on Fork		S	buc107			11/7/2015
State:	County:		Company:		Crew I	Member Initials	:	Photos:	
Virginia	Buckingham		NRG		CR, A	AS		1-3	
Tract Number(s):			Nearest Mile	epost:		Associated W	etland	ID(s):	
09-015						Wbuc106			
Survey Type: (check one)		e □Re-	Route	⊠ Access Road		□Other:			
Physical Attribute	s								
Stream Classification: (check one)		al ⊠Inte	rmittent	Perennial					
Waterbody Type:									
(check one)	River Sti	ream 🗌 Dit	ch 🗆 Ca	anal 🗌 Other:					
OHWM Width:	OHWM Indica (check all that appl	itor: /y)	⊠ Clear lir on bank	ne 🗆 Shelvin	g	□Wrested vegetation		Scouring	g ⊟Water staining
Height:ft.	□Bent, i vegetatio	matted, or missir on	ng ⊠Wrack li	ne ⊠Litter ar debris	nd	□Abrupt plan community ch	t lange	□Soil cł	naracteristic change
N/A⊡ Width of Waterbody - 1	op of Width	of Waterbody -	Toe of Slope	Width of Waterb	ody - W	ater Edge to	Depth	of Water	:
Bank to Top of Bank:	to Toe	of Slope:	•	Water Edge:		C C	(Approx.)	)	
<u>_10_</u> ft.	-	<u>1</u> ft.			<u>2</u> ft.			-	<u>0.3</u> ft.
Sinuosity:	Water	velocity:		N/AL			Banks	slone	
(check one)	(Approx.)	)		Right:			Dunik	Right	:
		<u>_0.5_</u> fp:	S	L oft:	<u>3_</u> ft.			L oft	<u>70</u> degrees
⊠Meanderin	ng N/A□			Lon.	<u>3_</u> ft.			Len	degrees
Qualitative Attribu	tes								
Water Appearance: (check one)	<sup>]</sup> No water ⊠	Clear □Turl	oid □Sh on	neen DSui n surface scu	rface um	□Algal [ mats	Othe	r:	
Substrate:	Bedrock 🗆 Bo	oulder 🗆 Cobl	ble 🗆 Grave	el 🛛 Sand 🛛	⊠ Silt/ c	clay 🛛 Organic	: 🗆 C	Other:	
(check all that apply) % of Substrate:	%	_%	_%%	<u>70</u> %	<u>20_</u> %	<u> 10 </u> %		%	
Width of Riparian Zone	e: Vegetativ	e Layers:							
<u>20 ft</u> -	(check all tha Avg. DBH (approx.)	t apply) I <b>of Dominants:</b>	⊠ Trees _ <u>6_</u> in.	: 2	⊠ Saplir _ <u>2_</u> in.	ngs/Shrubs:	$\boxtimes$	Herbs	
Dominant Bank Vegeta	tion (list):								
White oak, America	n hornbeam, b	eech, easter	n red cedar						
Aquatic Habitats (ex: su	ubmerged or emerge	d aquatic vegetatio	on, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles,	deep pools	5):
Leaf packs									
Aquatic Organisms Ob	served (list):								
None									
T&E Species Observed	(list):								
None									
Disturbances (ex: livest	ock access, manure	in waterbody, wast	e discharge pipe	es):				-	
		ulameter cul	vert						
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	ade 🗆 Manip	ulated				
Stream Quality <sup>a</sup> : (check one)	□ High	M	oderate	□ Low					

Waterbody ID:

