

Waterbody SAUB104 facing south downstream

Survey Description	on										
Project Name:			dy Name					aterbody ID:			Date:
Atlantic Coast Pipe	eline	UNT to	Calfpas	sture Riv	er		S	AUB105			4/23/2015
State:	County:		Co	ompany:			Crew N	lember Initials	:	Photos:	
Virginia	Augusta		NI	RG			TP, A	S		01-03	
Tract Number(s):			Ne	earest Mile	epost:			Associated W	etland	ID(s):	
07-001-A005, 07-0	001-A007		11	10.55				WAUB100			
Survey Type: (check one)	⊠Cente	rline	□Re-Rou	ite	□Aco	cess Road		Other:			
Physical Attribute											
Stream Classification (check one)	: □Epher	meral	⊠Intermit	ttent	□Pei	rennial					
Waterbody Type: (check one)	□River ⊠	Stream	Ditch	□ Ca	anal	Other:	:				
OHWM Width: 3.0 ft.	OHWM Inc (check all that			⊠ Clear lir on bank	ne	Shelvin	g	□Wrested vegetation		Scouring	g ⊟Water staining
Height: <u>0.5</u> ft. N/A□		nt, matted, or tation	missing	□Wrack li	ne	□Litter ar debris	nd	□Abrupt plar community ch		□Soil cl	haracteristic change
Width of Waterbody -	Top of Wid	dth of Waterb	ody - Toe	e of Slope	Width o	of Waterb	ody - W	ater Edge to	Depth	of Water	
Bank to Top of Bank:		Toe of Slope:		•	Water I		•	Ū	(Approx.)		
<u>_4</u> ft.		<u>1_</u> ft.			N/A□	_	<u>3</u> ft.		N/A□	-	<u>_025_</u> ft.
Sinuosity:		ter velocity:			Bank h	eight			Bank s	slope	
(check one)	(Арг	prox.)				Right:				Right	
		1	<u>.5</u> fps			Left:	<u>1_</u> ft.			Left	<u>80</u> degrees
Meander	ring N/A	\square					<u>1_</u> ft.				80 degrees
Qualitative Attrib	utes										
Water Appearance: (check one)	\Box No water	⊠Clear	□Turbid	□Sh on	ieen i surface	⊡Sui sci		□Algal mats	□Othe	r:	
Substrate:	Bedrock	Boulder	Cobble	⊠ Grave	el 🖂	Sand 🛛	⊠ Silt/ cl	lay 🗆 Organio	; 🗆 (Other:	
(check all that apply) % of Substrate:	%	%	_%	<u> 5 </u> %	_5	_%	<u>90_</u> %	%		%	
Width of Riparian Zor	ne: Vegeta	ative Layers:									
<u>10 ft</u> .	Avg. D	ll that apply) OBH of Domir	nants:	⊠ Trees _ <u>7_</u> in.	:		⊠ Saplin _ <u>2_</u> in.	igs/Shrubs:		Herbs	
N/A□ Dominant Bank Veget	(approx.)	1									
Planted alder and		cue									
Aquatic Habitats (ex:	submerged or eme	erged aquatic v	egetation, o	verhanging	banks/roo	ots, leaf pac	ks, large	submerged wood	, riffles,	deep pool	s):
none											
Aquatic Organisms O	bserved (list):										
None											
T&E Species Observe	ed (list):										
none											
Disturbances (ex: lives Straightened by la			-			other th	an fes	CUA			
		ginenis U	JUCAIII		builet,		011165				
Tributary is: (check one)	Natur	ral	□ Artific	ial, man-m	ade	🗆 Manip	ulated				
Stream Quality ^a : (check one)	🗆 High		⊠ Mode	rate		□ Low					

Waterbody ID: SAUB105

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:

Weak sinuosity, weak bed and bank, no grade control, no riffle pool complex.





Waterbody SAUB105 facing northeast upstream



Waterbody SAUB105 facing east across



Waterbody SAUB105 facing south downstream

Survey Description	n										
Project Name:			ody Name					aterbody ID:			Date:
Atlantic Coast Pipe	line	UNT to	o Barn L	ick Brand	ch		S	AUB106			4/27/2015
State:	County:		С	ompany:			Crew I	Member Initials	8:	Photos:	
Virginia	Augusta		N	RG			TP, A	S		01-03	
Tract Number(s):			N	earest Mile	epost:			Associated W	etland	ID(s):	
07-001-A007, 07-0	01-A008		1	11.1				none			
Survey Type: (check one)	⊠Cente	rline	□Re-Ro	ute	□Ac	ccess Road		□Other:			
Physical Attribute	S										
Stream Classification: (check one)	⊠Epher	neral		ittent	□P€	erennial					
Waterbody Type: (check one)	□River ⊠	Stream	Ditch	□ Ca	anal	Other:					
онwм		llaatan									
Width: 0.5_ft.	OHWM Inc (check all that			□ Clear lir on bank	ne	□Shelvin	g	□Wrested vegetation		Scouring	g ⊟Water staining
Height: 	□Be veget	nt, matted, o	r missing	□Wrack li	ne	⊠Litter ar debris	nd	□Abrupt plar community ch		□Soil c	haracteristic change
N/A 🗆			<u> </u>		har 1/1				•		
Width of Waterbody - ` Bank to Top of Bank:		ith of Water foe of Slope		e of Slope		of Waterbo	ody - W	ater Edge to	(Approx.	of Wate	1
<u>_1_f</u> t.		<u>_0.5_</u> ft.				_	<u>0.5_</u> ft.		N/A□		<u>_0.1_</u> ft.
Sinuosity:	Wa	ter velocity:			N/A⊡ Bank	height			Bank	slope	
(check one)		prox.)			Dunit	Right:			Dunit	Right	:
		_	<u>1.0_</u> fps			Left:	<u>1_</u> ft.			Left	<u>80</u> degrees
⊠Meanderi	ing N/A					Leit.	<u>1_</u> ft.			Len	_ <u>80</u> degrees
Qualitative Attribu	utes										
Water Appearance: (check one)	[□] No water	⊠Clear	□Turbid	□Sh on	een surfac	⊡Sur e scu		□Algal mats	□Othe	r:	
	Bedrock	Boulder		⊠ Grave	el 🛛	Sand D	⊠ Silt/ c	lay 🗆 Organio		Other:	
(check all that apply) % of Substrate:	%	%	_%	<u> 5 </u> %	_5	<u>%</u>	<u>90_</u> %	%)	%	
Width of Riparian Zon	e: Vegeta	tive Layers									
<u>30 ft</u> -	Avg. D	l that apply) BH of Domi	nants:	⊠ Trees _ <u>12_</u> in.	:		I Saplir _ <u>2_</u> in.	ngs/Shrubs:		Herbs	
N/A□ Dominant Bank Veget	(approx.) ation (list):										
Northern red oak, v		ugar mapl	e, shagt	oark hicko	ory						
Aquatic Habitats (ex: s	ubmerged or eme	erged aquatic v	egetation,	overhanging	banks/ro	oots, leaf pac	ks, large	submerged wood	l, riffles,	deep pool	s):
none											
Aquatic Organisms Ol	oserved (list):										
None											
T&E Species Observe	d (list):										
none											
Disturbances (ex: livest	ock access, man	ure in waterbo	dy, waste d	ischarge pipe	es):						
none											
Tributary is: (check one)	⊠ Natur	al	□ Artific	cial, man-m	ade	🗆 Manipu	ulated				
Stream Quality ^a : (check one)	□ High		⊠ Mode	erate		□ Low					

Waterbody ID: SAUB106

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:

Ephemeral stream. Weak bed and bank, weak sinuosity, riffle pool absent, rooted vegetation in channel. Pasture on left bank.





Waterbody SAUB106 facing northwest upstream



Waterbody SAUB106 facing northeast across



Waterbody SAUB106 facing southeast downstream

Survey Description	on										-
Project Name:			ody Name					/aterbody ID:			Date:
Atlantic Coast Pipe	eline	UNT t	o Barn L	ick Brand	ch		s	AUB107			4/27/2015
State:	County:		С	ompany:			Crew I	Member Initials	:	Photos:	
Virginia	Augusta	l	N	IRG			TP, A	S		01-03	
Tract Number(s):			N	learest Mile	epost:			Associated W	etland	ID(s):	
07-001-A008			1	11.15				WAUB101			
Survey Type: (check one)	⊠Ce	enterline	□Re-Ro	ute	□Ac	cess Road		□Other:			
Physical Attribute	es										
Stream Classification			_								
(check one)	⊔Ep	hemeral	⊠Interm	ittent	Πbe	erennial					
Waterbody Type: (check one)	□River	⊠ Stream	□ Ditch		anal	Other:	:				
ОНШМ		Indicator:									
Width: <u>1.0</u> ft.	(check all	that apply)		Clear lir on bank	ne	Shelvin	g	☐Wrested vegetation		Scouring	g □Water staining
Height:		Bent, matted, o	or missing	□Wrack li	ne	⊠Litter ar	nd	□Abrupt plar	ıt	□Soil c	haracteristic change
ft. N/A□	Ve	egetation				debris		community ch	nange		
Width of Waterbody -		Width of Wate		e of Slope			ody - W	ater Edge to		of Wate	:
Bank to Top of Bank:		to Toe of Slop	e:		Water	Edge:			(Approx.)	
<u>_2_</u> ft.		<u>_0.5</u> ft.			N/A□		<u>1.0_</u> ft.		N/A□		<u>_0.1_</u> ft.
Sinuosity:		Water velocity	:		Bank I	heiaht			Bank	slope	
(check one)		(Approx.)	-			Right:				Right	:
		-	<u>1.0_</u> fps			Left:	<u>1_</u> ft.			Left	<u>80</u> degrees
⊠Meander	ring	N/A□				Lon	<u>1_</u> ft.			Lon	<u>80</u> degrees
Qualitative Attrib	utes										
Water Appearance: (check one)	\Box No water	⊠Clear	□Turbid	-	ieen i surface	⊟Sui e scu		□Algal mats	□Othe	r:	
Substrate:	Bedrock	Boulder		Grave	el 🛛	Sand [⊠ Silt/ c	lay 🗆 Organic	; 🗆 (Other:	
(check all that apply) % of Substrate:	%	%	%	<u> 5 </u> %	_5	_%	<u>90_</u> %	%		%	
Width of Riparian Zor	ne: Ve	getative Lavers	. .								
	(che	ck all that apply)		⊠ Trees	:		⊠ Saplir	ngs/Shrubs:		Herbs	
<u>_30_ft</u> - N/A□		g. DBH of Dom	inants:	<u>_10_</u> in.		-	<u>2</u> in.				
Dominant Bank Vege	tation (list):										
Northern red oak,	white pine	, sugar map	le, shagt	oark hicko	ory						
Aquatic Habitats (ex: s	submerged or	emerged aquatic	vegetation,	overhanging	banks/ro	oots, leaf pac	ks, large	submerged wood	, riffles,	deep pool	s):
none											
Aquatic Organisms O	bserved (lis	<i>:t)</i> :									
None											
T&E Species Observe	ed (list):										
none											
Disturbances (ex: lives	stock access, r	manure in waterbo	ody, waste d	lischarge pipe	es):						
none											
Tributary is: (check one)		atural		cial, man-m	ade	🗆 Manip	ulated				
Stream Quality ^a : (check one)	□H	igh	⊠ Mode	erate		□ Low					

Waterbody ID: SAUB107

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:

Weak bed and bank, weak sinuosity, riffle pool absent, weak grade control, rooted vegetation in channel.





Waterbody SAUB107 facing north upstream



Waterbody SAUB107 facing west across



Waterbody SAUB107 facing south downstream

Survey Descriptio	n							
Project Name:	_	Waterbody N				aterbody ID:		Date:
Atlantic Coast Pipel	ine	Barn Lick E	Branch		S	AUA436		9/27/2016
State:	County:		Company:		Crew I	Member	Pho	otos:
Virginia	Augusta		NRG		Initials	: GB, SA	01	-03
Tract Number(s):			Nearest Mile	epost:		Associated W	etland ID(s):
07-001-A008			111.25			WAUB102		
Survey Type: (check one)	⊠Centerlin	e □Re	e-Route	□ Access Road		□Other:		
Physical Attribute	s							
Stream Classification: (check one)	Epheme			⊠ Denemial				
. ,	Ephemer	rai Lint	ermittent	Perennial				
Waterbody Type: (check one)	River 🛛 St	tream 🗆 D	itch 🗆 C	anal 🛛 Other:	:			
OHWM Width: <u>8.0</u> ft.	OHWM Indica (check all that app		⊠ Clear lin on bank	ne 🗆 Shelving	g	□Wrested vegetation	Sc	ouring ⊟Water staining
Height: <u>1.0</u> ft. N/A□	□Bent, vegetati	matted, or miss on	ing □Wrack li	ine ⊠Litter ar debris	nd	□Abrupt plan community ch		Soil characteristic change
Width of Waterbody - 1			- Toe of Slope	Width of Waterbo	ody - W		Depth of V	Nater:
Bank to Top of Bank:	to Toe	e of Slope:		Water Edge:			(Approx.)	
<u>_10_</u> ft.		<u>3.0</u> ft.			<u>6.0_</u> ft.		N/A□	<u>_0.5</u> ft.
Sinuosity:	Water	velocity:		Bank height			Bank slop	De
(check one)	(Approx	.)		Right:			F	Right:
		<u>_1.5_</u> f	ps	Left:	<u>3.5_</u> ft.			<u>90</u> degrees Left:
Meanderin	ng N/A□				<u>2</u> ft.			<u>80</u> degrees
Qualitative Attribu	tes							
Water Appearance: (check one)	No water	Clear □Tu		neen ⊡Sur n surface scu		□Algal mats	□Other:	
	Bedrock 🗆 B	oulder 🛛 Co	bble 🛛 Grav	el 🛛 Sand 🛛	⊠ Silt/ c	lay 🗆 Organic	: 🗆 Othe	ər:
(check all that apply) % of Substrate:	%	<u>% 5</u> %	<u> 25 </u> %	<u>40</u> %	<u>30_</u> %	%		_%
Width of Riparian Zone		ve Layers:						
_>70_ft·	(check all tha Avg. DBH	at apply) I of Dominants	⊠ Trees			ngs/Shrubs:	🗆 He	erbs
N/A 🗆	(approx.)		<u>10</u> in.	-	_ <u>2_</u> in.			
Dominant Bank Vegeta White oak, white pir		bd						
Aquatic Habitats (ex: su	ubmerged or emerge	ed aquatic vegetat	tion, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles, dee	p pools):
Cobble, roots along		pile						
Aquatic Organisms Ob	served (list):							
None								
T&E Species Observed	l (list):							
none								
Disturbances (ex: liveston Selectively logged	ock access, manure	in waterbody, wa	ste discharge pip	es):				
Tributary is: (check one)	⊠ Natural		Artificial, man-m	nade 🗆 Manipu	ulated			
Stream Quality ^a : (check one)	🗆 High		Moderate	□ Low				

Waterbody ID: SAUA436

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:

Strong sinuosity, weak riffle pool, strong grade control, well developed bars and benches, debris piles. Banks undercut and unstable on outside of bends. Previously named saub108.