Sbuc107

**High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

#### Notes:





Waterbody SBUC107 facing north upstream



Waterbody SBUC107 facing southeast downstream



## Waterbody SBUC107 facing southwest across

Survey Descriptio	n										
Project Name:		Wat	erbody Nar	ne:			v	laterbody ID:		I	Date:
Atlantic Coast Pipe	line	Wa	lton Fork				S	buc109			3/1/2016
State:	County:			Company:			Crew I	Member Initials	5:	Photos:	
Virginia	Bucking	ham		NRG			CR, S	SA		3	
Tract Number(s):				Nearest Mil	epost:			Associated W	etland	ID(s):	
09-016				190.1				None			
Survey Type: (check one)	⊠Ce	nterline	□Re-F	Route	□Ac	ccess Road		□Other:			
Physical Attribute	S										
Stream Classification: (check one)	□Ep	hemeral	□Inter	mittent	⊠Pe	erennial					
Waterbody Type:	-										
(check one)	River	Stream Stream	□ Dito	h □C	anal	□ Other:					
OHWM Width:	OHWM (check all	Indicator: that apply)		🛛 Clear li	ne	Shelvin	g	□Wrested	Σ	Scouring	g □Water
<u>    10   </u> ft.				on bank				vegetation			staining
Height:		Bent, matte	d, or missin	g ⊠Wrack I	ine	⊠Litter ar	nd	□Abrupt plar	nt	□Soil cł	naracteristic change
n. N/A□	Ve	egetation				debris		community ch	nange		
Width of Waterbody - T	Гор of	Width of W	aterbody -	Toe of Slope	Width	of Waterbo	ody - W	ater Edge to	Depth	of Water	
валк то тор ог валк:		to Toe of SI	ope:		water	Eage:			(Αρριοχ.	)	
<u>_14_</u> ft.		<u>_4_</u> f	t.			_	<u>10_</u> ft.			-	<u>_1.5_</u> ft.
Sinuosity:		Water velo	city:		Bank	heiaht			Bank	slope	
(check one)		(Approx.)	, <b>,</b> .			Right:				Right	:
			<u>_1_</u> fps			l oft	<u>5_</u> ft.			ا م	<u>70</u> degrees
⊠Meanderi	ng	N/A□				2011	<u>4_</u> ft.			2011	degrees
Qualitative Attribu	ites										
Water Appearance: (check one)	<sup>□</sup> No water	⊠Clear	□Turb	id □SI or	neen n surfac	⊡Sur e scu	face Im	□Algal mats	□Othe	er:	
Substrate:	Bedrock	Boulde	r 🗆 Cobb	le 🛛 Grav	el 🛛	Sand [	□ Silt/ c	ay 🗆 Organio		Other:	
(check all that apply) % of Substrate:	<u>70_</u> %	%	·	<u>% 20</u> %	_1	<u>0 </u> %		_%%		_%	
Width of Riparian Zone	e: Veç	etative Lay	vers:								
	(che	ck all that apply,	)	⊠ Trees	5:	$\square$	🛛 Saplir	ngs/Shrubs:	۵	☑ Herbs	
<u>80 π</u> · Ν/Α□	AVQ (app	<b>J. DBH Of D</b> rox.)	ominants:	<u>_10_</u> in.		-	<u>2</u> in.				
Dominant Bank Vegeta	ation (list):										
Eastern red cedar,	river birch	n, America	an beech,	red maple	e, Ame	erican holl	ly, gre	enbrier,			
Aquatic Habitats (ex: s	ubmerged or	emerged aqu	atic vegetatio	n, overhanging	banks/ro	oots, leaf pac	ks, large	submerged wood	l, riffles,	deep pools	s):
Overhanging roots	and bank	S									
Aquatic Organisms Ob	oserved (lis	t):									
Fish, water striders	, snails, a	lgae									
T&E Species Observed	d (list):										
None											
Disturbances (ex: livest	ock access, r	nanure in wat	erbody, waste	e discharge pip	es):						
None											
Tributary is: (check one)	⊠ Na	atural	□ Art	ificial, man-m	nade	🗆 Manipu	ulated				
Stream Quality <sup>a</sup> : (check one)	🗆 Hi	gh	⊠ Mc	oderate		□ Low					

Waterbody ID:

Sbuc109

**High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

#### Notes:

-	No.		↑ N
Mixed Hurdwood Forest		Data Point Center	
		' ጥሮ	



Waterbody SBUC109 facing south-southwest upstream



Waterbody SBUC109 facing north-northeast downstream



Waterbody SBUC109 facing west-northwest across
Linear Waterbod	y Data S	Sheet								
Survey Description	n									
Project Name:		W	aterbody Nar	ne:			Waterbody ID:		Da	ate:
Atlantic Coast Pipel	ine	Ri	pley Creek	ζ.			Sbua001		1(	0/13/2014
State:	County:	I		Company:		Crew	v Member Initials	s: P	hotos:	
Virginia	Bucking	ham		NRG		GB,	LE	;	3 photos	6
Tract Number(s):				Nearest Mile	epost:		Associated W	etland l	D(s):	
09-021; 09-023; 09- road 140	-025; at e	edge of a	ccess	188.35			none			
Survey Type: (check one)	□Ce	enterline	□Re-F	Route	⊠Access Road	ł	Other:			
Physical Attributes	s									
Stream Classification:	<b>—</b> –		_							
(check one)	⊡Ep	hemeral	⊠Inter	mittent	Perennial					
Waterbody Type: (check one)	River	⊠ Stream	n 🗆 Dito	ch □ Ca	anal 🗆 Other	r:				
ОНШМ	OHWM	Indicator:	1					_	<b>.</b> .	
Width: <u>3.0</u> ft.	(Check all	татарру)		☑ Clear lin on bank	ie 🗆 Shelvir	ng	☐Wrested vegetation	$\boxtimes$	Scouring	□Water staining
Height:ft.	⊂ ve	Bent, matt	ed, or missin	g ⊠Wrack li	ne □Litter a debris	nd	□Abrupt plar community cl	nt nange	□Soil cha	racteristic change
Width of Waterbody - T	op of	Width of V	Vaterbody -	Toe of Slope	Width of Waterb	ody -	Water Edge to	Depth o	of Water:	
Bank to Top of Bank:	-	to Toe of \$	Slope:	-	Water Edge:	-	-	(Approx.)		
<u>_6.0</u> ft.		2.0	<u>)</u> ft.			2.5_	ft.			<u>0.33_</u> ft.
Sinuosity:		Water vel	ocity:		N/A⊡ Bank height			Bank s	ope	
(check one)		(Approx.)			Right:				Right:	
			<u>_0.50</u> fp:	S	Left:	4.0_	<u>ft.</u>		Left:	80 degrees
⊠Meanderir	ng	N/A□				4.0_	ft.			80 degrees
Qualitative Attribu	tes									
Water Appearance:										
	No water	⊠Clea	ar 🗆 l urb	old ⊡Sh on	surface sc	um	□ Algal mats	UOther:		
Substrate:	Bedrock	Bould	er 🗆 Cobb	ole 🛛 Grave	el 🛛 Sand	⊠ Silt	/ clay 🛛 Organi	c □ 0	ther:	
% of Substrate:	%		%	<u>% 5</u> %	<u>65</u> %	<u>25</u> %	% <u>5</u> %		%	
Width of Riparian Zone	: Veç	getative La	ayers:							
ft.	(che Ave	ck all that app	ly) Dominants:	⊠ Trees:	:	⊠ Sap	olings/Shrubs:	$\boxtimes$	Herbs	
N/A⊠	(app	rox.)	Deminunter	<u>_6.0</u> _in.	•	1.75	<u>) in.</u>			
Dominant Bank Vegeta	ition (list):	a a a la la la		1				ا م مار د ا		
Red maple, tulip po	plar, whit	e oak, b	lackngum,	eastern red	a cedar, green	brier	, running pine	, lady l	em, dee	r-tongue grass
Aquatic Habitats (ex: su	ubmerged or	emerged aq	uatic vegetation	n, overhanging	banks/roots, leaf pao	cks, lar	ge submerged wood	d, riffles, d	leep pools):	
Small pools, overna	anging ro	ots, leaf	packs							
Aquatic Organisms Ob	served (lis	<i>t)</i> :								
trog										
T&E Species Observed	l (list):									
none										
Disturbances (ex: livesto	ock access, r	manure in wa	aterbody, waste	e discharge pipe	es):					
Old culvert crossing	, now co	llapsed;	logging in	last decade	Э					
Tributary is: (check one)	⊠ N:	atural	∏ Art	ificial, man-m	ade 🗆 Manir	ulated	ł			

⊠ Natural

🗆 High

Stream Quality<sup>a</sup>: (check one)

□ Artificial, man-made	□ Manipulated
⊠ Moderate	□ Low

Waterbody ID:

sbua001

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

#### Notes:

Segment of stream just at the edge of access road 140 corridor





Waterbody SBUA001 facing northwest upstream



Waterbody SBUA001 facing southeast downstream



# Waterbody SBUA001 facing northeast across

Survey Descriptio	n								
Project Name:		Waterbody Na	me:		w	/aterbody ID:			Date:
Atlantic Coast Pipe	line	UNT to Riple	ey Creek		sl	bua002			10/13/2014
State:	County:		Company:		Crew I	Member Initials	:	Photos:	
Virginia	Buckingham		NRG		GB, L	_E		3 photo	os
Tract Number(s):			Nearest Mile	epost:		Associated W	etland	ID(s):	
09-024			188.5			wbua002			
Survey Type: (check one)	⊠Centerline	e □Re-	Route	□ Access Road		□Other:			
Physical Attribute	S								
Stream Classification: (check one)		al 🗆 Inte	rmittent	⊠Perennial					
Waterbody Type:									
(check one)	□River ⊠ Str	ream 🗆 Dite	ch 🗆 Ca	anal 🗌 Other:	:				
OHWM Width: _ <u>5.0_</u> ft.	OHWM Indica (check all that appl	tor: <sub>V</sub> )	⊠ Clear lir on bank	ne ⊠Shelvin	g	□Wrested vegetation	Þ	Scouring	g ⊟Water staining
Height:ft.	□Bent, r vegetatio	natted, or missir	ng	ne □Litter ar debris	nd	□Abrupt plan community ch	t lange	□Soil cl	haracteristic change
Width of Waterbody - 1	Fop of Width	of Waterbody -	Toe of Slope	Width of Waterb	odv - W	ater Edge to	Depth	of Water	•
Bank to Top of Bank:	to Toe	of Slope:		Water Edge:	,,		(Approx.	)	
<u>_6.0</u> ft.	_	_4.0ft.		_	<u>4.5_</u> ft.			_	<u>0.33</u> ft.
Cinuccitur	Weter.			N/A 🗆			N/AL	-1	
(check one)	(Approx.)	velocity:		Bank neight			Banks	siope Bight	
□Straight		0.50 fp	S	Kight.	<u>2.0_</u> ft.			Night	<u>60</u> degrees
⊠Meanderi	ng N/A□			Left:	2.0 ft.			Left	:: 80 dearees
Qualitative Attribu	ites								
Water Appearance:									
(check one)	<sup>⊥</sup> No water ⊠0	Clear DTurk	oid ⊡Sh on	leen □Sul i surface sci	rface um	□ Algal mats	□Othe	r:	
Substrate:	Bedrock 🛛 Bo	oulder 🗆 Cobl	ole 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ c	clay 🛛 Organic	; 🗆 (	Other:	
(check all that apply) % of Substrate:	%	%	_% <u>10 </u> %	<u>   60  </u> %	<u>25_</u> %	<u> 5 </u> %		%	
Width of Riparian Zone	e: Vegetative	e Layers:							
100 ft.	(check all that	apply)	⊠ Trees	: 2	⊠ Saplir	ngs/Shrubs:	$\triangleright$	I Herbs	
<u>100 n</u> . N/A□	(approx.)	or Dominants.	<u>_8.0_</u> in		<u>1.0</u> in	l.			
Dominant Bank Vegeta	ation (list):								
Beech, red maple, i	ironwood, yello	w poplar, eas	stern red ce	edar, white oak	, bluet	perry, greenb	orier, r	unning	pine, wood oats
Aquatic Habitats (ex: s	ubmerged or emerge	d aquatic vegetatio	on, overhanging	banks/roots, leaf pac	ks, large	e submerged wood	, riffles,	deep pool	s):
Pools, riffles, leaf p	acks, overhang	ging roots							
Aquatic Organisms Ob	oserved (list):								
Frog, minnows, wat	ter striders								
T&E Species Observed	d (list):								
none									
Disturbances (ex: livest	ock access, manure i	n waterbody, wast	e discharge pipe	es):					
Logging road paral	lel to stream								
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	ade 🗌 Manip	ulated				
Stream Quality <sup>a</sup> : (check one)	□ High	⊠ M	oderate	□ Low	_		_		