Waterbody SAUA436 facing north upstream



Waterbody SAUA436 facing west across



Waterbody SAUA436 facing south downstream

Survey Description	on								
Project Name:		Waterbody				Vaterbody ID:		Date:	
Atlantic Coast Pipe		UNT to Ca	Ifpasture Riv	er		AUB109		4/27/20	15
State:	County:		Company:		Crew I	Member Initials:	Pho	otos:	
Virginia	Augusta		NRG		TP, A	S	01	-03	
Tract Number(s):			Nearest Mile	epost:		Associated We	etland ID((s):	
07-001-A009			111.7			none			
Survey Type: (check one)	⊠Centerli	ne 🗆 Re	e-Route	□ Access Road		□Other:			
Physical Attribute									
Stream Classification: (check one)	: □Epheme	eral □In	termittent	⊠Perennial					
Waterbody Type:	-								
	□River ⊠ S	itream 🗆 🗆 🗆	Ditch 🗆 Ca	anal 🗌 Other:					
ОНѠМ	OHWM Indic								
Width: _ <u>6.0_ft</u> .	(check all that ap	ріу)	☑ Clear lir on bank	ne 🗆 Shelvin	g	□Wrested vegetation	⊠Sc		Water aining
Height:			sing □Wrack li	ne ⊠Litter ar	nd	□Abrupt plant		Soil characteris	stic change
_ <u>2.0_</u> ft. N/A□	vegetat	ion		debris		community cha	ange		
Width of Waterbody -			- Toe of Slope	Width of Waterbo	ody - W		Depth of V	Water:	
Bank to Top of Bank:	to To	e of Slope:		Water Edge:		C	Approx.)		
<u>8</u> ft.		<u>3.0</u> ft.			<u>5.0_</u> ft.		N/A□	<u>_0.4_</u> ft.	
Sinuosity:	Wate	r velocity:		N/A□ Bank height			Bank slop	<u>ne</u>	
(check one)	(Approx			Right:			•	Right:	
□Straight		_2.0_1	fps		<u>4_</u> ft.			<u>80</u> de	grees
⊠Meander	ing N/A□]		Left:	<u>4_</u> ft.			Left: <u>80</u> de	grees
Qualitative Attrib	utes								
Water Appearance: (check one)	□No water ⊵	Clear □Tu	urbid □Sh		faaa		Othor		
				leen □Sui surface scu		□Algal □ mats]Other:		
Substrate: [(check all that apply)	Bedrock 🛛 E	Boulder 🛛 🖾 Co	obble 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ o	clay 🛛 Organic	🗆 Othe	ər:	
% of Substrate:	%	% <u>20 %</u>	% <u>40</u> %	<u> 30 </u> %	<u>10_</u> %	%		_%	
Width of Riparian Zon	e: Vegetati	ve Layers:							
-	(check all th	at apply)	⊠ Trees:	: D	🛛 Saplii	ngs/Shrubs:	🗆 He	erbs	
<u>>50 ft</u> · N/A□	(approx.)	H of Dominants	s: <u>13</u> in.	-	<u>2</u> in.				
Dominant Bank Veget	ation (list):								
White oak, white pi	ne, Eastern he	emlock, ches	stnut oak, mu	usclewood					
Aquatic Habitats (ex: s	ubmerged or emerg	ed aquatic vegeta	ation, overhanging	banks/roots, leaf pac	ks, large	e submerged wood,	riffles, dee	p pools):	
Cobble, roots alon	g bank, debris	pile							
Aquatic Organisms O	bserved (list):								
mayfly									
T&E Species Observe	d (list):								
none									
Disturbances (ex: lives	tock access, manure	e in waterbody, wa	aste discharge pipe	es):					
none									
Tributary is: (check one)	⊠ Natural		Artificial, man-m	ade 🗌 Manipi	ulated				
Stream Quality ^a : (check one)	🗆 High	\boxtimes	Moderate	□ Low					

Waterbody ID: SAUB109

^a 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; idex of regeneration; filtering function severely compromised; banks unstable (vertice) water color is muddy and

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:

Strong sinuosity, weak riffle pool, strong grade control, well developed bars and benches, debris piles.





Waterbody SAUB109 facing northeast upstream



Waterbody SAUB109 facing west across



Waterbody SAUB109 facing south downstream

Updated Waterbody ID: saua435

near Waterbody Data Shee	et		puated waterb	
urvey Description				
oject Name:	Waterbody Name:	2.1	Waterbody ID:	Date: 9/27/16
ACP	Braley Bra	nch	Saup 00:	3. 1 19 Aug 2015
ate: County/Parish:	Company:		w Member Initials:	Photos:
VA Avgusta	ESI	IRM K	WM, CSIGB, A	SNSE
act Number(s):	Nearest Milep	ost:	Associated Wetla	and ID(s):
07-001-A010, 07-00	DI-A009 116.5	datenti u munada aktivi muna na tana	NDNE	A STANDARD (Standard Standard)
urvey Type: Mack one)	ne 🛛 Re-Route	Access Road	□Other:	
hysical Attributes				
ream Classification: meck one) DEphemo	eral Vintermittent	□Perennial		
faterbody Type: heck one)	Stream 🗆 Ditch 🗆 Ca	nal 🗌 Other:		
Width: 14 ft. OHWM Indi	cator: pp/y) Clear line on bank	e Shelving	⊠Wrested vegetation	□Scouring □Water staining
Height: 2.0 Ben vegeta	t, matted, or missing □Wrack lir ation	ne 🗆 Litter and debris	□Abrupt plant community char	soll characteristic change
	th of Waterbody - Toe of Slope	Width of Waterbody	-Water Edge to De	epth of Water:
ank to Top of Bank; to T	oe of Slope:	Water Edge:	(A)	pprox.)
<u>24</u> ft.	ft.	×	ft.	/Aft.
1		N/AD	and the second sec	ank slope
check one) (App	ter velocity: rox.)	Bank height Right: /		Right: 9,35
□Straight	fps		ft.	degrees
Meandering	/	Left:	5.0 ft	Left: 3090egrees
	R			
Qualitative Attributes		N. A. B.		
Nater Appearance: ANo water		neen 🗆 Surfa n surface scum]Other:
Substrate: Bedrock	Boulder Cobble Cora	vel 🗆 Sand 🕅	Silt/ clay D Organic	Other:
(check all that apply) % of Substrate: %	% 50 % 40	% %	10 % %	%
		_~~ _		· · · · · · · · · · · · · · · · · · ·
	ative Layers:			M U. A.
	Il that apply) A Tree	in.	Saplings/Shrubs:	Alerbs N/A in.
N/A C (approx		111	<u> </u>	<u></u> m:
Dominant Bank Vegetation (list): Acer rubrum, Acer sacchai	Have an elic M	aniana Min	nclea in	· Invianta in
Acer rubrum, Acer sacchai	rum, riamamens v	Dunch May Mich	UStegium VI	mineum, LUNICEYA JAPU
Aquatic Habitats (ex: submerged or en			s. large submerged wood	, riffies, deep pools):
Pools, intermittent flow	, Woody debris, root	mats		
Aquatic Organisms Observed (list):		71 1 1 1		
	r striders, stonefly, wate	er penny		
T&E Species Observed (list): NONC	Carl Brand			
Disturbances (ex: livestock access ma CXCCSS IVE COODIC	Paralleled by existing roa outside of bend. Banks ar	d and wire fencing	g wrapped around ut and unstable in	cobble to limit bank erosion outside bends.
Tributary is: (check one) 🖉 Na				
Stream Quality *: (check one)	gh X⊐ Moderate	کر Low		



Environmental Field Surveys Waterbody Photo Page



Waterbody saua435 facing north upstream.



Waterbody saua435 facing south downstream.

Environmental Field Surveys Waterbody Photo Page



Waterbody saua435 'facing east across bank.

urvey Description				Matarka du ID		Date:
roject Name:	Waterbody Name		2:10 -	Waterbody ID: Saup 00	4	Date: 19 Aug 2015
ACP		asture F				
NA County/Parish	Probability with the State of C	EST	hertextar († 1555 er effe de	KWM, CSM	and the second se	1,5,E
ract Number(s):	N	learest Milepost	:	Associated W		and the other states of the
07-001-A010		٨	JA.	NO	ne	A Company and A Company
urvey Type: heck one)	line 🗆 Re-Ro	oute 🗆	Access Road	□Other:		
hysical Attributes	the second s					
tream Classification: heck one)	neral Dintern	nittent 🕅	Perennial			
Vaterbody Type: heck one)	Stream Ditch	n 🗆 Canal	C Other:			
Width:ft.		Clear line on bank	□Shelvin	g 🛛 🖓 Wrested vegetation	□Scour	ing ⊡Water staining
	nt, matted, or missing tation) 🗆 Wrack line	□Litter an debris	nd DAbrupt plan community cl		I characteristic change
Width of Waterbody - Top of Wid		oe of Slope Wi	dth of Waterb	ody - Water Edge to	Depth of Wa	ter:
Bank to Top of Bank: to to	Toe of Slope:		iter Edge:	<u>Ц_</u> ft.		D.2 ft.
Sinuosity: Wa	ater velocity:		AD nk height		N/A Bank slope	
	prox.)		Right:	2		ght: 9n
Actuality	fr	os	Left:	<u> </u>		_eft:degrees
□Meandering N/	A			<u>A</u> ft.		<u>30</u> degrees
Qualitative Attributes						
Water Appearance: (check one)		oid DSheer on su		urface ⊡Algal cum mats	□Other:	
Substrate: Bedrock	Boulder & Cobl	ble Gravel	Sand	Silt/ clay Organ	nic Other	:
(check all that apply) % of Substrate:%	% 50		%	%	_%	%
Control and a finite state of the second state	tative Layers:	¥_	(data ?	V	×	
NU.	all that apply) DBH of Dominants: x)	ATrees: 12_ir	ı.	Saplings/Shrubs:	Her N/	bs <u>A_</u> in.
Dominant Bank Vegetation (list):	· · · · · ·	Minural	cleation	u li e E	etura r	ubra
Acer rubrum, Platanus						
Aquatic Habitats (ex: submerged or e Riffles, PDDIS, Woo	ty debris, t	ion, overhanging ba Flat rocl	anks/roots, leaf p < S	acks, large submerged w	ood, riffies, dee	; pools):
Aquatic Organisms Observed (list Minnows, Mayfly	larvae, Cada	dis fly l	arvae, n	later-penny b	eetle (a	rvac
T&E Species Observed (list): NDNC						
Disturbances (ex: livestock access r IN PASTURE	nanure in waterbody wa	ste discharge piper	5):			
Tributary is:	Vatural 🛛	Artificial, man-ma	ade 🗆 Ma	nipulated		
Stream Quality * :		Moderate		N		

Waterbody ID: SaupOOL 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) CUVVICON Shudy Saup 004

Environmental Field Surveys Waterbody Photo Page



Waterbody saup004 facing northeast upstream.



Waterbody saup004 facing south downstream.

Environmental Field Surveys Waterbody Photo Page



Waterbody saup004 facing east across bank.

Survey Description	on								
Project Name:		Waterbody Na				aterbody ID:			ate:
Atlantic Coast Pipe	line	Dowell's Dr	aft		S	AUA416			/20/2016
State:	County:		Company:		Crew I	Nember	P	hotos:	
Virginia	Augusta		NRG		Initials	s: GB, AS	S	SAUA41	6_001-004
Tract Number(s):			Nearest Mile	epost:		Associated W	etland I	D(s):	
07-001			112			WAUC002			
Survey Type: (check one)	⊠Centerline	e □Re-	Route	□Access Road		□Other:			
Physical Attribute	es								
Stream Classification: (check one)		al □Inte	rmittent	⊠Perennial					
Waterbody Type:									
	□River ⊠ Str	ream 🗌 Dit	ch 🗆 C	anal 🛛 Other:	:				
ОНШМ	OHWM Indica								
Width: <u>16_</u> ft.	(check all that appl	<i>y)</i>	⊠ Clear lir on bank	ne 🗆 Shelvin	g	□Wrested vegetation		Scouring	□Water staining
Height:	□Bent, r	natted, or missir	ng ⊡Wrack li	ine 🛛 Litter ar	nd	□Abrupt plan	t I	□Soil ch;	aracteristic change
<u>2 ft.</u> N/A□	vegetatio		0	debris		community ch			5
Width of Waterbody -			Toe of Slope	Width of Waterb	ody - W	ater Edge to		of Water:	
Bank to Top of Bank:	to Toe	of Slope:		Water Edge:			(Approx.)		
<u>_18_</u> ft.	-	<u>12</u> ft.			<u>15_</u> ft.		N/A□	-	<u>0.8_</u> ft.
Sinuosity:	Water	velocity:		N/A□ Bank height			Bank sl	ope	
(check one)	(Approx.)			Right:				Right:	
		<u>_2_</u> fps		Left:	<u>4_</u> ft.			Left:	70 degrees
⊠Meander	ing N/A□			Len.	<u>4_</u> ft.			Leit.	70 degrees
Qualitative Attribu	utes			-					
Water Appearance: (check one)	□No water ⊠0	Clear □Tur	bid ⊡Sh	neen 🗆 Sui	face	□Algal	□Other:		
				surface scu		mats			
Substrate:	Bedrock Bo	oulder 🛛 Cob	ble 🛛 🖾 Grav	el 🗆 Sand 🛛	□ Silt/ c	lay 🗆 Organic	; 🗆 O	ther:	
% of Substrate:	_%	<u>% 60</u> %	<u>40</u> %	%		_%%		%	
Width of Riparian Zon	e: Vegetative	e Layers:							
-	(check all that	11.37	☑ Trees			ngs/Shrubs:	\boxtimes	Herbs	
<u>90_ft-</u> N/A□	avg. DBH (approx.)	of Dominants:	<u>_14_</u> in.	-	<u>2</u> in.				
Dominant Bank Veget									
Eastern Hemlock, \	White Pine, Wh	ite Oak, Viole	et, Red Ma	ole, Christmas	Fern				
Aquatic Habitats (ex: s	ubmerged or emerge	d aquatic vegetatio	on, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles, d	eep pools)	:
Riffles and pools, c	lowned logs in	bed, Over ha	nging bank	s and roots					
Aquatic Organisms Ol	bserved (list):								
None									
T&E Species Observe	d (list):								
None									
Disturbances (ex: livest	tock access, manure i	in waterbody, was	e discharge pip	es):					
Access road with a	four foot diame	eter culvert							
Tributary is: (check one)	⊠ Natural		tificial, man-m	nade 🗆 Manip	ulated				
Stream Quality ^a : (check one)	🗆 High	⊠ M	oderate	□ Low			-		

Waterbody ID:

SAUA416

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:

former sauc002 is now saua416





Waterbody SAUA416 facing west upstream



Waterbody SAUA416 facing east downstream



Waterbody SAUA416 facing south across



Waterbody saua416 facing north upstream - culvert

Survey Description	n								
Project Name:		Waterbody Na	me:			aterbody ID:		Date:	
Atlantic Coast Pipel	ine	UNT to Dow	ell's Draft		S	AUA417		9/20/20	016
State:	County:	1	Company:		Crew M	Member	F	Photos:	
Virginia	Augusta		NRG		Initials	: GB, AS	S	SAUA417_00	1-003
Tract Number(s):			Nearest Mile	epost:		Associated W	etland	ID(s):	
07-001			112			WAUC002			
Survey Type: (check one)	⊠Centerline	e □Re-I	Route	□Access Road		□Other:			
Physical Attributes	s								
Stream Classification: (check one)	[⊠] Ephemera	al 🗌 Inte	rmittent	Perennial					
Waterbody Type: (check one)]River ⊠ Str		ah 🗆 C	anal 🗆 Othar					
			ch 🗆 Ca	anal 🗌 Other:					
OHWM Width: _6_ft.	OHWM Indica (check all that appl		□ Clear lir on bank	ne 🗆 Shelvin	g	□Wrested vegetation			□Water staining
Height:	⊠Bent, r	natted, or missir	ng ⊡Wrack li	ne 🗆 Litter ar	nd	□Abrupt plan	t	□Soil character	istic change
ft. N/A□	vegetatio	n		debris		community ch	ange		
Width of Waterbody - T Bank to Top of Bank:		of Waterbody - of Slope:	Toe of Slope	Width of Waterb Water Edge:	ody - W		Depth ((Approx.)	of Water:	
<u>_6 ft</u> .		_3_ ft.		g	<u>6_</u> ft.			_0.3_ ft	t
	-	<u></u> 1t.		N/A□	<u>_0_</u> n.		N/A□		
Sinuosity: (check one)	Water (Approx.)	velocity:		Bank height			Bank s	•	
□Straight	(1,661,674)	_0.5_ fps		Right:	_4_ft.			Right: 60 c	legrees
⊠Meanderir		<u>_0.5_</u> ipa	5	Left:				Left:	-
				<u> </u>	<u>10_</u> ft.			<u></u> c	legrees
Qualitative Attribu Water Appearance:	tes								
(check one)	No water ⊠0	Clear DTurk		neen ⊡Sui n surface scu		□Algal [mats	Other	:	
	Bedrock 🛛 Bo	oulder 🛛 Cobb	ole 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ c	lay 🗆 Organic	: 🗆 O	Other:	
(check all that apply) % of Substrate:	%	% <u>5</u> %	<u> 5 </u> %	<u> 10 </u> %	<u>80_</u> %	%		%	
Width of Riparian Zone	e: Vegetative	e Layers:							
ft.	(check all that	t apply) of Dominants:	⊠ Trees			ngs/Shrubs:	\boxtimes	Herbs	
N/A⊠	(approx.)	or Dominants.	<u>_12_</u> in.	-	<u>2</u> in.				
Dominant Bank Vegeta									
Christmas Fern, Wh									
Aquatic Habitats (ex: su	ubmerged or emerge	d aquatic vegetatic	on, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles, c	deep pools):	
None									
Aquatic Organisms Ob	served (list):								
None									
T&E Species Observed	(list):								
None									
Disturbances (ex: livesto	ock 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 ^a : (check one)	□ High	⊠ Mo	oderate	□ Low					

Waterbody ID:

SAUA417

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:

saua417 was previously named sauc003.