Waterbody ID:

sbua002

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

#### Notes:

UNT to Ripley Creek, continues out of corridor both directions, wetland wbua002 is in discrete pockets which abut stream channel.





Waterbody SBUA002 facing west upstream



Waterbody SBUA002 facing east downstream



Waterbody SBUA002 facing south across

Survey Descriptio	n								
Project Name:		Waterbody Na	ame:		v	aterbody ID:			Date:
Atlantic Coast Pipe	line	UNT to Ripl	ey Creek		S	SBUC050			5/27/2015
State:	County:		Company:		Crew I	Member Initials	:	Photos:	
Virginia	Buckingham		NRG		CR, A	AS		SBUC	050_001-003
Tract Number(s):			Nearest Mile	epost:		Associated W	etland	ID(s):	
Compressor site #2	2 Primary Site		186			WBUB050			
Survey Type: (check one)		e ⊡Re-	Route	□Access Road		⊠Other: Com	press	or Sta	tion 2
Physical Attribute	S								
Stream Classification: (check one)	□ Ephemera	al 🛛 🖾 Inte	ermittent	Perennial					
Waterbody Type:									
(check one)	□River ⊠ Str	ream 🗆 Dir	tch 🗆 C	anal 🗌 Other	:				
онwм	OHWM Indica	tor:							
<b>Width:</b> ft.	(check all that appl	<i>y)</i>	⊠ Clear lii on bank	ne ⊡Shelvin	g	☐Wrested vegetation		Scourin	g □Water staining
Height:	□Bent, r	natted, or missi	ng 🗆 Wrack li	ine 🛛 Litter ar	nd	□Abrupt plan	t	□Soil c	haracteristic change
_ <u>_1_</u> ft. N/A□	vegetatio	ึ้	0	debris		community ch	ange		C C
Width of Waterbody - Bank to Top of Bank:	Top of Width	of Waterbody -	Toe of Slope	Width of Waterbe	ody - W	ater Edge to	Depth (Approx.)	of Wate	r:
	10 100	or orope.		Trato: Eugo.			,		0.2 #
<u>_8_</u> ft.	-	<u>1_</u> ft.		N/A□ -	<u>3</u> ft.		N/A□		<u>_0.5_</u> 1t.
Sinuosity:	Water	velocity:		Bank height			Bank s	lope	
(check one)	(Approx.)			Right:				Right	:
, , , , , , , , , , , , , , , , , , ,		<u>1</u> fps	6	Left:	<u>1.5_</u> ft.			Lef	<u>80</u> degrees
Meanderi	ng N/A□			-	<u>2.5_</u> ft.				70 degrees
Qualitative Attribu	ites								
(check one)	<sup>□</sup> No water ⊠0	Clear □Tur	bid ⊡Sł or	neen ⊡Sui n surface sci	rface um	□Algal [ mats	] Other	-	
Substrate:	Bedrock Bc	oulder 🗆 Cob	ble 🛛 Grav	el 🛛 Sand 🛛	⊠ Silt/ d	clay 🛛 Organic		Other:	
(check all that apply) % of Substrate:	%	%	% 10 %	60 %	20 %	10 %		%	
					20 /0	<u> </u>			
width of Riparian Zon	(check all that	t apply)	⊠ Trees	:	⊠ Sapliı	ngs/Shrubs:	$\boxtimes$	Herbs	
<u>_30_ft</u> - N/A□	Avg. DBH (approx.)	of Dominants:	<u>_12_</u> in.	-	_ <u>2_</u> in.	C C			
Dominant Bank Vegeta	ation (list):								
Red Maple, Sweet-	gum, carex gra	iy, mockernu	it hickory, fa	alse solomons s	seal, s	outhern lady	fern,	commo	on smilax
Aquatic Habitats (ex: s	ubmerged or emerge	d aquatic vegetati	on, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles,	deep pool	s):
Riffle/pool sequenc	e								
Aquatic Organisms Ob	oserved (list):								
None									
T&E Species Observed	d (list):								
None									
Disturbances (ex: livest	ock access, manure i	in waterbody, was	te discharge pip	es):					
Maintained gas line	e ROW present	for approxin	nately the fi	rst 40 feet upst	ream				
Tributary is: (check one)	⊠ Natural	□ A	rtificial, man-m	nade 🗆 Manip	ulated				
Stream Quality <sup>a</sup> : (check one)	□ High	⊠ N	loderate	□ Low					

**High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

Notes:

Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)

P

SBUC05

V

008050



Waterbody SBUC050 facing west upstream



Waterbody SBUC050 facing south across



## Waterbody SBUC050 facing east downstream

Survey Descriptio	n								
Project Name:		Waterbody Na	me:		W	Vaterbody ID:			Date:
Atlantic Coast Pipe	line	UNT to Riple	ey Creek		s	sbuz002			5/23/2016
State:	County:		Company:		Crew I	Member Initials:	: F	hotos:	
Virginia	Buckingham		ERM		SS &	AS		1 - 3	
Tract Number(s):	·		Nearest Mile	epost:		Associated W	etland	ID(s):	
09-029			192			wbub051			
Survey Type: (check one)	⊠Centerline	e □Re-I	Route	□Access Road	k	□Other:			
Physical Attribute	S								
Stream Classification: (check one)	Ephemera	al 🛛 🖾 Inter	rmittent	Perennial					
Waterbody Type:									
(check one)	□River ⊠ Str	eam 🗆 Dito	ch 🗆 C	anal 🛛 🗆 Other	:				
OHWM Width:	OHWM Indica (check all that apply	tor: /)	⊠ Clear lir	ne 🗆 Shelvir	ng	□Wrested vegetation		Scouring	□Water staining
<u> </u>									Stanning
ft. N/A□	□Bent, r vegetatio	natted, or missir n	ng ⊡Wrack li	ne □Litter a debris	nd	☐ Abrupt plant community character	t ange	□Soil ch	aracteristic change
Width of Waterbody - 1	Top of Width of	of Waterbody -	Toe of Slope	Width of Waterb	ody - W	ater Edge to	Depth o	of Water	:
Bank to Top of Bank:	to Toe	of Slope:		Water Edge:		0	(Approx.)		
<u>_3</u> ft.	-	<u>2_</u> ft.			<u>2</u> ft.			(	<u> 0.5 - 1_</u> ft.
Sinuosity:	Water	velocity		N/AL			Bank s	lone	
(check one)	(Approx.)	veloony.		Right:			Dunk S	Right:	
⊠ Straight		<u>   1  </u> fps		L offi	<u>1_</u> ft.			Loft	90 degrees
□Meanderi	ng N/A□			Len.	<u>1_</u> ft.			Leit	<u>90</u> degrees
Qualitative Attribu	ites			-					
Water Appearance:					rfooo		Othor		
			or	i surface sc	um	mats		•	
Substrate:	Bedrock 🗆 Bo	ulder 🗆 Cobb	ole 🗆 Grav	el 🛛 Sand	⊠ Silt/ o	clay 🛛 Organic		ther:	
% of Substrate:	%	%	_%	%%	<u>100 %</u>	<u>     %</u>		%	
Width of Riparian Zone	e: Vegetative	e Layers:							
250 #	(check all that	apply)		s: [	Saplin	ngs/Shrubs:		Herbs	
<u></u> . N/A□	Avg. DBH (approx.)	of Dominants:		_in.	<u>3</u> in.				
Dominant Bank Vegeta	ation (list):								
Kalmia latifolia									
Aquatic Habitats (ex: s	ubmerged or emerged	d aquatic vegetatio	n, overhanging	banks/roots, leaf pag	cks, large	e submerged wood,	riffles, c	leep pools	3):
None									
Aquatic Organisms Ob	oserved (list):								
None									
T&E Species Observed	d (list):								
None									
Disturbances (ex: livest	ock access, manure i	n waterbody, wast	e discharge pipe	es):					
None									
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	iade 🗆 Manip	ulated				
Stream Quality <sup>a</sup> : (check one)	□ High		oderate	⊠ Low					

Waterbody ID:

#### sbuz002

**High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

#### Notes:

This is an intermittent stream that begins as wetland drainage in wbub051.