Waterbody SAUA417 facing north upstream



Waterbody SAUA417 facing south downstream



Waterbody SAUA417 facing east across

Linear Waterbody Data Sheet

Survey Description	on										
Project Name:			ody Nan				W	aterbody ID:			Date:
Atlantic Coast Pipe	eline	UNT to	o Dowe	ell's Draft			S	AUA418		ç	9/20/2016
State:	County:			Company:			Crew I	Nember		Photos:	
Virginia	Augusta			ERM			Initials	: GB, AS		SAUA4	18_001-003
Tract Number(s):				Nearest Mile	epost:			Associated W	etland	ID(s):	
07-001				112				None			
Survey Type: (check one)	⊠Cer	nterline	□Re-R	oute		ccess Road		□Other:			
Physical Attribut											
Stream Classification (check one)		emeral	🗶 Interr	nittent	⊠Pe	erennial					
Waterbody Type:											
(check one)	□River	⊠ Stream	Ditcl	h □C	anal	□ Other:	:				
онwм		ndicator:							_		
Width: <u>8</u> ft.	(check all th	пат арріу)		⊠ Clear liı on bank	ne	Shelvin	g	☐Wrested vegetation	L	Scouring	□Water staining
Height:	×	Bent, matted, o	r missing	g ⊡Wrack li	ine	□Litter ar	nd	□Abrupt plar	nt	□Soil ch	aracteristic change
ft. N/A□	veç	getation		-		debris		community ch	nange		
Width of Waterbody -		Vidth of Water		oe of Slope			ody - W	ater Edge to		of Water	:
Bank to Top of Bank:	to	o Toe of Slope):		Water	Edge:			(Approx.	,	
<u>_12_</u> ft.		<u>3</u> ft.			N/A□	-	<u>8_</u> ft.		N/A□	-	<u>_0.8_</u> ft.
Sinuosity:	v	Vater velocity:			-	height			Bank		
(check one)	(#	Approx.)				Right:				Right:	
			<u>1.5_</u> fps			Left:	<u>4_</u> ft.			Left	<u>70</u> degrees
⊠Meande	ring N	I/A□					<u>3_</u> ft.				<u>75</u> degrees
Qualitative Attrib	utes										
Water Appearance: (check one)	\Box No water	⊠Clear	□Turbi	d ⊡Sł	neen	□Su	rface	□Algal	□Othe	er.	
					surfac			mats			
Substrate:	Bedrock	□ Boulder	Cobbl	e 🛛 Grav	el 🛛	Sand	□ Silt/ c	lay 🗆 Organio	; 🗆	Other:	
(check all that apply) % of Substrate:	<u>80_</u> %	%		% <u>15</u> %	5	5_%		_%%	·	%	
Width of Riparian Zor	ne: Vege	etative Layers	:								
-	(check	k all that apply)		☑ Trees	:	۵	⊠ Saplir	ngs/Shrubs:	\triangleright	⊠ Herbs	
<u>30 ft</u> - N/A□	AVG. (appro	. DBH of Domi	nants:	<u>_12_</u> in.		-	<u>2</u> in.				
Dominant Bank Vege	• •										
White Pine, White	Oak, Red I	Maple, Com	mon Si	milax, May	/-appl	e, Christn	nas fe	rn, bedstraw			
Aquatic Habitats (ex:	submerged or e	merged aquatic	vegetation	i, overhanging	banks/ro	oots, leaf pac	ks, large	submerged wood	l, riffles,	deep pools	s):
Riffles and pools											
Aquatic Organisms C	Observed (list)):									
None											
T&E Species Observe	ed (list):										
None											
Disturbances (ex: live: Stream runs through a cul			-	discharge							
Tributary is: (check one)	⊠ Nat	tural	□ Arti	ficial, man-m	nade	🗆 Manip	ulated				
Stream Quality ^a : (check one)	🗆 Hig	Jh	⊠ Mo	derate		□ Low					

Waterbody ID:

SAUA418

^a 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:

saua418 was previously named sauc004.

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





Waterbody SAUA418 facing north upstream



Waterbody SAUA418 facing south downstream



Waterbody SAUA418 facing west across



Waterbody saua418 facing south - culvert

Linear Waterbody Data Sheet

Survey Description	n							
Project Name:		Waterbody Na				aterbody ID:		Date:
Atlantic Coast Pipel	ine	East Branch	Dowell's D	oraft	S	AUA420		9/20/2016
State:	County:		Company:		Crew N	lember	Ph	notos:
Virginia	Augusta		NRG		Initials	: GB, AS	0	1-03
Tract Number(s):			Nearest			Associated W	etland ID	D(s):
07-001			Milepost: 11	17.3		none		
Survey Type: (check one)		e □Re-	Route	⊠Access Road		Other:		
Physical Attributes	S							
Stream Classification: (check one)	Ephemera	al □Inte	rmittent	Perennial				
Waterbody Type:								
(check one)	River 🛛 Sti	ream 🗆 Dite	ch 🗆 Ca	anal 🗌 Other:				
OHWM Width: _10.0_ft.	OHWM Indica (check all that appl		⊠ Clear lir on bank	ne ⊠Shelving	g	□Wrested vegetation	⊠S	couring ⊟Water staining
Height:ft.	□Bent, r vegetatio	matted, or missir	ng ⊡Wrack li	ne ⊠Litter ar debris	nd	□Abrupt plan community ch		Soil characteristic change
N/A□ Width of Waterbody - T	on of Width	of Waterbody	Tag of Slang	Width of Waterbo	ody - W	ator Edgo to	Depth of	Wator-
Bank to Top of Bank:		of Slope:	Toe of Slope	Water Edge:	ouy - 🗤		(Approx.)	water.
<u>_12_</u> ft.	-	<u>3.0</u> ft.			<u>6.0_</u> ft.		N/A□	<u>0.5</u> ft.
Sinuosity:		velocity:		Bank height			Bank slo	pe
(check one)	(Approx.)			Right:	1 4			Right:
		<u>_1.5_</u> fp:	6	Left:	<u>4</u> ft.			<u>85</u> degrees
Meanderir	ng N/A□				<u>4_</u> ft.			<u> 85 </u> degrees
Qualitative Attribu	tes							
Water Appearance: (check one)	[]] No water ⊠0	Clear □Turt		leen ⊡Sur surface scu		□Algal [mats	□Other:	
	Bedrock 🗆 Bo	oulder 🛛 Cobl	ole 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ c	lay 🗆 Organic	□ Oth	ner:
(check all that apply) % of Substrate:	%	% <u>30</u> %	<u>35</u> %	_25_%	<u>10_</u> %	%		%
Width of Riparian Zone								
<u>>50 ft</u> ·		t apply) of Dominants:	⊠ Trees _ <u>13_</u> in.		⊴ Saplin _ <u>2_</u> in.	ngs/Shrubs:		lerbs
N/A□ Dominant Bank Vegeta	(approx.)							
White oak, sugar m		vood						
Aquatic Habitats (ex: su	Ibmerged or emerge	d aquatic vegetatio	n, overhanging	banks/roots, leaf pacl	ks, large	submerged wood,	, riffles, de	ep pools):
Cobble, roots along		pile						
Aquatic Organisms Ob	served (list):							
Mayfly, caddis fly								
T&E Species Observed none	(list):							
Disturbances (ex: livesto	ock access. manure	in waterbody wast	e discharde nine	es):				
Logging road, no cu		natorbody, wdot		,-				
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	ade 🗆 Manipu	ulated			
Stream Quality ^a : (check one)	□ High		oderate	□ Low				

Waterbody ID: SAUA420

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:

Moderate sinuosity, moderate riffle pool, strong grade control, well developed bars and benches, debris piles.

SAUA420 previously named SAUB110







Waterbody SAUA420 facing east upstream



Waterbody SAUA420 facing north across



Waterbody SAUA420 facing west downstream

Linear Waterbody Data Sheet

Survey Description	n										
Project Name:			ody Nam					aterbody ID:			ate:
Atlantic Coast Pipel		UNT to		l's Draft				AUA419			/20/2016
State:	County:			Company:				Nember		Photos:	
Virginia	Augusta			RM			Initials	: GB, AS			9_001-003
Tract Number(s):				learest Mile	epost:			Associated W	etland	I ID(s):	
07-001			1	13				None			
Survey Type: (check one)	⊠Center	line	□Re-Ro	oute	□Ac	ccess Road		□Other:			
Physical Attribute	s										
Stream Classification: (check one)	Ephem	eral	⊠Interm	nittent	□P€	erennial					
Waterbody Type: (check one)	River	Stream	Ditch	□ Ca	anal	Other:	:				
OHWM Width: _7_ft.	OHWM Indi (check all that a			⊠ Clear lin on bank	ie	Shelvin	g	□Wrested vegetation		Scouring	□Water staining
Height: N/A□	□Ben vegeta		r missing	□Wrack li	ne	□Litter ar debris	nd	□Abrupt plar community cł		□Soil cha	aracteristic change
Width of Waterbody - T	op of Wid	th of Water	body - To	be of Slope	Width	of Waterb	ody - W	ater Edge to	Depth	of Water:	
Bank to Top of Bank:		oe of Slope		•		Edge:	-	C C	(Approx.)	
<u>_15_</u> ft.		<u>3_</u> ft.				-	<u>5_</u> ft.			-	<u>1</u> ft.
Sinuosity:	Wat	er velocity:			N/A 🗆	height			N/A⊡ Bank :	slopo	
(check one)	(Appr				Dalik	Right:			Dalik	Right:	
□Straight		_	<u>1_</u> fps			•	<u>5_</u> ft.			•	60 degrees
⊠Meanderin	ng N/A					Left:	<u>10_</u> ft.			Left:	<u>75</u> degrees
Qualitative Attribu	tes				1						
Water Appearance: (check one)	No water	⊠Clear	□Turbic	-	een surfac	⊟Sui e scu		□Algal mats	□Othe	er:	
Substrate:	Bedrock	Boulder	⊠ Cobble	e 🛛 Grave	el 🛛	Sand [□ Silt/ c	lay 🗆 Organio	:	Other:	
(check all that apply) % of Substrate:	%	%	<u>20_</u> %	<u>40</u> %	_4	<u>10 </u> %		_%%		%	
Width of Riparian Zone	: Vegeta	ive Layers:									
<u>_20_ft</u> -	(check all Avg. D	that apply) 3H of Domi		⊠ Trees: _ <u>12_</u> in.	:		⊠ Saplir _ <u>2_</u> in.	ngs/Shrubs:	Σ	∃ Herbs	
N/A□ Dominant Bank Vegeta	(approx.)						_				
White Pine, White C		ple, Post	Oak, M	ountain L	aurel,	River Oa	ats, Po	ison Ivy			
Aquatic Habitats (ex: su	ubmerged or eme	ged aquatic v	egetation,	overhanging	banks/ro	oots, leaf pac	ks, large	submerged wood	l, riffles,	deep pools)	:
Riffles and Pools, le											
Aquatic Organisms Ob	served (list):										
None											
T&E Species Observed	l (list):										
None											
Disturbances (ex: livesto None	ock access, manu	re in waterbo	dy, waste o	discharge pipe	es):						
Tributary is:											
(check one)	🛛 Natura	al	🗆 Artif	icial, man-m	ade	🗆 Manip	ulated				
Stream Quality ^a : (check one)	🗆 High		⊠ Mod	erate		□ Low					

Waterbody ID: SAUA419

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 branches downstream and then quickly merges back into a single stream

saua419 was previously named sauc005







Waterbody SAUA419 facing north upstream



Waterbody SAUA419 facing south downstream



Waterbody SAUA419 facing east across



Waterbody saua419 headcut

Linear Waterbody Data	Sheet
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Survey Description	n							
Project Name:		Waterbody Na				aterbody ID:		Date:
Atlantic Coast Pipel		Buckhorn Cr			_	AUA427e		9/23/2016
State: Virginia	County : Augusta		Company: ERM		Crew M GB, A	Member Initials		os: JA427e_001-003
Tract Number(s):	Augusta		Nearest		00, 7	Associated W		—
07-001			Milepost: 12	20.2		None		<i>,</i>
Survey Type: (check one)	⊠Centerline	e □Re-I	Route	□Access Road	ł	□Other:		
Physical Attributes	S							
Stream Classification: (check one)	⊠Ephemera	al 🗌 Inter	rmittent	Perennial				
Waterbody Type: (check one)	River ⊠ Str	eam 🗆 Dito	ch 🗆 Ca	anal 🗌 Other				
онwм	OHWM Indica	lor:						
Width: ft.	(check all that apply		□ Clear lir on bank	ne 🗆 Shelvin	g	□Wrested vegetation	□Sco	uring
Height: <u>0.5_</u> ft. N/A□	□Bent, n vegetatio	natted, or missin n	ig ⊡Wrack li	ne □Litter a debris	nd	□Abrupt plan community ch		oil characteristic change
Width of Waterbody - T	op of Width o	of Waterbody -	Toe of Slope	Width of Waterb	ody - W	ater Edge to	Depth of W	ater:
Bank to Top of Bank:		of Slope:		Water Edge:	•	·	(Approx.)	
<u>_15_</u> ft.	-	<u>1_</u> ft.			ft.		N/A⊠	ft.
Sinuosity:	Water	velocity:		N/A⊠ Bank height			Bank slope	9
(check one)	(Approx.)	•		Right:			•	ight:
		fps		Left:	<u>8_</u> ft.			
Meanderir	ng N/A⊠				<u>4_</u> ft.			40 degrees
Qualitative Attribu	tes							
Water Appearance: (check one)	No water	Clear □Turb			irface um	□Algal [mats	□Other:	
Substrate:	Bedrock 🛛 Bo	ulder 🛛 Cobb	ole 🛛 Grave	el 🗆 Sand	□ Silt/ c	lay 🗆 Organic	□ Other	
(check all that apply) % of Substrate:	<u>% 10 </u> %	% <u>80</u> %	<u> 10 </u> %	%		_%%		%
Width of Riparian Zone	: Vegetative	Eayers:						
<u>150_ft</u> -	•	apply) of Dominants:	⊠ Trees: _ <u>12_</u> in.		⊠ Saplin _ <u>2_</u> in.	ngs/Shrubs:	⊠ Her	bs
N/A□ Dominant Bank Vegeta	(approx.) tion (list):							
White Oak, White P	. ,	Hornbeam, F	Red Maple,	May-Apple, Vi	olet, S	milax		
Aquatic Habitats (ex: su	bmerged or emerged	d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	cks, large	submerged wood	, riffles, deep	pools):
None								
Aquatic Organisms Ob	served (list):							
None								
T&E Species Observed	(list):							
None								
Disturbances (ex: livesto None	ock access, manure i	n waterbody, waste	e discharge pipe	es):				
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	ade 🗆 Manip	ulated			
Stream Quality ^a : (check one)	□ High		oderate	□ Low				

Waterbody ID: SAUA427e

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 receives runoff from the nearby hillslope and from White Oak draft during flood events. Due to the high cobble content the OHWM is obscured.

saua427e was previously named sauc007.