Waterbody sbuz002 facing west upstream



Waterbody sbuz002 facing east downstream



Waterbody sbuz002 facing south across

Survey Description	า								
Project Name:		Waterbody Na	me:		w	aterbody ID:			Date:
Atlantic Coast Pipeli	ine	UNT to Math	news Creek	K	S	BUC004			11/11/2014
State:	County:		Company:		Crew I	Member Initials:	:	Photos:	
Virginia	Buckingham		NRG		CR, C	CG		3	
Tract Number(s):	•		Nearest Mile	epost:	•	Associated We	etland	ID(s):	
09-040, 09-040-A00	)1		190.33			None			
Survey Type: (check one)	⊠Centerline	e □Re-	Route	□Access Road		□Other:			
Physical Attributes	5								
Stream Classification: (check one)	Ephemera	al □Inte	rmittent	⊠Perennial					
Waterbody Type:									
(check one)	River 🛛 Str	ream 🗆 Dit	ch 🗆 C	anal 🗌 Other:					
ОНШМ		tor:							
Width: _ <u>5</u> ft.	(crieck all triat apply	¥)	on bank	ne 🛛 Sneivin	g	vegetation		Scourine	staining
Height:	□Bent, n	natted, or missir	ng ⊡Wrack li	ine □Litter ar	nd	□Abrupt plant	t	□Soil cl	haracteristic change
_ <u>1_</u> ft. N/A□	vegetatio	n		debris		community cha	ange		
Width of Waterbody - T Bank to Top of Bank:	op of Width of Toe	of Waterbody -	Toe of Slope	Width of Waterbe	ody - W	ater Edge to	Depth (Approx.)	of Wate	
- <i>(</i>				Traio. Eugo.		,	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		0.2 #
<u></u> ft.	-	<u>1_</u> ft.		N/A□	<u>1.5_</u> ft.	r	N/A□		<u>_0.2</u> 1t.
Sinuosity:	Water	velocity:		Bank height		F	Bank s	lope	
(check one)	(Approx.)			Right:	o = <i>4</i>			Right	:
		<u>_0.2</u> fp	S	Left:	<u>2.5_</u> ft.			Left	<u>90</u> degrees
Meanderin	ng N/A□				<u>2_</u> ft.				80 degrees
Qualitative Attribut	tes								
(check one)	No water	Clear □Tur	bid □Sh or	neen ⊡Sui n surface sci	rface um	□Algal [ mats	Othe		
Substrate:	Bedrock 🗆 Bo	oulder 🗆 Cob	ble 🛛 Grav	el 🛛 Sand 🛛	□ Silt/ c	lay 🗆 Organic		Other:	
(check all that apply) % of Substrate:	%	%	_% <u>30 %</u>	<u>70</u> %		_%%		%	
Width of Riparian Zone	: Vegetative	e Lavers:							
	(check all that	apply)	⊠ Trees	: [	Saplir	ngs/Shrubs:	$\boxtimes$	Herbs	
<u>_30_ft</u> - N/A□	Avg. DBH (approx.)	of Dominants:	<u>8</u> in.	-	-	_in.			
Dominant Bank Vegeta	tion (list):								
Beech, Red Oak, Re	ed Maple, Smi	lax, Violet							
Aquatic Habitats (ex: su	bmerged or emerged	d aquatic vegetatio	on, overhanging	banks/roots, leaf pac	ks, large	submerged wood,	riffles,	deep pool	s):
Overhanging roots a	an banks								
Aquatic Organisms Ob	served (list):								
Minnows									
T&E Species Observed	(list):								
None									
Disturbances (ex: livesto	ock access, manure i	n waterbody, wast	te discharge pipe	es):					
None									
Tributary is: (check one)	⊠ Natural		rtificial, man-m	nade 🗌 Manipi	ulated				
Stream Quality <sup>a</sup> : (check one)	🗆 High	⊠M	oderate	□ Low					

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

#### Notes:





Stream SBUC004 facing northeast upstream



Stream SBUC004 facing southwest downstream



# Stream SBUC004 facing southeast across

Survey Descriptior	า							
Project Name:		Waterbody Na	me:		W	aterbody ID:		Date:
Atlantic Coast Pipeli	ne	North River			S	BUC005		11/12/2014
State:	County:		Company:		Crew I	Member Initials:	Photos:	
Virginia	Buckingham		NRG		CR, C	G	3	
Tract Number(s):			Nearest Mile	epost:		Associated Wetla	and ID(s):	
09-040			191.27			None		
Survey Type: (check one)		⊠Re-I	Route	□Access Road		□Other:		
Physical Attributes	5							
Stream Classification: (check one)	□ Ephemera	l ⊡Inter	rmittent	⊠Perennial				
Waterbody Type:								
(check one)	River 🛛 Stre	eam 🗆 Dito	ch 🗆 Ca	anal 🗌 Other:				
ОНШМ	OHWM Indicat	tor:						
Width: _ <u>30_</u> ft.	(спеск ан тпат арріу	9	☑ Clear lin on bank	ne ⊡Shelvin	g	☐Wrested vegetation	⊔Scourin	g ⊟Water staining
Height:	□Bent, n	natted, or missin	ig ⊡Wrack li	ne ⊠Litter ar	nd	⊠Abrupt plant	□Soil c	haracteristic change
<u>3.5</u> ft. N/A□	vegetatio	n	-	debris		community chang	ge	-
Width of Waterbody - To Bank to Top of Bank:	op of Width of to Toe	of Waterbody - of Slope:	Toe of Slope	Width of Waterbe Water Edge:	ody - W	Vater Edge to De (App	pth of Wate	r:
<u>_35_</u> ft.	-	<u>6_</u> ft.		-	<u>25_</u> ft.	N1//		<u>_1.5_</u> ft.
Sinuccity	Watory			N/AL		IN/F		
(check one)	(Approx.)	velocity.		Bank neight		Da	Righ	·-
		_ <u>1.5_</u> fps	5		<u>7_</u> ft.			<u>80</u> degrees
⊠Meanderin	9 N/A□			Left:	<u>10_</u> ft.		Lef	t: <u>80</u> degrees
Qualitative Attribut	tes							
Water Appearance: (check one)	No water 🛛 🖂 🔿	Clear □Turb	oid ⊓Sh	neen □Su	face	∏Algal ∏C	)ther:	
			on	surface scu	um	mats		
Substrate:	Bedrock 🗆 Bo	ulder 🛛 Cobb	ole 🛛 Grave	el 🛛 Sand 🛛	□ Silt/ c	lay 🗆 Organic	□ Other:	
% of Substrate:	%	<u>% 10</u> %	<u>   30  </u> %	<u>   60  </u> %		_%%	%	
Width of Riparian Zone:	Vegetative	Layers:						
100 ft.	(check all that	apply)	⊠ Trees	: D	Saplir	ngs/Shrubs:	⊠ Herbs	
<u></u> N/A□	(approx.)	or Dominants.	<u>_10_</u> ln.	-	<u>2</u> in.			
Dominant Bank Vegetat	tion (list):							
Red maple, Red oak	k, Sycamore, A	merican hori	nbeam, Ch	ristmas fern, B	eech			
Aquatic Habitats (ex: sul	bmerged or emerged	aquatic vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood, riff	les, deep poo	ls):
Overhanging roots,	pools, riffles, s	ubmerged 8	in logs					
Aquatic Organisms Obs	served (list):							
Minnows, water stric	lers							
T&E Species Observed	(list):							
None								
Disturbances (ex: livesto	ck access, manure i	n waterbody, wast	e discharge pipe	es):				
None								
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	ade 🛛 Manip	ulated			
Stream Quality <sup>a</sup> : (check one)	🗆 High	⊠ Mo	oderate	□ Low				

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

#### Notes:





Stream SBUC005 facing west upstream



Stream SBUC005 facing east downstream



# Stream SBUC005 facing south across

Survey Description	on								
Project Name:		Waterbody Na	me:		W	aterbody ID:			Date:
Atlantic Coast Pipe	line	UNT to Nort	h River		S	BUC006		-	11/12/2014
State:	County:		Company:		Crew I	Member Initials:	: P	hotos:	
Virginia	Buckingham		NRG	NRG CR,			3	3	
Tract Number(s):			Nearest Milepost:			Associated Wetland ID(s):			
09-040			191.3			None			
Survey Type: (check one)		e ⊠Re-I	Route	□ Access Road		□Other:			
Physical Attribute	es								
Stream Classification: (check one)		al 🛛 Inte	rmittent	Perennial					
Waterbody Type: (check one)	□River ⊠ Str	ream 🗆 Dite	ch 🗆 Ca	anal 🗌 Other	:				
OHWM		tor							
Width: <u>3</u> ft.	(check all that appl	<i>y</i> )	☑ Clear lir on bank	ne 🗆 Shelvin	g	□Wrested vegetation		Scouring	l □Water staining
Height:	⊟Bent, r	matted, or missir	ng ⊡Wrack li	ne 🗆 Litter ar	nd	□Abrupt plant	t [	⊒Soil ch	naracteristic change
<u>.5</u> π. N/A□	vegetatio	n		debris		community cha	ange		
Width of Waterbody - Bank to Top of Bank:	Top of Width	of Waterbody -	Toe of Slope	Width of Waterbo	ody - W	ater Edge to	Depth o (Approx.)	of Water	:
0.4		4 5 4		Tuto: Lugo:			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		ft
<u></u> n.	-	<u>_1.5_</u> π.		 N/A⊠		τ.	N/A⊠		n.
Sinuosity:	Water	velocity:		Bank height		E	Bank sl	оре	
	(Approx.)	<u>،</u>	20	Right:	⊿ ft			Right	60 degrees
		I	ps	Left:	<u></u> n.			Left	<u>- 00</u> degrees
	Ing N/A⊠				<u>5_</u> ft.				<u>60</u> degrees
Qualitative Attribu	utes								
(check one)	$^{\boxtimes}$ No water $\Box$ (	Clear 🗆 Turk	oid □Sh on	neen ⊡Sui n surface scu	rface um	□Algal □ mats	∃Other:		
Substrate:	Bedrock Bo	oulder 🗆 Cobb	ole 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ c	lay 🗆 Organic		ther:	
(check all that apply) % of Substrate:	_%	%	<u>% 10</u> %	<u>   80  </u> %	<u>10_</u> %	%		_%	
Width of Riparian Zon	e: Vegetative	e Lavers:							
	(check all that	t apply)	⊠ Trees	: D	⊠ Saplir	ngs/Shrubs:	$\boxtimes$	Herbs	
<u>π</u> · N/A⊠	AV <b>G. DBH</b> (approx.)	of Dominants:	<u>8</u> in.	-	<u>2</u> in.				
Dominant Bank Veget	ation (list):								
American hornbear	m, Red maple,	Christmas fei	rn, Japanes	se honeysuckle					
Aquatic Habitats (ex: s	ubmerged or emerge	d aquatic vegetatic	on, overhanging	banks/roots, leaf pac	ks, large	submerged wood,	riffles, d	eep pools	5):
None									
Aquatic Organisms Ol	bserved (list):								
None									
T&E Species Observe	d (list):								
None									
Disturbances (ex: lives	tock access, manure i	in waterbody, wast	e discharge pipe	es):					
None									
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	ade 🗌 Manip	ulated				
Stream Quality <sup>a</sup> : (check one)	□ High	⊠ Mo	oderate	□ Low			-	-	