Waterbody SAUA427e facing north upstream



Waterbody SAUA427e facing south downstream



Waterbody SAUA427e facing west across

Linear Waterbod	y Data 🕄	Sheet									
Survey Description	n					b					
Project Name:			aterbody Nar				aterbody ID:			Date:	
Atlantic Coast Pipel	ine	В	uckhorn Cr	еек			AUA427p			9/23/2016	
State:	County:			Company:		Crew M	lember		Photos:		
Virginia	Augusta			ERM		Initials	Is: GB, AS SAUA427p_001-003			127p_001-003	
Tract Number(s):	•			Nearest			Associated Wetland ID(s):				
07-001				Milepost: 12	20.2		None				
Survey Type: (check one)	⊠Ce	enterline	□Re-F	Route	□Access Road		□Other:				
Physical Attributes											
Stream Classification:											
(check one)	□Ep	hemeral	□Inter	mittent	\boxtimes Perennial						
Waterbody Type: (check one)	River	⊠ Strear	n 🗆 Dito	h □ Ca	anal 🗌 Other:						
OHWM Width: _20_ft.		Indicator that apply)	:	⊠ Clear lin on bank	e 🗆 Shelving	g	□Wrested vegetation		Scourin	g ⊟Water staining	
Height:ft.		Bent, mat	ted, or missin	g	ne □Litter ar debris	nd	□Abrupt plan community ch		⊠Soil c	haracteristic change	
N/A□ Width of Waterbody - T Bank to Top of Bank:		Width of V to Toe of		Foe of Slope	Width of Waterbo Water Edge:	ody - W		Depth (Approx.	of Wate	r:	
<u>_25</u> ft.		8_	_ft.		N/A□	<u>_10_</u> ft.		N/A□		<u>1</u> ft.	
Sinuosity:		Water vel	ocity:		Bank height			Bank	slope		
(check one)		(Approx.)			Right:	<u>3.5_</u> ft.			Right	:: _ <u>30_</u> degrees	
Magndaring			<u>_1.5_</u> fps		Left:	Left:			Left:		
Meanderir	ig	N/A 🗆				<u>5.5_</u> ft.				<u>90</u> degrees	
Qualitative Attribu	tes										
Water Appearance: (check one)	No water	⊠Clea	ar ⊡Turb		een ⊡Sur surface scu		□Algal mats	□Othe	er:		
	Bedrock	□ Bould	er 🛛 Cobb	le 🛛 Grave	el 🛛 Sand 🛛	□ Silt/ c	lay 🗆 Organic	; 🗆	Other:		
(check all that apply) % of Substrate:	%		% <u>60</u> %	<u>30</u> %	<u> 10 </u> %		_%%		%		
Width of Riparian Zone		getative La		⊠ Trees:		7 Sanlir	igs/Shrubs:	5	d Herbs		
<u>150_ft</u> ⊷ N/A□	Avg (app		Dominants:	<u>_10</u> in.		<u>2</u> in.	igs/Stitubs.	Ľ			
Dominant Bank Vegeta	. ,					_					
White Oak, White P	-										
Aquatic Habitats (ex: su										s):	
Deep pools and riffl	es, over	hanging	banks and	roots, dow	ined logs in str	eam b	ed, Strong g	rade	control		
Aquatic Organisms Ob	served (lis	<i>t)</i> :									
None											
T&E Species Observed	(list):										
None											
Disturbances (ex: livesto	ock access, r	manure in w	aterbody, waste	e discharge pipe	es):						
None											
Tributary is: (check one)	⊠ N	atural	□ Art	ificial, man-m	ade 🛛 Manipi	ulated					
Stream Quality ^a : (check one)	⊠H	igh		derate	□ Low						

Waterbody ID: SAUA427p

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 located a few hundred feet from a camp ground

saua427p was previously named sauc006

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





Waterbody SAUA427p facing east upstream



Waterbody SAUA427p facing west downstream



Waterbody SAUA427p facing south across

Linear Waterbody Data	Sheet
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Survey Description	n							
Project Name:		Waterbody Na				aterbody ID:		Date:
Atlantic Coast Pipel		Buckhorn Cr			_	AUA427e		9/23/2016
State: Virginia	County : Augusta		Company: ERM		Crew M GB, A	Member Initials		os: JA427e_001-003
Tract Number(s):	Augusta		Nearest		00, /	Associated W		—
07-001			Milepost: 12	20.2		None		,
Survey Type: (check one)	⊠Centerline	e □Re-I	Route	□Access Road	ł	□Other:		
Physical Attributes	S							
Stream Classification: (check one)	⊠Ephemera	al 🗌 Inter	rmittent	Perennial				
Waterbody Type: (check one)	River ⊠ Str	eam 🗆 Dito	ch 🗆 Ca	anal 🗌 Other				
онwм	OHWM Indica	lor:						
Width: ft.	(check all that apply		□ Clear lir on bank	ne 🗆 Shelvin	g	□Wrested vegetation	□Sco	uring □Water staining
Height: <u>0.5_</u> ft. N/A□	□Bent, n vegetatio	natted, or missin n	ig ⊡Wrack li	ne □Litter a debris	nd	□Abrupt plan community ch		oil characteristic change
Width of Waterbody - T	op of Width o	of Waterbody -	Toe of Slope	Width of Waterb	ody - W	ater Edge to	Depth of W	ater:
Bank to Top of Bank:		of Slope:		Water Edge:	•	·	(Approx.)	
<u>_15_</u> ft.	-	<u>1_</u> ft.			ft.		N/A⊠	ft.
Sinuosity:	Water	velocity:		N/A⊠ Bank height			Bank slope	9
(check one)	(Approx.)	•		Right:			•	ight:
		fps		Left:	<u>8_</u> ft.			
Meanderir	ng N/A⊠				<u>4_</u> ft.			40 degrees
Qualitative Attribu	tes							
Water Appearance: (check one)	No water	Clear □Turb			irface um	□Algal [mats	□Other:	
Substrate:	Bedrock 🛛 Bo	ulder 🛛 Cobb	ole 🛛 Grave	el 🗆 Sand	□ Silt/ c	lay 🗆 Organic	□ Other	
(check all that apply) % of Substrate:	<u>% 10 </u> %	% <u>80</u> %	<u> 10 </u> %	%		_%%		%
Width of Riparian Zone	: Vegetative	Eayers:						
<u>150_ft</u> -	•	apply) of Dominants:	⊠ Trees: _ <u>12_</u> in.		⊠ Saplin _ <u>2_</u> in.	ngs/Shrubs:	⊠ Her	bs
N/A□ Dominant Bank Vegeta	(approx.) tion (list):							
White Oak, White P	. ,	Hornbeam, F	Red Maple,	May-Apple, Vi	olet, S	milax		
Aquatic Habitats (ex: su	bmerged or emerged	d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	cks, large	submerged wood	, riffles, deep	pools):
None								
Aquatic Organisms Ob	served (list):							
None								
T&E Species Observed	(list):							
None								
Disturbances (ex: livesto None	ock access, manure i	n waterbody, waste	e discharge pipe	es):				
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	ade 🗆 Manip	ulated			
Stream Quality ^a : (check one)	□ High		oderate	□ Low				

Waterbody ID: SAUA427e

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 receives runoff from the nearby hillslope and from White Oak draft during flood events. Due to the high cobble content the OHWM is obscured.

saua427e was previously named sauc007.







Waterbody SAUA427e facing north upstream



Waterbody SAUA427e facing south downstream



Waterbody SAUA427e facing west across

Linear Waterbod	y Data 🕄	Sheet									
Survey Description	n					b					
Project Name:			aterbody Nar				aterbody ID:			Date:	
Atlantic Coast Pipel	ine	В	uckhorn Cr	еек			AUA427p			9/23/2016	
State:	County:			Company:		Crew M	lember		Photos:		
Virginia	Augusta			ERM		Initials	Is: GB, AS SAUA427p_001-003			127p_001-003	
Tract Number(s):	•			Nearest			Associated Wetland ID(s):				
07-001				Milepost: 12	20.2		None				
Survey Type: (check one)	⊠Ce	enterline	□Re-F	Route	□Access Road		□Other:				
Physical Attributes											
Stream Classification:											
(check one)	□Ep	hemeral	□Inter	mittent	\boxtimes Perennial						
Waterbody Type: (check one)	River	⊠ Strear	n 🗆 Dito	h □ Ca	anal 🗌 Other:						
OHWM Width: _20_ft.		Indicator that apply)	:	⊠ Clear lin on bank	e 🗆 Shelving	g	□Wrested vegetation		Scourin	g ⊟Water staining	
Height:ft.		Bent, mat	ted, or missin	g	ne □Litter ar debris	nd	□Abrupt plan community ch		⊠Soil c	haracteristic change	
N/A□ Width of Waterbody - T Bank to Top of Bank:		Width of V to Toe of		Foe of Slope	Width of Waterbo Water Edge:	ody - W		Depth (Approx.	of Wate	r:	
<u>_25</u> ft.		8_	_ft.		N/A□	<u>_10_</u> ft.		N/A□		<u>1</u> ft.	
Sinuosity:		Water vel	ocity:		Bank height			Bank	slope		
(check one)		(Approx.)			Right:	<u>3.5_</u> ft.			Right	:: _ <u>30_</u> degrees	
Magndaring			<u>_1.5_</u> fps		Left:	Left:			Left:		
Meanderir	ig	N/A□				<u>5.5_</u> ft.				<u>90</u> degrees	
Qualitative Attribu	tes										
Water Appearance: (check one)	No water	⊠Clea	ar ⊡Turb		een ⊡Sur surface scu		□Algal mats	□Othe	er:		
	Bedrock	□ Bould	er 🛛 Cobb	le 🛛 Grave	el 🛛 Sand 🛛	□ Silt/ c	lay 🗆 Organic	; 🗆	Other:		
(check all that apply) % of Substrate:	%		% <u>60</u> %	<u>30</u> %	<u> 10 </u> %		_%%		%		
Width of Riparian Zone		getative La		⊠ Trees:		7 Sanlir	igs/Shrubs:	5	d Herbs		
<u>150_ft</u> ⊷ N/A□	Avg (app		Dominants:	<u>_10</u> in.		<u>2</u> in.	igs/Stitubs.	Ľ			
Dominant Bank Vegeta	. ,					_					
White Oak, White P	-										
Aquatic Habitats (ex: su										s):	
Deep pools and riffl	es, over	hanging	banks and	roots, dow	ined logs in str	eam b	ed, Strong g	rade	control		
Aquatic Organisms Ob	served (lis	<i>t)</i> :									
None											
T&E Species Observed	(list):										
None											
Disturbances (ex: livesto	ock access, r	manure in w	aterbody, waste	e discharge pipe	es):						
None											
Tributary is: (check one)	⊠ N	atural	□ Art	ificial, man-m	ade 🛛 Manipi	ulated					
Stream Quality ^a : (check one)	⊠H	igh		derate	□ Low						

Waterbody ID: SAUA427p

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 located a few hundred feet from a camp ground

saua427p was previously named sauc006

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





Waterbody SAUA427p facing east upstream



Waterbody SAUA427p facing west downstream



Waterbody SAUA427p facing south across

Linear Waterbody Data Sheet

Survey Description	n							
Project Name:		Waterbody N				/aterbody ID:		Date:
Atlantic Coast Pipel		UNT to Bud	ckhorn Cree	k		AUA426		9/23/2016
State:	County:		Company:		Crew I	Member	Ph	otos:
Virginia	Augusta		ERM		Initials	s: GB, AS	01	1-03
Tract Number(s):			Nearest			Associated We	etland ID	(s):
07-001- AR466A			Milepost: 1	20.2		none		
Survey Type: (check one)		e □Re	-Route	⊠Access Road		□Other:		
Physical Attribute	s							
Stream Classification: (check one)	□ Ephemer	al ⊡Int	ermittent	Perennial				
Waterbody Type:								
	River St	ream 🗆 D	itch 🗆 C	anal 🛛 Other	:			
ОНѠМ	OHWM Indica							
Width: <u>10.0</u> ft.	(check all that app	ly)	⊠ Clear lii on bank	ne ⊠Shelvin	g	□Wrested vegetation	⊠So	couring
Height:	□Bent,	matted, or miss	ing ⊡Wrack li	ine ⊠Litter ar	nd	□Abrupt plant		Soil characteristic change
_ <u>2.0_</u> ft. N/A□	vegetati	on	C C	debris		community cha	ange	C C
Width of Waterbody - T Bank to Top of Bank:			- Toe of Slope	Width of Waterb Water Edge:	ody - W		Depth of Approx.)	Water:
Ballk to Top of Ballk.	to roe	of Slope:		water Euge.		(прргол.)	
<u>_15_</u> ft.		<u>_5.0_</u> ft.			<u>8.0</u> ft.	r	√A□	<u>_0.5_</u> ft.
Sinuosity:	Water	velocity:		Bank height			Bank slo	De
(check one)	(Approx.			Right:				Right:
		<u>_1.5_</u> f	ps	Left:	<u>6</u> ft.			_ <u>85_</u> degrees Left:
⊠Meanderin	ng N/A□			Leit.	<u>6_</u> ft.			<u>85</u> degrees
Qualitative Attribu	tes							
Water Appearance: (check one)	No water ⊠	Clear □Tu	rhid 🗆 Sk	neen ⊡Su	rface	□Algal □	Other:	
				n surface sci		mats		
	Bedrock 🗆 B	oulder 🛛 🖾 Col	bble 🛛 🖾 Grav	el 🛛 Sand 🛛	⊠ Silt/ c	clay 🗆 Organic	□ Oth	ier:
(check all that apply) % of Substrate:	_%	<u>% 45 %</u>	<u>30 </u> %	<u>15</u> %	<u>10_</u> %	%		%
Width of Riparian Zone	: Vegetativ	e Layers:						
	(check all tha	at apply)	☑ Trees	:	⊠ Saplir	ngs/Shrubs:	□ H	lerbs
<u>_>80_ft</u> - N/A□	Avg. DBF (approx.)	l of Dominants	<u>10</u> in.	-	<u>2</u> in.			
Dominant Bank Vegeta	tion (list):							
Northern red oak, s	ugar maple, E	astern hemle	ock, white pi	ne, mountain la	aurel			
Aquatic Habitats (ex: su	ubmerged or emerge	ed aquatic vegetat	tion, overhanging	banks/roots, leaf pac	ks, large	submerged wood,	riffles, dee	ep pools):
Cobble, roots along	bank, debris	pile						
Aquatic Organisms Ob	served (list):							
Mayfly, caddis fly, s	tonefly							
T&E Species Observed	(list):							
none								
Disturbances (ex: livesto	ock access, manure	in waterbody, wa	ste discharge pip	es):				
Logging road, no cu	ulvert							
Tributary is: (check one)	⊠ Natural		Artificial, man-m	nade 🗌 Manip	ulated			
Stream Quality ^a : (check one)	□ High		Moderate	□ Low				

Waterbody ID: SAUA426

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:

Moderate sinuosity, weak to moderate riffle pool, strong grade control, moderate bars and benches, debris piles.

saua426 previously named saub111

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





Waterbody SAUA426 facing southwest upstream



Waterbody SAUA426 facing northwest across



Waterbody SAUA426 facing northeast downstream
Survey Descriptio	n								
Project Name:		Waterbody Na				aterbody ID:		Date:	
Atlantic Coast Pipe	line	UNT to Buck	chorn Creek	K	S	AUA424		9/23/2	2016
State:	County:		Company:		Crew N	Vember	Pl	hotos:	
Virginia	Augusta		ERM		Initials	: GB, AS	0	1-03	
Tract Number(s):			Nearest			Associated W	etland II	D(s):	
07-001- AR466			Milepost: 12	20.2		none			
Survey Type: (check one)		e □Re-F	Route	⊠Access Road	1	□Other:			
Physical Attribute	S								
Stream Classification: (check one)	Ephemera	al 🗆 Inter	rmittent	⊠Perennial					
Waterbody Type:									
(check one)	River ⊠ Str	ream 🗆 Dito	ch 🗆 Ca	anal 🗌 Other	:				
OHWM Width: 20.0 ft.	OHWM Indica (check all that appl)		⊠ Clear lir on bank	ne ⊠Shelvin	g	□Wrested vegetation	⊠S	Scouring	□Water staining
Height:	□Bent. r	natted, or missin	na ⊡Wrack li	ne ⊠Litter a	nd	□Abrupt plant	t 🗆	☐Soil characte	ristic change
<u>3.0</u> ft. N/A□	vegetatio	n	0	debris		community ch	ange		Ŭ
Width of Waterbody - 1 Bank to Top of Bank:		of Waterbody - of Slope:	Toe of Slope	Width of Waterb Water Edge:	ody - W		Depth of (Approx.)	f Water:	
_27 ft.		_10.0_ ft.		-	15.0_ ft.			_1.0_1	ít.
<u></u>	-	<u>_10.0</u> _1t.		N/A□	<u>10.0_</u> 1t.		N/A□		
Sinuosity: (check one)	Water (Approx.)	velocity:		Bank height		I	Bank slo	•	
□Straight		_2.0_ fps		Right:	<u>6_</u> ft.			Right: 85	degrees
⊠Meanderi	ng N/A 🗆	<u></u> .pc		Left:	<u>5_</u> ft.			Left:	degrees
Qualitative Attribu					<u> </u>				
Water Appearance:									
(check one)	No water ⊠0	Clear DTurb			rface um	□Algal [mats	□Other:		
Substrate:	Bedrock 🛛 🖾 Bo	oulder 🛛 Cobb	ole 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ c	lay 🗆 Organic	□ Ot	her:	
% of Substrate:	<u> % 10 </u> %	% <u>40</u> %	<u>40</u> %	<u> 5 </u> %	<u>5</u> %	%		%	
Width of Riparian Zone	e: Vegetative	e Layers:							
405.4	(check all that	of Dominants:	⊠ Trees:			ngs/Shrubs:		Herbs	
<u>125_ft</u> - N/A□	(approx.)	or Dominants.	<u>_10_</u> in.	-	<u>2</u> in.				
Dominant Bank Vegeta Northern red oak, s		iestnut oak, w	vhite pine, r	nountain laure	I				
Aquatic Habitats (ex: se	• •					submerged wood,	riffles, de	ep pools):	
Cobble, roots along						<u> </u>		,	
Aquatic Organisms Ob	. ,								
Mayfly, caddis fly, s	tonefly								
T&E Species Observed	(list):								
none									
Disturbances (ex: livest			e discharge pipe	es):					
Forest service road	along left ban	k							
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	ade 🛛 Manip	ulated				
Stream Quality ^a : (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:

Moderate sinuosity, weak to moderate riffle pool, strong grade control, strong bars and benches, debris piles.

saua424 previously named saub113





Waterbody SAUA424 facing north upstream



Waterbody SAUA424 facing west across



Waterbody SAUA424 facing south downstream

Survey Description	n							
Project Name:	_	Waterbody N		_		aterbody ID:		Date:
Atlantic Coast Pipel	ine	UNT to Bud	khorn Cree	k	S	AUA425		9/23/2016
State:	County:		Company:		Crew N	lember	Ph	otos:
Virginia	Augusta		ERM		Initials	: GB, AS	01	1-03
Tract Number(s):			Nearest Mil	epost: 120.2		Associated W	etland ID	(s):
07-001- AR466A						none		
Survey Type: (check one)		ne 🗆 Re	-Route	⊠ Access Road		□Other:		
Physical Attributes	S							
Stream Classification: (check one)	⊠Epheme	ral □Int	ermittent	Perennial				
Waterbody Type: (check one)	River ⊠ S	tream 🗆 D	itch 🗆 C	anal 🛛 Other:	:			
OHWM Width: <u>1.0</u> ft.	OHWM Indic (check all that app		□ Clear lin on bank	ne 🗆 Shelving	g	□Wrested vegetation	⊠Sc	couring □Water staining
Height: ft. N/A□	□Bent, vegetati	matted, or miss ion	ing	ine ⊠Litter ar debris	nd	□Abrupt plan community ch		Soil characteristic change
Width of Waterbody - T Bank to Top of Bank:		of Waterbody e of Slope:	- Toe of Slope	Width of Waterbo Water Edge:	ody - W	ater Edge to	Depth of (Approx.)	Water:
<u>_2 f</u> t.		<u>0.5</u> ft.		N/A⊠	<u>.0_</u> ft.		N/A⊠	<u>0</u> ft.
Sinuosity:		r velocity:		Bank height			Bank slo	ре
(check one)	(Approx	·		Right:	2 H			Right:
		fps	5	Left:	<u>2</u> ft.			<u>85</u> degrees Left:
Meanderir	ng N/A⊠				<u>2_</u> ft.			<u>85</u> degrees
Qualitative Attribu	tes							
Water Appearance: (check one)	[]] No water □]Clear □Tu		neen ⊡Sui n surface scu		□Algal mats	□Other:	
Substrate: (check all that apply) % of Substrate:	Bedrock □ B	8oulder ⊠ Col % <u>10_</u> %			⊠ Silt/ cl <u>50_</u> %	lay		er:%
Width of Riparian Zone	: Vegetativ	ve Layers:						
<u>> ft.</u>	(check all the		⊠ Trees _ <u>6_</u> in.		⊠ Saplin _ <u>2_</u> in.	igs/Shrubs:	□H	erbs
N/Aᆽ Dominant Bank Vegeta	(approx.)		_ <u>_</u> _	-				
Northern red oak, s	. ,	vhite oak, mo	untain laure	I				
Aquatic Habitats (ex: su	ubmerged or emerge	ed aquatic vegetat	ion, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles, dee	p pools):
none								
Aquatic Organisms Ob	served (list):							
none								
T&E Species Observed	(list):							
none								
Disturbances (ex: livesto	ock access, manure	e in waterbody, wa	ste discharge pip	es):				
Logging road, no cu	ulvert, timbere	d						
Tributary is: (check one)	⊠ Natural		Artificial, man-m	nade 🗆 Manipu	ulated			
Stream Quality ^a : (check one)	🗆 High		Noderate	□ 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:

Weak sinuosity, leaf letter and fibrous roots present in channel, weak to absent ordinary high water mark, lacked hydric soils.





Form Rev. 07/09/2014



Waterbody SAUA425 facing north upstream



Waterbody SAUA425 facing east across



Waterbody SAUA425 facing south downstream

Survey Description	n											
Project Name:		Waterbo	-					aterbody ID:			Date:	
Atlantic Coast Pipe	line	UNT to	Buckh	orn Creeł	<		S	AUA428		9,	/23/2016	
State:	County:		C	Company:			Crew I	Member		Photos:		
Virginia	Augusta		E	ERM			Initials	s: GB, AS		SAUA42	8_001-003	
Tract Number(s):			1	Nearest Mile	epost:			Associated W	etland	ID(s):		
07-001			ŀ	120.4				None				
Survey Type: (check one)	⊠Center	line	□Re-Ro	oute		cess Road		□Other:				
Physical Attribute												
Stream Classification: (check one)	□Epherr	ieral	lnterm	nittent	⊠Pe	rennial						
Waterbody Type: (check one)	□River ⊠	Stream	Ditch	n 🗆 Ca	anal	Other:	:					
OHWM Width: _ <u>15</u> ft.	OHWM Ind (check all that a			⊠ Clear lir on bank	1e	Shelving	g	□Wrested vegetation	Þ	Scouring	□Water staining	
Height: _ <u>3_</u> ft. N/A□	⊠Ber vegeta	it, matted, or ation	missing	□Wrack li	ne	⊠Litter ar debris	nd	□Abrupt plan community ch		□Soil cha	aracteristic change	
Width of Waterbody - Bank to Top of Bank:		th of Waterk oe of Slope:		oe of Slope	Width Water		ody - W	ater Edge to	Depth (Approx.,	of Water:		
<u>_25</u> ft.		<u>6</u> ft.			N/A□	<u>_1</u>	<u>10</u> ft.		N/A□	_	<u>1</u> ft.	
Sinuosity: (check one)		er velocity:			Bank h	eight			Bank s	slope		
	(Аррг		4 6			Right:	<u>5_</u> ft.			Right:	40 degrees	
⊠Meander	ing		<u>1_</u> fps			Left:				Left:	-	
	ing N/A						<u>6_</u> ft.				<u>90</u> degrees	
Qualitative Attribu	utes											
Water Appearance: (check one)	□No water	⊠Clear	□Turbio		ieen surface	⊡Sur scu		□Algal mats	□Othe	r:		
Substrate: [(check all that apply) % of Substrate:	□ Bedrock 🛛 🔀		⊠ Cobble 0_%	e ⊠ Grave	el ⊠ 5		⊐ Silt/ c	clay □ Organic _%%		Other: _%		
Width of Riparian Zon	o. Vogoto											
		tive Layers: that apply)		⊠ Trees	:	Þ	⊠ Saplir	ngs/Shrubs:	\geq	I Herbs		
<u>100_ft</u> - N/A□	(approx.)	BH of Domir	nants:	<u>_14_</u> in.		-	<u>2</u> in.					
Dominant Bank Veget Red Oak, White Pi		Hornbear	m, Strip	ped Maple	e, Viole	t, Christi	mas fe	ern, multiflora	a rose	, winterg	reen	
Aquatic Habitats (ex: s	ubmerged or eme	rged aquatic v	egetation,	, overhanging	banks/roo	ots, leaf pac	ks, large	submerged wood	l, riffles,	deep pools)	:	
Deep pools and riff		iging bank	s and	roots, dow	vned lo	gs in str	eam b	bed				
Aquatic Organisms O	bserved (list):											
None												
T&E Species Observe	d (list):											
None												
Disturbances (ex: lives	tock access, manu	re in waterbod	ly, waste	discharge pipe	es):							
None												
Tributary is: (check one)	⊠ Natura	al		icial, man-m	ade	🗆 Manipu	ulated					
Stream Quality ^a : (check one)	⊠ High			lerate		□ 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 located in natural valley

saua428 previously named sauc008





Waterbody SAUA428 facing north upstream



Waterbody SAUA428 facing south downstream



Waterbody SAUA428 facing east across

Survey Descriptio	n							
Project Name:		Waterbody Na				aterbody ID:		Date:
Atlantic Coast Pipe	-	UNT to Stou	•	anch		AUA429		9/23/2016
State:	County:		Company:			Member		hotos:
Virginia	Augusta		ERM		Initials	: GB, AS		AUA429_001-003
Tract Number(s):			Nearest Mile	epost:		Associated W	etland II	D(s):
07-001			120.55			None		_
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 ⊠ Sti	ream 🗆 Dit	ch 🗆 C	anal 🗌 Other:				
OHWM Width: 3 ft.	OHWM Indica (check all that appl		⊠ Clear lir on bank	ne 🗆 Shelving	g	□Wrested vegetation	□\$	Scouring □Water staining
Height: 	⊠Bent, r vegetatio	matted, or missir on	ng ⊡Wrack li	ne □Litter ar debris	nd	☐Abrupt plan community ch		☐Soil characteristic change
Width of Waterbody - 1	op of Width	of Waterbody -	Toe of Slope	Width of Waterbo	ody - W	ater Edge to	Depth o	f Water:
Bank to Top of Bank:		of Slope:		Water Edge:			(Approx.)	
<u>_10_</u> ft.	-	<u>1_</u> ft.			<u>1</u> ft.		N/A□	<u>0.2</u> ft.
Sinuosity:	Water	velocity:		Bank height			Bank slo	ope
(check one)	(Approx.)			Right:				Right:
		<u>_0.5_</u> fp	S	Left:	<u>3_</u> ft.			<u>50</u> degrees Left:
	ng N/A□				<u>4_</u> ft.			<u>50</u> degrees
Qualitative Attribu	ites							
Water Appearance: (check one)	No water ⊠	Clear DTurl		neen ⊡Sur nisurface scu		□Algal [mats	□Other:	
	Bedrock 🗆 Bo	oulder 🗆 Cobl	ble 🛛 Grav	el 🛛 Sand 🛛	⊠ Silt/ c	lay 🗆 Organic	🗆 Ot	her:
(check all that apply) % of Substrate:	%%	%	<u> 5 </u> %	<u> 20 </u> %	<u>75_</u> %	%		%
Width of Riparian Zone	e: Vegetativ	e Layers:						
<u>ft</u> .	•	t apply) I of Dominants:	⊠ Trees _ <u>8_</u> in.		⊠ Saplir _ <u>2_</u> in.	ngs/Shrubs:	\boxtimes	Herbs
N/A⊠ Dominant Bank Vegeta	(approx.)			_				
White Oak, Chestn		aple, America	an Hornbea	m				
Aquatic Habitats (ex: s	ubmerged or emerge	d aquatic vegetatio	on, overhanging	banks/roots, leaf pac	ks, large	submerged wood,	, riffles, de	eep pools):
None								
Aquatic Organisms Ob	served (list):							
None								
T&E Species Observed	l (list):							
None								
Disturbances (ex: livest	ock access, manure	in waterbody, wast	e discharge pip	es):				
None								
Tributary is: (check one)	⊠ Natural	□ Ai	tificial, man-m	ade 🗆 Manipu	ulated			
Stream Quality ^a : (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 located in a drainage way

saua429 previously name sauc009





Waterbody SAUA429 facing north upstream



Waterbody SAUA429 facing south downstream



Waterbody SAUA429 facing east across

Survey Descriptio	n								
Project Name:		Waterbody Na				/aterbody ID:			Date:
Southeast Reliabilit	У	UNT to Stou	itameyer Bi	ranch	S	AUB013			10/28/2014
State:	County:	1	Company:		Crew I	Member Initials	:	Photos:	
Virginia	Augusta		NRG		TP; C	CR; CG		3	
Tract Number(s):			Nearest Mile	epost:		Associated W	etland	ID(s):	
07-001-A0-011			115.75			None			
Survey Type: (check one)	⊠Centerline	e □Re-I	Route	□ Access Road		□Other:			
Physical Attribute	S								
Stream Classification: (check one)	□ Ephemera	al 🛛 Inte	rmittent	Perennial					
Waterbody Type:									
	River Str	ream 🗆 Dite	ch 🗆 Ca	anal 🗌 Other:	:				
OHWM Wisteh	OHWM Indica (check all that appl		⊠ Clear lir		a.	□Wrested		Securin	g ⊡Water
Width: _ <u>3_</u> ft.	(oncontantinat app)	"	on bank	ne 🗆 Shelvin	y			Scouring	staining
Height:	□Bent, r	natted, or missir	ng ⊡Wrack li	ne 🗆 Litter ar	nd	□Abrupt plan	t	□Soil cl	haracteristic change
ft. N/A□	vegetatio	n		debris		community ch	ange		
Width of Waterbody - 1			Toe of Slope	Width of Waterb	ody - W			of Water	:
Bank to Top of Bank:	to Toe	of Slope:		Water Edge:			(Approx.)		
<u> 5 </u> ft.	-	<u>2</u> ft.		N/A⊠	ft.		N/A⊠	-	ft.
Sinuosity:	Water	velocity:		Bank height			Bank s	slope	
(check one)	(Approx.)			Right:				Right	:
		f	ps	Left:	<u>1.5_</u> ft.			Left	<u>90</u> degrees
⊠Meanderi	ng N/A⊠				<u>3_</u> ft.			Lon	_ <u>80</u> degrees
Qualitative Attribu	ites								
Water Appearance: (check one)	No water □	Clear □Turt	oid □Sh	neen 🗆 Sui	rface	□Algal	□Othe	r:	
			on	i surface scu		mats			
Substrate:	Bedrock 🗆 Bo	oulder 🛛 Cobl	ble 🛛 Grav	el 🛛 Sand 🛛	⊠ Silt/ c	clay 🗆 Organic		Other:	
% of Substrate:	%	<u> % 40 %</u>	<u> 30 </u> %	_20_%	<u>10_</u> %	%		_%	
Width of Riparian Zone	e: Vegetative	e Lavers:							
-	(check all that	apply)	☑ Trees			ngs/Shrubs:	\boxtimes	Herbs	
<u>_50_ft</u> - N/A□	Avg. DBH (approx.)	of Dominants:	<u>_10_</u> in.	-	<u>2</u> in.				
Dominant Bank Vegeta	tion (list):								
White Oak, Chestn	ut Oak, Witch F	lazel, White	Pine						
Aquatic Habitats (ex: se	ubmerged or emerge	d aquatic vegetatic	on, overhanging	banks/roots, leaf pac	ks, large	submerged wood,	, riffles,	deep pool	s):
None									
Aquatic Organisms Ob	served (list):								
None									
T&E Species Observed	l (list):								
None									
Disturbances (ex: livest	ock access, manure i	n waterbody, wast	e discharge pipe	es):					
Culvert at centerline	e, logging on le	eft bank,							
Tributary is: (check one)	⊠ Natural	□ Ar	tificial, man-m	ade 🗆 Manip	ulated				
Stream Quality ^a : (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 appears to be weakly intermittent and there is no flowing water present. A three foot diameter culvert is located under a road just north of the photo point. Not on USFS land. Falls on private land requiring the TRO process.





SAUB013 facing north upstream



SAUB013 facing south downstream



SAUB013 facing west across

Survey Description	n									
Project Name:		Waterbody Na				aterbody ID:		Date:		
Southeast Reliability	-	UNT to Stou	tameyer			AUB012		10/29/2014		
State:	County:		Company:		Crew I	Member Initials:	Photos:			
Virginia	Augusta		NRG		TP; C	CR; CG	3			
Tract Number(s):			Nearest Mile	epost:		Associated Wet	and ID(s):			
07-001-A0-011; 07-	001-A0-012		115.9			None				
Survey Type: (check one)	⊠Centerline	e □Re-F	Route	□ Access Road		□Other:				
Physical Attributes	S									
Stream Classification: (check one)	Ephemera	al ⊠Inter	rmittent	Perennial						
Waterbody Type:	•									
	River Str	eam 🗆 Dito	ch 🗆 Ca	anal 🗌 Other:						
ОНѠМ	OHWM Indica									
Width: _ <u>4_</u> ft.	(check all that apply	/)	⊠ Clear lir on bank	ne 🗆 Shelvin	g	□Wrested vegetation	Scourin	g □Water staining		
Height:	⊟Bent, n	natted, or missin	ng ⊡Wrack li	ne 🗆 Litter ar	nd	□Abrupt plant	□Soil c	haracteristic change		
ft. N/A□	vegetatio			debris		community chan	0			
Width of Waterbody - T Bank to Top of Bank:		of Waterbody - of Slope:	Toe of Slope	Width of Waterbo Water Edge:	ody - W		pth of Wate	r:		
_5 ft.		_3_ ft.			ft.		_	ft.		
		<u></u>		N/A⊠		N/2	$A \boxtimes$			
Sinuosity: (check one)	Water (Approx.)	velocity:		Bank height		Ba	nk slope			
□Straight	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		ps	Right:	<u>2</u> ft.		Righ	t: 90 degrees		
			μs	Left:			Lef	t:		
Meanderir					<u>3_</u> ft.			<u>80</u> degrees		
Qualitative Attribu Water Appearance:	tes									
	[]] No water □0	Clear 🗆 Turb		neen ⊡Sui i surface scu		□Algal □C mats	Other:			
Substrate:	Bedrock 🗆 Bo	ulder 🛛 Cobb	ole 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ c	clay 🗆 Organic	□ Other:			
(check all that apply) % of Substrate:	%	<u>% 40 %</u>	<u> 30 </u> %	<u>20</u> %	<u>10_</u> %	%	%			
Width of Riparian Zone	e: Vegetative	e Layers:								
	(check all that	apply)	⊠ Trees			ngs/Shrubs:	⊠ Herbs			
_ <u>50_ft</u> - N/A□	Avg. DBH (approx.)	of Dominants:	<u>8</u> in.	-	<u>2</u> in.					
Dominant Bank Vegeta	tion (list):									
White Oak, Chestnu	ut Oak, Witch F	lazel, White I	Pine, Moun	tain Laurel						
Aquatic Habitats (ex: su	ubmerged or emerged	d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood, rif	fles, deep poo	ls):		
Cobble, a few roots	•	me pools								
Aquatic Organisms Ob	served (list):									
None										
T&E Species Observed	(list):									
None										
Disturbances (ex: livesto	ock access, manure i	n waterbody, waste	e discharge pipe	es):						
Logging road along	right bank									
Tributary is: (check one)	⊠ Natural		tificial, man-m	ade 🗆 Manipi	ulated					
Stream Quality ^a : (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:

Weak intermittent stream, slightly incised. Cobble present and a few pools with water. No bars or benches. Logging road on right bank.