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

#### Notes:





Stream SBUC006 facing south upstream



Stream SBUC006 facing north downstream



## Stream SBUC006 facing west across

Survey Description	n							
Project Name:		Waterbody Na	me:		v	/aterbody ID:		Date:
Atlantic Coast Pipeline		UNT to North	h River		S	BUC007		11/13/2014
State:	County:		Company:		Crew I	Member Initials:	Photos:	
Virginia	Buckingham		NRG		CR, C	CG	3	
Tract Number(s):			Nearest Mile	epost:		Associated Wetl	and ID(s):	
09-040			192.03			None		
Survey Type: (check one)		e ⊠Re-I	Route	□ Access Road		Other:		
Physical Attribute	s							
Stream Classification: (check one)		al 🛛 🖂 Inter	rmittent	Perennial				
Waterbody Type: (check one)	□River ⊠ Sti	ream 🗆 Dito	ch 🗆 C	anal 🗌 Other	:			
OHWM Width: _ <u>12</u> ft.	OHWM Indica (check all that appl	itor: y)	⊠ Clear lir on bank	ne ⊠Shelvin	g	□Wrested vegetation	□Scourin	g ⊟Water staining
Height: <u>2</u> ft.	□Bent, r vegetatio	matted, or missin	ng	ne □Litter ar debris	nd	□Abrupt plant community chang	⊡Soil c ge	haracteristic change
Width of Waterbody - Bank to Top of Bank:	Top of Width to Toe	of Waterbody - of Slope:	Toe of Slope	Width of Waterb Water Edge:	ody - W	Ater Edge to De	pth of Wate	r:
<u>_15_</u> ft.	-	_ <u>1.5_</u> ft.		N/A⊠	f	ft. N/A	<b>A</b> ⊠	ft.
Sinuosity: ( <sup>check one)</sup> □Straight		velocity: f	ps	Bank height Right: Left:	<u>4</u> ft.	Ba	nk slope Righ Lef	t: <u>80</u> degrees t:
					<u> </u>			
Water Appearance:								
(check one)	<sup>⊠</sup> No water □	Clear DTurk	oid □Sh or	neen 🗆 Sui n surface scu	rface um	□Algal □C mats	Other:	
Substrate: [ (check all that apply) % of Substrate:	☐ Bedrock ⊠ Bo	oulder ⊠ Cobb % <u>30_</u> %	ble ⊠ Grav _ <u>20_</u> %	el ⊠ Sand [ _40_% _	□ Silt/ o	clay □ Organic _%%	□ Other: %	
Width of Riparian Zon <u>30</u> ft⊦ N/A⊡	e: Vegetative (check all that Avg. DBH (approx.)	e Layers: tapply) of Dominants:	⊠ Trees _ <u>8_</u> in.	: D	⊠ Sapliı _ <u>2_</u> in.	ngs/Shrubs:	⊠ Herbs	
Dominant Bank Veget Sycamore, River B	ation <i>(list)</i> : irch, Red Ceda	r, Red Maple	, Beech, Cl	nristmas Fern,	Japan	ese Honeysuck	kle	
Aquatic Habitats (ex: s Overhanging backs	ubmerged or emerge s and roots, Bo	d aquatic vegetatio ulder/roc piles	on, overhanging s, leaf pack	banks/roots, leaf pac s, deep pools a	ks, large and rif	submerged wood, rif	fles, deep poo	ls):
Aquatic Organisms Ol	oserved (list):							
Water Striders								
T&E Species Observe None	d (list):							
Disturbances (ex: livest	ock access, manure	in waterbody, wast	e discharge pipe	es):				
None								
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	ade 🗆 Manip	ulated			
Stream Quality <sup>a</sup> : (check one)	□ High		oderate	□ Low				

High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

**Moderate Quality:** Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.

Low Quality: Channel is actively down cutting or widening; rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regeneration; filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.

#### Notes:

Standing water is present in some pools throughout the stream but no flowing water was present at the time of survey





Stream SBUC007 facing southwest upstream



Stream SBUC007 facing northeast downstream