SAUB012 facing north upstream



SAUB012 facing south downstream



SAUB012 facing east across

Survey Description	n							
Project Name:		Waterbody Na				aterbody ID:		Date:
Atlantic Coast Pipel		UNT to Jenn		h		AUA421		9/20/2016
State:	County:		Company:			Member Initials		notos:
Virginia	Augusta		NRG		CR, S			AUA421_001-003
Tract Number(s):			Nearest Mile	epost:		Associated W	etland ID)(s):
07-001			122.45			None		
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 □ Ca	anal 🛛 Other:	:			
OHWM Width:	OHWM Indica (check all that apply		⊠ Clear lir on bank	ne 🗆 Shelving	g	□Wrested vegetation	□S	couring □Water staining
<u>3</u> ft. Height: 0.5 ft.	□Bent, n vegetatio	natted, or missin		ne □Litter ar debris	nd	Abrupt plant		Soil characteristic change
N/A 🗆	-					,	0	
Width of Waterbody - T Bank to Top of Bank:		of Waterbody - ` of Slope:	Toe of Slope	Width of Waterbo Water Edge:	ody - W		Depth of (Approx.)	Water:
<u>15_</u> ft.	-	<u>1_</u> ft.		N/A□ -	<u>2</u> ft.		N/A□	<u>0.3</u> ft.
Sinuosity:		velocity:		Bank height			Bank slo	ре
(check one)	(Approx.)	0.5.6		Right:	_4_ ft.			Right: 50 degrees
⊠Meanderir	~	<u>_0.5</u> fps	i	Left:				Left:
					<u>3_</u> ft.			<u>30</u> degrees
Qualitative Attribu Water Appearance:	tes							
	No water ⊠C	Clear 🗆 Turb		neen ⊡Sui nisurface scu		□Algal [mats	□Other:	
	Bedrock 🗆 Bo	ulder 🗆 Cobb	le 🛛 Grave	el 🛛 Sand 🛛	□ Silt/ c	ay 🗆 Organic	: 🗆 Otł	her:
(check all that apply) % of Substrate:	%	_%	<u>% 30</u> %	<u>70</u> %		_%%		%
Width of Riparian Zone								
ft.	(check all that	apply) of Dominants:	⊠ Trees			ngs/Shrubs:	×F	Herbs
N/A⊠	(approx.)		<u>14</u> in.	-	<u>2</u> in.			
Dominant Bank Vegeta White pine, mounta		non smilax, de	ogwood, sp	bhagnum				
Aquatic Habitats (ex: su	ubmerged or emerged	d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood,	, riffles, de	ep pools):
Leaf packs								
Aquatic Organisms Ob	served (list):							
None								
T&E Species Observed None	l (list):							
Disturbances (ex: livesto	ock access, manure i	n waterbody, waste	e discharge pipe	es):				
None								
Tributary is: (check one)	⊠ Natural	□ Ar	ificial, man-m	ade 🗆 Manipu	ulated			
Stream Quality ^a : (check one)	⊠ High		oderate	□ Low				

Waterbody ID:

SAUA421

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 loses bed in some sections when the stream goes underground

saua421 previously named sauc010





Waterbody SAUA421 facing northeast upstream



Waterbody SAUA421 facing southwest downstream



Waterbody SAUA421 facing east across

Survey Description	on									
Project Name:		Waterbo	•		_		/aterbody ID:		Date	
Atlantic Coast Pipe	eline	UNT to	Jennii	ngs Branc	h	S	AUA422		9/2	0/2016
State:	County:		(Company:		Crew	Member	I	Photos:	
Virginia	Augusta		E	ERM		Initials	s: GB, AS		SAUA422_	_001-003
Tract Number(s):			I	Nearest Mile	epost:		Associated W	etland	ID(s):	
07-001				118.1			None			
Survey Type: (check one)	⊠Cente	erline	□Re-R	oute	□ Access Road	d	□Other:			
Physical Attribut										
Stream Classification (check one)	n: □Epher	meral	□Intern	nittent	⊠Perennial					
Waterbody Type: (check one)	□River ⊠	Stream		n 🗆 Ca	anal 🗆 Othe	r:				
OHWM Width: 4 ft.	OHWM Inc (check all that			⊠ Clear lir on bank	ne 🗆 Shelvir	ng	□Wrested vegetation		Scouring	□Water staining
Height:		ent, matted, or tation	· missing	∣ □Wrack li	ne □Litter a debris	Ind	□Abrupt plan community ch		□Soil chara	cteristic change
N/A□ Width of Waterbody -	Top of Wi	dth of Water	nody - T	oe of Slone	Width of Waterb	nodv - W	ater Edge to	Denth	of Water:	
Bank to Top of Bank:		Toe of Slope			Water Edge:	, cuy n	Lugo to	(Approx.)		
<u>_15</u> ft.		<u>2</u> ft.			N/A□	<u>3</u> ft.		N/A□	0.	<u>5_</u> ft.
Sinuosity:		ater velocity:			Bank height			Bank s	slope	
(check one)		prox.)			Right:	0 (1			Right:	0
_		-	<u>1_</u> fps		Left:	<u>3_</u> ft.			Left:	0_degrees
Meande	ring N/A	A 🗆				<u>4</u> ft.			_7	0_degrees
Qualitative Attrib	utes									
Water Appearance: (check one)	\Box No water	⊠Clear	□Turbio			urface cum	□Algal mats	□Othe	r:	
	Bedrock	Boulder		e 🛛 Grave	el 🛛 Sand	□ Silt/ o	clay 🗆 Organio	; □0	Other:	
(check all that apply) % of Substrate:	<u>5</u> %	%	<u>20_</u> %	<u> 55 </u> %	<u>20</u> %		_%%	·	%	
Width of Riparian Zor		ative Layers:								
<u>10 ft</u> ·	·	Ill that apply) DBH of Domin	nants:	⊠ Trees: _ <u>12_</u> in.		⊠ Sapliı <u>2_</u> in.	ngs/Shrubs:	\boxtimes] Herbs	
N/A□ Dominant Bank Vege		/								
White pine, mount		estnut oak	, scarle	et oak, low	/bush blueberr	y, pas	ture rose			
Aquatic Habitats (ex:	submerged or em	erged aquatic v	egetation	, overhanging	banks/roots, leaf pa	cks, large	submerged wood	l, riffles,	deep pools):	
Leaf packs, downe	-	hanging ro	ots							
Aquatic Organisms C	bserved (list):									
None										
T&E Species Observe None	ed (list):									
Disturbances (ex: lives	stock access mar	ure in waterboo	tv waste	discharge nine	25):					
None			.,,		/-					
Tributary is: (check one)	⊠ Natu	ral	□ Artif	ficial, man-m	ade 🗆 Manip	oulated				
Stream Quality ^a : (check one)	⊠ High		□ Moo	derate	□ Low					

Waterbody ID:

SAUA422

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:

saua422 previously named sauc011





Waterbody SAUA422 facing east upstream



Waterbody SAUA422 facing west downstream



Waterbody SAUA422 facing south across

Survey Descriptio	n	•							
Project Name:		Waterbody Nar		_		aterbody ID:	Date:		
Atlantic Coast Pipel	line	UNT to Jenn	ings Branc	h	S	AUA423		9/20/2	2016
State:	County:		Company:		Crew I	Member	1	Photos:	
Virginia	Augusta		ERM		Initials	s: GB, AS	:	SAUA423_0	01-003
Tract Number(s):			Nearest			Associated W	etland	ID(s):	
07-001			Milepost: 12	23.0		None			
Survey Type: (check one)	⊠Centerline	e □Re-F	Route	□ Access Road		□Other:			
Physical Attribute	s								
Stream Classification: (check one)	^{IX} Ephemera	al 🛛 🖾 Inter	mittent	Perennial					
Waterbody Type: (check one)]River ⊠ Str	eam 🗆 Dito	h 🗆 Ca	anal 🛛 Other:					
OHWM Width: <u>3</u> ft.	OHWM Indica (check all that apply		⊠ Clear lir on bank	ne 🗆 Shelving	g	□Wrested vegetation		Scouring	□Water staining
Height: _ <u>0.5_ft</u> .	□Bent, r vegetatio	natted, or missin	g	ne □Litter ar debris	nd	□Abrupt plan community ch		□Soil characte	eristic change
N/A□	-						0		
Width of Waterbody - 1 Bank to Top of Bank:		of Waterbody - of Slope:	Foe of Slope	Width of Waterbo Water Edge:	ody - W	ater Edge to	Depth (Approx.)	of Water:	
<u>_8_</u> ft.	_	_1ft.			<u>2</u> ft.		N/A□	0.2	ft.
Sinuosity:	Water	velocity:		N/A□ Bank height			Bank s	lope	
(check one)	(Approx.)	·····,		Right:				Right:	
		<u>_0.3_</u> fps		Left:	<u>3_</u> ft.			 Left:	degrees
⊠Meanderi	ng N/A□				<u>5_</u> ft.				degrees
Qualitative Attribu	ites								
Water Appearance: (check one)	No water ⊠0	Clear □Turb	id □Sh	ieen ⊡Sui	rface	□Algal	□Other	r:	
			on	surface scu		mats			
Substrate:	Bedrock 🛛 Bo	oulder 🗆 Cobb	le 🗆 Grave	el 🛛 Sand 🛛	⊠ Silt/ c	clay 🗆 Organic	; □C	Other:	
% of Substrate:	<u> % 10 </u> %	//	<u>% 0</u> %	_20_%	<u>70_</u> %	%		_%	
Width of Riparian Zone	e: Vegetative	e Layers:							
	(check all that		⊠ Trees			ngs/Shrubs:	\boxtimes	Herbs	
<u>ft</u> . N/A⊠	ауд. DBП (approx.)	of Dominants:	<u>_22</u> _in.	-	<u>2</u> in.				
Dominant Bank Vegeta									
Red oak, post oak,	blackberry, rec	I maple, comr	non blue v	iolet					
Aquatic Habitats (ex: se	ubmerged or emerged	d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles, o	deep pools):	
Leaf packs									
Aquatic Organisms Ob	served (list):								
None									
T&E Species Observed	l (list):								
None									
Disturbances (ex: liveste	ock access, manure i	n waterbody, waste	e discharge pipe	es):					
None									
Tributary is: (check one)	⊠ Natural	hA 🗆	ificial, man-m	ade 🗆 Manipu	ulated				
Stream Quality ^a : (check one)	⊠ High	□ Mo	derate	□ 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 loses bed in some sections when the stream goes underground

saua423 was previously named sauc012





Waterbody SAUA423 facing southeast upstream



Waterbody SAUA423 facing northwest downstream



Waterbody SAUA423 facing southwest across
near Waterbod	A management of the second	÷L						
Irvey Description oject Name:		Waterbody N	ame:	14. 1 	Wa	aterbody ID:		Date:
ICP	CP UNT+			un	5	Saupool		20 Aug 2015
ate:	County/Parish:		Company:			lember Initials:	Photos	C- NUL
VA	Augus	ta	ESI		KWI	M, CSM	NE;	,SE,NW
act Number(s):			Nearest Milepo	st:		Associated Wetlan	nd ID(s):	Carenta a sua
07-001-A	016	North Printer	123,4	1		None		
irvey Type: eck one)	Centerli	ne 🗆 Re	-Route	Access Road	9	Other:	ine entre	
hysical Attribute		1.						
ream Classification: meck one)	□Ephem	eral Xin	termittent	Perennial				
aterbody Type: neck one)	River 🕱	Stream 🗆 🗆	Ditch 🗆 Cana	al 🗆 Othe	г.			
Width: <u>5</u> ft.	OHWM Indi (check all that a		Clear line on bank	□Shelvi	ng	□Wrested vegetation	□Scour	ing ⊟Water staining
Height: 0,5 _{ft} .	□ Ber vegeta	t, matted, or mis ation	sing Wrack line	□Litter a debris	and	□ Abrupt plant community chang		il characteristic change
vidth of Waterbody - ank to Top of Bank:		th of Waterbody oe of Slope:	- Toe of Slope W	Vidth of Water Vater Edge:	body - V	Vater Edge to De	pth of Wa	ater:
T ft			ľ	alei Luge.	1			0.1 ft.
<u> </u>	•	π.	Ν	-/AD	1	.ft. N//		
inuosity: check one)	Wa (App	ter velocity:	E	Bank height		Ba	nk slope	-
Straight		Ø	fps	Right:	1	ft.	Ri	ght: <u>30</u> degrees
Meande	ering N/A			Left:	1	ft.		Left: <u>45</u> degrees
Qualitative Attrib	outes		1 1					
Water Appearance: check one)	□No water		Turbid 🗆 She		Surface	· · · · · · · · · · · · · · · · · · ·	Other:	11 241
	D Badaada 6				scum	mats / clay	Other	-
Substrate: (check all that apply) % of Substrate:	Bedrock [Cobble Ø Grave				L Other	%
Midth of Dispation 7	STATE OF							
Width of Riparian Zo <u>(60 ft</u> . N/AD	(check i	ative Layers: all that apply) DBH of Domina .)	nts: 5	: _in.	Sar	olings/Shrubs: in.	Her N/A	bs A_in.
Dominant Bank Voc	intation (list):		Carya cord	Formis, 7	Plato	inus occia	Jento	lis, Prunus sp
Aquatic Habitats (e)								pools):
Aquatic Organisms NONE	Observed (list)							
T&E Species Obse NONE	rved (list):			1.64				
Disturbances (ex: 1 Cottle	ivestock access m	anure in waterbody	v waste discharge pip	ces):				
Tributary is: (check one)	XN	atural	🗆 Artificial, man-	made 🗆 N	lanipulat	ed		
Stream Quality * : (check one)	□н	ich	□ Moderate	XL	ow			

	Waterbody ID:
	saup006
High Quality: Natural channel, natural vegetation extends at least one or two ac roots; water color is clear to tea-colored; no barriers to fish movement; many t disturbance by livestock or man.	ctive channel widths on each side; banks stable and protected t fish cover types available; diverse and stable aquatic habitat; r
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extend or riparian vegetation only moderately compromised; banks moderately unstable film; moderate odor; minor barriers to fish movement; fair aquatic habitat; minimum	e; water color is cloudy, submerged objects covered with greenis
Low Quality: Channel is actively down cutting or widening; rip rap and channelizat width on each side; lack of regeneration; filtering function severely compromised; pollutants (algal mats, surface scum, surface sheen); heavy odor; severe barrier from livestock or man.	banks unstable (eroding); water color is muddy and turbid; obviou
Notes:	
	Constant page water
Waterbody Sketch (Include north arrow, centerline distance from centerline,	, data point location, survey boundary, and IDs of associated featur
	A
	И
1	
* /	100g
	abool a
	CL 31
	Estudy dor
	A liste the column searched provide the search
2-9-0-1-9	
A State of the second se	

Environmental Field Surveys Waterbody Photo Page



Waterbody saup006 facing northwest upstream.



Waterbody saup006 facing southeast downstream.

Environmental Field Surveys Waterbody Photo Page



Waterbody saup006 facing northeast across bank.

Survey Description	on							
Project Name:		Waterbody Na	me:		W	aterbody ID:		Date:
Atlantic Coast Pipe	line	UNT to Elk F	Run		S	AUB119		8/17/2015
State:	County:		Company:		Crew M	Member Initials	s: Photos	:
Virginia	Augusta		NRG		TP, S	A	01-03	3
Tract Number(s):	-		Nearest Mil	epost:		Associated W	etland ID(s):	
07-001-A016.AR-A	R1		124			fringe		
SurveyType: (checkone)		e □Re-F	Route	⊠Access Road	ł	□Other:		
Physical Attribute	es							
Stream Classification: (check one)	□Ephemer	al ⊠Inte	rmittent	□Perennial				
Waterbody Type: (check one)	River 🛛 Str	eam 🗆 Dite	ch 🗆 C	anal 🗆 Other	r:			
ОНWM	OHWM Indica							
Width:ft.	(check all that apply	/)	⊠ Clearli on bank	ne ⊠Shelvir	ng	□Wrested vegetation	□Scouri	ng 🗆 Water staining
Height: ft.	□Bent, r vegetatio	natted, or missir	ng ⊡Wrackli	ne 🗆 Litterai debris	nd	□Abrupt plan community ch		characteristic change
N/A 🗆	° °						C	
Width of Waterbody - 1 Bank to Top of Bank:		of Waterbody - of Slope:	Toe of Slope	Width of Waterb Water Edge:	ody - W	ater Edge to	Depth of Wat	er:
-		-		Ū				0.2 #
<u>_6.0</u> ft.	-	<u>2.0</u> ft.			<u>3.0_</u> ft.		N/A□	<u>0.2</u> ft.
Sinuosity	Water	velocity:		Bank height			Bank slope	
Sinuosity: (check one) □Straight	(Approx.)			Right:		·	Rig	ht:
		<u>0.5</u> fp:	S		<u>4.0</u> ft.			70 degrees
⊠Meander	ing N/A□			Left:	<u>4.0</u> ft.		Le	eft:
Qualitative Attribu	utes							
Water Appearance: (check one)	No water ⊠C	Clear ⊡Turt			rface um	□Algal [mats	□Other:	
	Bedrock 🗆 Bo	ulder 🛛 Cobb	ole 🛛 Grav	el 🛛 Sand 🛛	⊠ Silt/ c	lay 🗆 Organio	c 🗆 Other:	
(check all that apply) % of Substrate:	%	<u>% 15</u> %	<u> 10 </u> %	<u> 10 </u> %	<u>65 </u> %	%	%	
Width of Riparian Zone	e: Vegetativ	e Layers:						
10.1	(check all that		⊠Trees	x D	⊠ Sapliı	ngs/Shrubs:	⊠ Herbs	i
<u>10 ft</u> . N/A□	(approx.)	of Dominants:	<u>_12_</u> in.		<u>2</u> in.			
Dominant Bank Vegeta	()							
Black walnut, red c	edar, green as	h, jewel weed	2					
Aquatic Habitats (ex: s	ubmerged or emerge	d aquatic vegetati	on, overhanging	gbanks/roots, leaf pao	cks, large	e submerged wood	l, riffles, deep po	ools):
cobble								
Aquatic Organisms Ob	oserved (list):							
none								
T&E Species Observe	d (list):							
none	. ,							
Disturbances (ex: lives	tock access manure	in waterbody wast	te discharge pin	es):				
Livestock access			e aloonaigo pip					
Tributary is: (check one)	⊠ Natural	□ Ar	tificial,man-n	nade 🗆 Manip	oulated			
Stream Quality ^a : (check one)	🗆 High	⊠ Mo	oderate	□ Low				

Waterbody ID: SAUB119

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:

Degraded intermittent stream in cattle pasture. Noted bank failures due to livestock access, which has create fringe wetlands on either side of stream.





Waterbody SAUB119 facing northwest upstream



Waterbody SAUB119 facing south downstream



Waterbody SAUB119 facing west-southwest across

rvey Description				have the day ID:	Date:
oject Name:	さいちょうしん してきになる ほど 特許ない	ody Name:		Waterbody ID:	20 A Ug 2015
ACP		NT to Elk	And the second se	saup 005	0
A REAL PROPERTY AND A REAL	ounty/Parish:	Company:	and the second		notos:
VA I	Augusta	ESI	K	WM, CSM	V,S,E
act Number(s):		Nearest Milep	ost:	Associated Wetland II	D(s):
07 - 001 - f	1016	123.1		None	
rvey Type: ack one)		□Re-Route	□Access Road	□Other:	
ysical Attributes	a deservation and the second				
ream Classification:	Ephemeral	⊠intermittent	DPerennial		
	- Ephemeral	Jan Renningen			
aterbody Type: eck one)	iver 🕅 Stream	Ditch Car	nal 🗌 Other:		
Width: <u>3</u> ft.	OHWM Indicator: (check all that apply)	Clear line on bank	e ∯Shelving	Wrested vegetation	Scouring DWater staining
Height: 17.3 #	□Bent, matted, vegetation	or missing	e 🗆 Litter and debris	□Abrupt plant community change	Soil characteristic change
	a subscription of the second second	States and a state of			Sector Manager
idth of Waterbody - Top ank to Top of Bank:	p of Width of Wate to Toe of Slop	erbody - Toe of Slope	Width of Waterbody Water Edge:	- Water Edge to Depth (Approx.)	of Water:
10	2		2		0, 1 ft.
<u> </u>	_~	ft.	N/A	<u>π.</u> N/A□	<u> </u>
inuosity:	Water veloci	y:	Bank height	Bank s	slope
heck one)	(Approx.)	1	Right: 4		Right: 45 degrees
	-	fps	Left: 7	<u></u> π.	Left: / 00
Meandering			3	ft.	degrees
Qualitative Attribut	es				
Water Appearance:					
check one) 🔲	No water Clear	□Turbid □Sh or	neen 🗆 Surface scum	ce	Υ Γ.
Substrate:	Bedrock D Boulder	Cobble Grav	el 🗆 Sand 🕅	Silt/ clay	Other:
check all that apply) % of Substrate:	%%	40% 10	_%%	50%% _	%
Width of Riparian Zone	: Vegetative Lay	ers:			
	(check all that apply)	A Tree	s: 💢	Saplings/Shrubs:	Herbs N/A in.
√A)Ωπ.	Avg. DBH of De	ominants: <u>20</u>	in	in	N/A in.
			Transt	iene contancia	
Carya Cordifor	mis Diospy	1105 Virginian	na, , , , mpai	tiens capensis	
				s. large submerged wood, riffle	
intermittent Wo	yer and pools				
Aquatic Organisms Ob Water Strider	served (list):	amselflies			
T&E Species Observed Non C	d (list):				
Disturbances (ex: lives Cattle	took accessi manure in wa	terbody waste discharge p	opes):		
Tributary is: (check one)	X Natural	🗆 Artificial, man	-made 🗆 Manipu	ulated	
Stream Quality * : (check one)	🗆 High	□ Moderate	Low		

Waterbody ID: Saup 005 High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by 2 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) 4 N Soublig Saupoo shed tridor

Environmental Field Surveys Waterbody Photo Page



Waterbody saup005 facing north upstream.



Waterbody saup005 facing south downstream.

Environmental Field Surveys Waterbody Photo Page



Waterbody saup005 facing east across bank.

Survey Descriptio	n							
Project Name:		Waterbody Na	me:		W	aterbody ID:		Date:
Atlantic Coast Pipel	ine	UNT to Elk I	Run		S	AUB118		8/17/2015
State:	County:		Company:		Crew N	Member Initials:	Photos	
Virginia	Augusta		NRG		TP, S	A	01-03	
Tract Number(s):			Nearest Mil	epost:		Associated We	tland ID(s):	
07-001-A016.AR-A	R1		124			WAUB107		
SurveyType: (checkone)		e □Re-l	Route	⊠Access Road	1	□Other:		
Physical Attribute	s							
Stream Classification: (check one)	Ephemer	al ⊠Inte	rmittent	□Perennial				
Waterbody Type: (check one)	River 🛛 Str	eam 🗆 Dit	ch 🗆 C	anal 🗆 Other	-			
ОНWM	OHWM Indica							
Width: <u>3.0</u> ft.	(check all that apply	/)	⊠ Clearli on bank	ne ⊠Shelvir	ng	□Wrested vegetation	□Scouriı	ng ⊟Water staining
Height:	□Bent, r	natted, or missir	ng ⊡Wrackli	ne 🗆 Littera	nd	□Abruptplant	□Soil	characteristic change
ft. N/A□	vegetatio			debris		community cha	0	
Width of Waterbody - Te Bank to Top of Bank:		of Waterbody - of Slope:	Toe of Slope	Width of Waterb Water Edge:	ody - W	ater Edge to	epth of Wate	er:
_5.0 ft.				Ŭ	<i>"</i>			0.2 ft.
<u></u> n.		<u>_1.0_</u> ft.		N/A□	<u>2.0_</u> ft.	Ν	/A□	<u>0.2</u> 1t.
Sinuosity: (check one)	Water	velocity:		Bank height		B	ank slope	
(<i>check one</i>) [™] □Straight	(Approx.)	-		Right:			Righ	t:
		<u>0.5</u> fp	S	_ Left:	<u>4.0</u> ft.		Le	<u>85</u> degrees
⊠Meanderi	ng N/A□				<u>4.0</u> ft.		Le	<u>85</u> degrees
Qualitative Attribu	tes							
Water Appearance: (check one)	No water ⊠C	Clear ⊡Turt		neen ⊡Su nisurface scu		□Algal □ mats	Other:	
	Bedrock 🗆 Bo	ulder 🛛 Cobb	ole 🛛 Grav	el 🛛 Sand 🛛	⊠ Silt/c	lay 🗆 Organic	Other:	
(check all that apply) % of Substrate:	%	<u>% 20</u> %	<u> 10 </u> %	<u> 10 </u> %	<u>60 </u> %	%	%	
Width of Riparian Zone	: Vegetativ							
	(check all that	apply)	⊠Trees	. [🗆 Saplii	ngs/Shrubs:	🛛 Herbs	
<u>10 ft</u> - N/A□	(approx.)	of Dominants:	<u>8</u> in.	-	_	_in.		
Dominant Bank Vegeta								
Locust, black cherry	/, sycamore, m	norrow's hone	eysuckle, re	ed cedar, queei	n Anne	e's lace		
Aquatic Habitats (ex: su	ubmerged or emerge	d aquatic vegetati	on, overhanging	gbanks/roots, leaf pa	cks, large	e submerged wood,	riffles, deep po	ols):
cobble								
Aquatic Organisms Ob	served (list):							
none								
T&E Species Observed	(list):							
none	. ,							
Disturbances (ex: livest	ock access, manure	in waterbody was	te discharge pin	es):				
Livestock access				,-				
Tributary is: (check one)	⊠ Natural	□ Ar	tificial,man-n	nade 🗆 Manip	ulated			
Stream Quality ^a : (check one)	🗆 High		oderate	□ Low				

Waterbody ID: SAUB118

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:

Degraded intermittent stream in cattle pasture. Some bank failures due to livestock, weak sinuosity, weak grade control, a few bars and benches. Fed by WAUB107.





Waterbody SAUB118 facing west upstream



Waterbody SAUB118 facing east downstream



Waterbody SAUB118 facing north across

Survey Description	n								
Project Name:		Waterbody Nar	ne:		v	Vaterbody ID:			Date:
Atlantic Coast Pipeline		UNT to Elk R	un		s	SUAB004		C	091814
State:	County:	•	Company:		Crew	Member Initials:	: P	hotos:	
Virginia	Augusta		NRG		LE, S	SK	3	3	
Tract Number(s):	•		Nearest Mile	epost:		Associated W	etland I	D(s):	
07-001-A019			118.35			NA			
Survey Type: (check one)	⊠Centerline	e □Re-F	Route	□Access Road		□Other:			
Physical Attributes	S								
Stream Classification: (check one)	Ephemera	al ⊠Inter	mittent	□Perennial					
Waterbody Type:									
	River 🛛 Str	eam 🗆 Dito	h 🗆 Ca	anal 🛛 🗆 Other:	:				
онwм	OHWM Indicat								
Width: <u>3</u> ft.	(check all that apply	/)	⊠ Clear lir on bank	ne 🗆 Shelving	g	□Wrested vegetation		Scouring	□Water staining
Height:	⊠Bent, n	natted, or missin	g	ne 🛛 Litter ar	nd	□Abrupt plant		∃Soil cł	aracteristic change
ft. N/A□	vegetatio	n		debris		community ch	ange		
Width of Waterbody - T			Toe of Slope	Width of Waterbo	ody - V	Vater Edge to	Depth o	f Water	
Bank to Top of Bank:	to Toe	of Slope:		Water Edge:		1	(Approx.)		
<u>_7 ft</u> .	_	<u>2.5 ft</u> .			<u> </u>		N/A□	_0	<u>.08333</u> ft.
Sinuosity:	Water	velocity:		N/A□ Bank height			Bank sl	one	
(check one)	(Approx.)	-		Right:		I		Right:	
⊠Straight		<u>0.10_</u> fps			<u>3</u> ft.			•	45 degrees
□Meanderir	ng N/A□			Left:	<u>4_</u> ft.			Left	45_degrees
Qualitative Attribu	tes					1			
Water Appearance: (check one)	No water	Clear ⊡Turb	id ⊓Sh	leen □Sul	rface	□Algal]Other:		
(surface scu		mats			
Substrate:	Bedrock 🗆 Bo	ulder 🛛 Cobb	le 🛛 Grave	el 🛛 Sand 🛛	⊠ Silt/ (clay 🛛 Organic	□ Ot	her:	
% of Substrate:	%%	30 <u></u> %	<u>25</u> %	5%	<u>30</u> %	10 <u></u> %		%	
Width of Riparian Zone	: Vegetative	E Layers:							
-	(check all that		⊠ Trees:	2	⊠ Sapli	ings/Shrubs:	\boxtimes	Herbs	
<u>0 ft</u> - N/A⊠	(approx.)	of Dominants:	10_ _{in.}	2	2 <u>in</u> .				
Dominant Bank Vegeta	tion (list):								
Black walnut, corn, j	jewelweed, wir	ngstem, black	berry						
Aquatic Habitats (ex: su	bmerged or emerged	d aquatic vegetation	n, overhanging	banks/roots, leaf pac	ks, large	e submerged wood,	, riffles, d	eep pools	s):
Cobble, debris									
Aquatic Organisms Ob	served (list):								
na									
T&E Species Observed	(list):								
na									
Disturbances (ex: livesto	ock access, manure i	n waterbody, waste	e discharge pipe	es					
Between two corn fields									
Tributary is: (check one)	□ Natural	□ Art	ificial, man-m	ade 🛛 Manipi	ulated				
Stream Quality ^a : (check one)	□ High	⊠ Mo	oderate	□ Low					

Waterbody ID

SAUB004

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:

Disturbed by agriculture

Waterbody Sketch (Include north arrow, conterline, distance from centerline, dament in location, survey boundary, and IDs of associated features)



Waterbody SAUB004 facing west upstream



Waterbody SAUB004 facing east downstream



Waterbody SAUB004 facing south across

Survey Descri	ption									
Project Name:		Wate	rbody Name:			W	aterbody ID:		Dat	e:
Atlantic Coast F	Pipeline	UNT	to Elk Run			S	AUB117		8/1	7/2015
State:	County	y:	Compan	ıy:		Crew I	Member Initials	s: P	hotos:	
Virginia	Augu	sta	NRG			TP, S	A	(01-03	
Tract Number(s):			Nearest	Milepost:			Associated W	etland I	D(s):	
07-001-A016.A	R-AR1		124				fringe			
SurveyType: (checkone)		Centerline	□Re-Route	⊠Aco	cess Road	ł	□Other:			
Physical Attrib	outes									
Stream Classificat (check one)	tion:]Ephemeral	⊠Intermittent	□Pe	rennial					
Waterbody Type: (check one)	□River	⊠ Stream	Ditch	Canal	□ Other					
OHWM Width: <u>4.0</u> ft.	(chec	WM Indicator: ck all that apply)	⊠ Cle on bar		⊠Shelvir	ng	□Wrested vegetation		Scouring	□Water staining
Height: ft. N/A□		□Bent, matted vegetation	l,ormissing ⊡Wra		□Littera debris	nd	□Abrupt plar community ch		∃Soil char	acteristic change
Width of Waterbod			erbody - Toe of SI			ody - W	ater Edge to	Depth o (Approx.)	of Water:	
Bank to Top of Bar		to Toe of Slo 1.01		Water F	•	<u>3.0_</u> ft.		N/A 🗆	0.	<u>2_</u> ft.
Sinucsity		Water veloci	the	N/A □ Bank h	oiaht			Bank sl	one	
Sinuosity: (check one)		(Approx.)	ity.	Dalik li	Right:				Right:	
	ght		<u>0.5</u> fps		-	<u>5.0</u> ft.			•	<u>80</u> degrees
⊠Mear	ndering	N/A□			Left:	<u>2.0</u> ft.			Left: _7	<u>′0</u> degrees
Qualitative Att										
Water Appearance (check one)	n: □No wat	ter ⊠Clear	□Turbid	□Sheen on surface	⊡Su scu		□Algal [mats	∃Other:		
Substrate: (check all that apply) % of Substrate:	Bedro		⊠ Cobble ⊠ G			⊠ Silt/c 60 %	day ⊡Organio%		ther: %	
Width of Riparian	Zone:	Vegetative Laye (check all that apply)		rees:	Г	∃ Sanli	ngs/Shrubs:		Herbs	
<u>5</u> ft- N/A□		Av g. DBH of Doi (approx.)		<u>i</u> n.	-		_in.			
Dominant Bank Ve	getation (lis	st):								
Black walnut, qi	ueen Ann	e's lace, chico	ry, red clover, ti	mothy gra	ISS					
Aquatic Habitats (e	ex: submerge	d or emerged aqua	tic vegetation, overhar	ngingbanks/ro	ots, leaf pa	cks, large	e submerged wood	l, riffles, c	deep pools):	
none										
Aquatic Organism	s Observec	l (list):								
none										
T&E Species Obse	erved (list):									
none										
Disturbances (ex:	livestock acce	ess, manure in wate	rbody, waste discharq	e pipes):						
Livestock acces										
Tributary is: (check one)		Natural	□ Artificial, ma	an-made	🗆 Manip	ulated				
Stream Quality ^a : (check one)] High	⊠ Moderate		□ Low					

Waterbody ID: SAUB117





Waterbody SAUB117 facing west upstream



Waterbody SAUB117 facing east downstream



Waterbody SAUB117 facing south across

Survey Descriptio	n							
Project Name:		Waterbody Na			v	aterbody ID:		Date:
Atlantic Coast Pipeline	•	UNT to Elk F	lun		s	UAB003		091814
State:	County:		Company:		Crew I	Member Initials:	Photos	S:
Virginia	Augusta		NRG		LE, S	SК	3	
Tract Number(s):			118.65			Associated We	tland ID(s):	
07-001-A019						NA		
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:	:			
онwм	OHWM Indicat							
Width: _2 ft.	(check all that apply	/)	⊠ Clear lir on bank	ne 🗆 Shelving	g	□Wrested vegetation	Scouri	ng □Water staining
Height: 0.0166 ft.	⊠Bent, n vegetatio	natted, or missin n	g □Wrack li	ne □Litter ar debris	nd	□Abrupt plant community cha		characteristic change
Width of Waterbody - 1	op of Width o	of Waterbody -	Toe of Slope	Width of Waterbo	ody - W	/ater Edge to D	epth of Wat	er:
Bank to Top of Bank:		of Slope:	•	Water Edge:	-	- (/	Approx.)	
<u>_3 ft</u> .	_	<u>2.5</u> ft.			<u>0 f</u> t.			<u>0</u> ft.
Sinuosity:	Wator	velocity:		N/A⊠ Bank height			I/A⊠ Bank slope	
(check one)	(Approx.)			Right:		E	ank slope Rig	ht:
□Straight		<u>0</u> fps			<u>2</u> ft.			70 degrees
⊠Meanderi	ng N/A□			Left:	2 ft.		Le	eft: 70 degrees
Qualitative Attribu	ites							
Water Appearance:								
(check one)	No water ⊠C	Clear □Turb		neen ⊡Sui nisurface scu		□Algal □ mats	Other:	
	Bedrock 🗆 Bo	ulder 🗆 Cobb	ole 🗆 Grav	el 🗆 Sand 🛛	⊠ Silt/ o	clay 🗆 Organic	□ Other:	
(check all that apply) % of Substrate:	%%	_%	_%	%	<u>100</u> %	%	%	
Width of Riparian Zone	e: Vegetative	E Layers:						
0.4	(check all that		□ Trees		•	ngs/Shrubs:	⊠ Herbs	;
<u>0 ft</u> - N/A⊠	AV G. DBH (approx.)	of Dominants:	_in.	2	2 <u>_in</u> _			
Dominant Bank Vegeta	tion (list):							
Blackberry, autumn	olive, queen a	nns lace, chi	cory, tickse	ed, Canada thi	stle, f	escue, easter	n red ceda	r
Aquatic Habitats (ex: su	ubmerged or emerged	d aquatic vegetatio	n, overhanging	banks/roots, leaf pac	ks, large	e submerged wood,	riffles, deep po	ools):
mud								
Aquatic Organisms Ob	served (list):							
na								
T&E Species Observed	l (list):							
na								
Disturbances (ex: livest	ock access, manure i	n waterbody, waste	e discharge pip	es				
Grazing pasturing, livest	ock trampling							
Tributary is: (check one)	□ Natural	□ Ar	tificial, man-m	ade 🛛 🖾 Manipi	ulated			
Stream Quality ^a : (check one)	□ High		oderate	⊠ Low				

Waterbody ID

SAUB003

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:

Disturbed by pasture grazing and trampling

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





Waterbody SAUB003 facing west upstream



Waterbody SAUB003 facing east downstream



Waterbody SAUB003 facing north across

Survey Description	n							
Project Name:		Waterbody Nam	ne:			Waterbody ID:		Date:
Atlantic Coast Pipeline		UNT to Elk Ru	un		:	SUAB002		091814
State:	County:		Company:		Crew	Member Initials	: Phot	tos:
Virginia	Augusta		NRG		LE,	SK	3	
Tract Number(s):	•		Nearest Mile	epost:		Associated W	etland ID(s):
07-001-A023			119.3			NA		
Survey Type: (check one)	⊠Centerline	e □Re-R	oute	□Access Roa	d	□Other:		
Physical Attributes	S							
Stream Classification: (check one)	Ephemera	al ⊠Interr	nittent	□Perennial				
Waterbody Type:	•							
	River 🛛 Str	eam 🗆 Ditch	n 🗆 Ca	anal 🛛 🗆 Othe	r:			
онwм	OHWM Indica							
Width: _ <u>4</u> ft.	(check all that apply	/)	Clear lir on bank	ne 🗆 Shelvir	ng	⊠Wrested vegetation	□Sco	uring □Water staining
Height:	□Bent, n	natted, or missing	g	ne 🗆 Litter a	ind	⊠Abrupt plan	t ⊡S	oil characteristic change
ft. N/A□	vegetatio	n		debris		community ch	ange	-
Width of Waterbody - T			oe of Slope	Width of Waterk	oody - V	Water Edge to	Depth of W	/ater:
Bank to Top of Bank:	to Toe	of Slope:		Water Edge:			(Approx.)	
<u>_10 ft</u> .	_	<u>7</u> ft.			<u>3</u> ft.			<u>_0.1666</u> ft.
Sinuosity:	Motor	velocity:		N/A□ Bank height			N/A⊡ Bank slope	
(check one)	(Approx.)			Right:			•	ight:
⊠Straight		<u>0.50</u> fps			<u>3</u> ft.			45 degrees
□Meanderin	ng N/A□			Left:	4_ ft	t.		Left: 45_degrees
Qualitative Attribu								0
Water Appearance:								
(check one)	No water	Clear 🗆 Turbi			urface cum	□Algal [mats	□Other:	
	Bedrock 🗆 Bo	oulder 🛛 Cobbl	e 🗆 Grave	el 🛛 Sand	Silt/	clay 🛛 Organic	□ Other	r:
(check all that apply) % of Substrate:	% _%	_%	_%	%	<u>70</u> %	30 <u></u> %		_%
Width of Riparian Zone	: Vegetative	e Lavers:						
-	(check all that	apply)	□ Trees	:	🛛 Sap	lings/Shrubs:	🛛 Hei	rbs
<u>0 ft</u> - N/A⊠	Avg. DBH (approx.)	of Dominants:	_ <u>i</u> n.		2 <u>_in</u> .			
Dominant Bank Vegeta	tion (list):							
Jewelweed, blackbe	erry, polk, Bern	nuda grass, bu	urdock					
Aquatic Habitats (ex: su	bmerged or emerged	d aquatic vegetation	, overhanging	banks/roots, leaf pa	cks, larg	ge submerged wood	, riffles, deep	pools):
mud								
Aquatic Organisms Ob	served (list):							
na								
T&E Species Observed	(list):							
na								
Disturbances (ex: livesto	ock access, manure i	n waterbody, waste	discharge pipe	es				
Surrounding agriculture								
Tributary is: (check one)	□ Natural	□ Arti	ficial, man-m	ade 🛛 🖾 Manip	oulated		_	
Stream Quality ^a : (check one)	□ High	□ Moo	derate	⊠ Low				

Waterbody ID

SAUB002

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:

Disturbed by agriculture.

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





Waterbody SAUB002 facing west upstream



Waterbody SAUB002 facing east downstream



Waterbody SAUB002 facing north across

Survey Description	n								
Project Name:		Waterbody Na	me:		v	Vaterbody ID:		D	ate:
Atlantic Coast Pipeline		UNT to Elk F	Run		s	SUAB001		O	91814
State:	County:		Company:		Crew	Member Initials	: Pl	hotos:	
Virginia	Augusta		NRG		LE, S	SK	3	3	
Tract Number(s):			Nearest Mile	epost:		Associated W	etland II	D(s):	
07-001-A030			120.05			NA			
Survey Type: (check one)	Centerline	e □Re-I	Route	□Access Road		□Other:			
Physical Attributes	S								
Stream Classification: (check one)	Ephemera	al ⊠Inte	rmittent	□Perennial					
Waterbody Type:									
(check one)	River Str	ream 🗆 Dite	ch 🗆 Ca	anal 🗆 Other:					
OHWM Width:	OHWM Indica (check all that apply		🗆 Clear lir	ne 🗆 Shelvin	a	⊠Wrested		Scouring	□Water
<u>_2</u> ft.		,	on bank		9	vegetation		couning	staining
Height:		matted, or missir	ng		nd	□Abrupt plan	t C	∃Soil ch	aracteristic change
ft. N/A□	vegetatio	on		debris		community ch	ange		
Width of Waterbody - T			Toe of Slope	Width of Waterbo	ody - V	Vater Edge to	Depth of	f Water:	
Bank to Top of Bank:	to Toe	of Slope:		Water Edge:			(Approx.)		
<u>_9</u> ft.		<u>5</u> ft.		N/A□	<u> </u>		N/A□	_() <u>.0833 f</u> t.
Sinuosity:	Water	velocity:		Bank height			Bank slo	ope	
(check one)	(Approx.)			Right:				Right:	
		<u>0.10</u> fps	3	Left:	<u>3</u> ft.			Left:	45 degrees
	ng N/A□			Len.	<u>4_</u> ft.			Lent.	45 degrees
Qualitative Attribu	tes								
Water Appearance: (check one)	No water	Clear □Turt		leen ⊡Sui i surface scu		□Algal [mats	□Other:		
	Bedrock 🗆 Bo	oulder 🗆 Cobl	ole 🗆 Grave	el 🗆 Sand 🛛	⊠ Silt/ o	clay 🛛 Organic	□ Ot	her:	
(check all that apply) % of Substrate:	%%	_%	_%	%	<u>70</u> %	30_%		<u>%</u>	
Width of Riparian Zone			-			-			
	(check all that		□ Trees	: [∃ Sapli	ings/Shrubs:	\boxtimes	Herbs	
<u>0 ft</u> - N/A⊠	Avg. DBH (approx.)	of Dominants:	_in.	-	<u>in</u> .				
Dominant Bank Vegeta	,								
Queen ann's lace, f	escue, carex, o	chicory, wate	r pepper, ra	agweed					
Aquatic Habitats (ex: su	ubmerged or emerged	d aquatic vegetatic	on, overhanging	banks/roots, leaf pac	ks, large	e submerged wood,	, riffles, de	ep pools):
mud									
Aquatic Organisms Ob	served (list):								
na									
T&E Species Observed	(<i>list</i>):								
na									
Disturbances (ex: livesto	ock access, manure i	in waterbody, wast	e discharge pipe	es					
Pasture grazing, livestoc	:k								
Tributary is: (check one)	□ Natural	🗆 Ar	tificial, man-m	ade 🛛 🖾 Manipi	ulated				
Stream Quality ^a : (check one)	🗆 High		oderate	⊠ Low					

Waterbody ID

SAUB001

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:

Disturbed by pasture grazing and trampling

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





Waterbody SAUB001 facing south upstream



Waterbody SAUB001 facing north downstream



Waterbody SAUB001 facing west across

Survey Descriptio	n							
Project Name:		Waterbody				aterbody ID:		Date:
Atlantic Coast Pipeline		Jennings				aua413		7/6/2016
State:	County:		Company:		Crew I	Member Initials		
Virginia	Augusta		NRG/ERM	1	GB, J	IM	3 pho	tos
Tract Number(s):			Nearest Mile	epost:	•	Associated W	etland ID(s):	
07-001-A063			129.2			none		
Survey Type: (check one)	⊠Centerl	ine 🛛	Re-Route	□Access Road		□Other:		
Physical Attribute	s							
Stream Classification: (check one)	Ephem	eral 🛛	Intermittent	⊠Perennial				
Waterbody Type: (check one)	□River ⊠ \$	Stream	Ditch 🗆 Ca	anal 🗌 Other:				
OHWM Width: _ <u>50.0_f</u> t.	OHWM Indi (check all that a		⊠ Clear lir on bank	ne 🗆 Shelving	g	□Wrested vegetation	□Scourir	ng ⊡Water staining
Height: <u>3.5_f</u> t. N/A□	□ Bent vegeta		ssing ⊠Wrack li	ne □Litter ar debris	nd	□Abrupt plan community ch		characteristic change
Width of Waterbody - Bank to Top of Bank:		h of Waterbod	ly - Toe of Slope	Width of Waterbo Water Edge:	ody - W	ater Edge to	Depth of Wate (Approx.)	er:
<u>_60.0</u> ft.		<u>35.0</u> ft.		N/A 🗆 💁	<u>45.0_</u> ft.		N/A 🗆	<u>2.75</u> ft.
Sinuosity: (^{check one)} ⊠Straight □Meanderi	(Appro	_1.0	_fps	Left:	<u>10.0</u> ft <u>5.0</u> ft.	i.	Bank slope Righ Le	80 degrees
Qualitative Attribu	utes			•				
Water Appearance: (check one)	□No water	□Clear ⊠ ⁻	Turbid □Sh on	neen ⊡Sui n surface scu		□Algal I mats	Other:	
Substrate: [(check all that apply) % of Substrate:	□ Bedrock □ %		Cobble ⊠ Grave 25_% _ <u>25</u> _		⊠ Silt/ c <u>5 </u> %	clay □ Organic %		
Width of Riparian Zone	e: Vegetat (check all t	ive Layers:	Trace		7 Conlin	aga/Chruhai	⊠ Llarba	
_ <u>200_ft</u> - N/A□		BH of Dominan	[⊠] Trees nts: <u>8.0</u> in.		<u>1.0</u> in	ngs/Shrubs:	⊠ Herbs 	
Dominant Bank Vegeta	ation (list):							
White pine, black w Japanese stilt gras			ist, sycamore,	black cherry, v	ving st	tem, jewel we	eed, wild rye	e, garlic mustard,
Aquatic Habitats (ex: s	ubmerged or emer	ged aquatic vege	tation, overhanging	banks/roots, leaf pac	ks, large	submerged wood	, riffles, deep poo	bls):
Vegetated gravel b	ars, riffles, ov	/erhanging r	oots and bank	ks, coarse wood	dy deb	oris		
Aquatic Organisms Ob	oserved (list):							
Snails, crayfish, wa	ater striders, r	ninnows						
T&E Species Observed	d (list):							
none								
Disturbances (ex: livest	tock access, manu	re in waterbody, v	waste discharge pipe	es):				
Livestock access –	algal load hi	gh due to m	anure – no ma	acro invertebrat	es pre	esent		
Tributary is: (check one)	Natura	l 🗆] Artificial, man-m	ade 🗆 Manipu	ulated			
Stream Quality ^a : (check one)	□ High		Moderate	□ Low				

Waterbody ID:

saua413

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 survey corridor in both directions; planted white pines to the north; pasture to the south; all cobble and gravel are coated with algal film; numerous snails on every cobble eating algae.

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





Waterbody SAUA413 facing west upstream



Waterbody SAUA413 facing east downstream



Waterbody SAUA413 facing south across