Vaterbody Data Sheet				
Survey Description				
Project Name:	Waterbody Name:	hare the start of the		
SERP	unnamed pond	Waterbody ID:		Date:
State: County:		ONA60		8/5/14
DC Norsh	DDWest	Crew Member Initials:	Photo ID(s):	1
Fract Number(s):	Milepost Entry: Milepost E	xit: Associated We	tland ID(s);	
18-123 Gurvey Type:	35° 57' 11, 73(03' 77° 56' 411, 32397	WNAGO		
check one) Centerline	Re-Route Access Ro	ad 🛛 Other: 🧷	enial	
Physical Attributes				
tream Classification:	Intermittent Rerennial			
Vaterbody Type: theck one) Stream River	Ditch Pond Lake	Connecting swale <sup>a</sup>	Other:	
HWM NA OHWM India	cator:	•••••	hours d	
Width:	(phy) Clear line St on bank	elving Wrested vegetatio	n Scourin	g Water staining
Height:ftBent, m missing /idth of Waterbody - Top of Bank to	vegetation line de		ty change 🛛 🗖	Soil characteristic change
pp of Bank at Centerline: $\mathcal{N}\mathcal{A}$	Width of Waterbody - Water Edge to Water Edge at Centerline: $\mathcal{N}\mathcal{A}$	Depth of Wate	r at Centerline:	NA
nuosity: Wate	r velocity:	114	ft.	
(Appro:			Bank slope	
/U/T		<u> </u>	Right:	degrees
Meandering	fps L	eft:	Left	/
ualitative Attributes		<u> </u>		degrees
ater Appearance:				
eck one) No water Clea	- newself	urface Algal cum mats	Other:	
bstrate: Bedrock Grav	el Sand Silt/clay	Organic	Other:	
of Substrate:%	% 40_ <sub>%</sub> 60 <sub>%</sub>			
dth of Riparian Zone: Vegetative I	_ayers:7	%		%
ft. (check all that ap ft. Avg. DBH o (approx.)	f Dominants:	C Shrubs:	in.	Herbs
minant Bank Vegetation: Linbolu Smilax rotundiscellia	-dron teligi fera, Carya	glebra Armo	Charles gig	rantica
uatic Habitats (ex: submerged or emerged	ic vegetation, overhanging banks/roots, leaf packs, large	v submerged wood, riffles, deep poo	Is): Open man	ter with
General works over	time loge		0 00	
General Smart Cover uatic Organisms Observed:	time loge		, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	, <del>-</del>
asive and/or T&E Species Observed			<i>,</i>	, <b>-</b>
asive and/or T&E Species Observed:	NONE		,	
asive and/or T&E Species Observed:				
asive and/or T&E Species Observed:	NONE	ılated	,	

1

Waterbody ID: onag002 High Quality: Natural, natural bank vegetation around entire waterbody; 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 by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or bank 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: 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: located inside wnag007 breached dam could not access for gps mapped using aerial imagery Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point locations, survey boundary, and IDs of associated features) 18-127 18-128 18-122





Open water point onag002, facing south



ONAG002 facing east



ONAG002 facing north



ONAG002 facing west

DWQ #\_\_

Site #\_\_\_\_ (indicate on attached map)

VAH021

STREAM QUALITY ASSESSMENT V	WORKSHEET
Provide the following information for the stream reach under assessment:	
1. Applicant's name: Dominuon 2. Evaluator's name:	DAUXST
3. Date of evaluation: $3 - 13 - 14$ 4. Time of evaluation	
	R-PRMLICO
7. Approximate drainage area: 7100 acres 8. Stream order:	St CAMPERCO
9. Length of reach evaluated: 100 ft 10. County: N	AS+1
11. Site coordinates (if known): prefer in decimal degrees. 12. Subdivision nam	
Latitude (ex. 34.872312): - 35°56'17"N Longitude (ex77.556	
method location determined (circle): (GPS) Topo Sheet Owthe (A with DE (CIRC) of the	
13. Location of reach under evaluation (note nearby roads and landmarks and attach n	hap identifying stream(s) location):
14. Proposed channel work (if any): None	
15. Recent weather conditions: Henne roin storm price	C 3 Dunie
16. Site conditions at time of visit: Norma	J
17. Identify any special waterway classifications known: $\frac{DA}{LA}$ Section 10 $\frac{DA}{LA}$	idal Waters WA Essential Fisheries Habitat
100 I rout Waters DHOutstanding Resource Waters NA Nutrient Sensitive Waters	ers NA Water Supply Watershed VR (LIV)
18. Is there a pond or lake located upstream of the evaluation point? YES NO If ye	es, estimate the water surface area:
19. Does channel appear on USGS quad map? (YES) NO 20. Does channel app	ear on USDA Soil Survey? YES NO
21. Estimated watershed land use:% Residential% Commercial	% Industrial 20% Agricultural
K K Forested% Cleared / Logger	d% Other (
22. Bankfull width: 23. Bank height (from	to bed to top of bank):
<ul> <li>24. Channel slope down center of stream: Flat (0 to 2%)Gentle (2 to 4%)</li> <li>25. Channel sinuesityGentle (2 to 4%)</li> </ul>	Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends Krequent meander	Very sinuousBraided channel
<b>Instructions for completion of worksheet (located on page 2):</b> Begin by determ location, terrain, vegetation, stream classification, etc. Every characteristic must be s to each characteristic within the range shown for the ecoregion. Page 3 provid characteristics identified in the worksheet. Scores should reflect an overall assessm characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scomment section. Where there are obvious changes in the character of a stream under into a forest), the stream may be divided into smaller reaches that display more contining reach. The total score assigned to a stream reach must range between 0 and 100, whighest quality.	cored using the same ecoregion. Assign points les a brief description of how to review the ent of the stream reach under evaluation. If a scoring box and provide an explanation in the er review (e.g., the stream flows from a pasture
Total Score (from reverse): 51 Comments:	
Evaluator's Signature	Date_8-13-14
This channel evaluation form is intended to be used only as a guida to again have	
gathering the data required by the United States Army Corps of Engineers to quality. The total score resulting from the completion of this form is subject	make a pholimin over an end of the

quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change – version 06/03. To Comment, please call 919-876-8441 x 26.

SNALA021

# STREAM QUALITY ASSESSMENT WORKSHEET

#		CHARACTERISTICS	ECOREGION POINT RANGE				
			Coastal	Piedmont	Mountain	SCORE	
	1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	L	
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	2	
	3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	'1	
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	3	
CAL	5	(no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	2	
PHYSICAL	6	(no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	2	
PH	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	2	
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	Ø25	
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	3	
	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0 – 5	0-4	0-4	2	
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	NA	
YT	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	Z	
STABILITY	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	3	
STA	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	3	
	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	2	
	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	$\bigcirc$	
HABIIAI	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	2	
HA	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	D	
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	MR	
<b>,</b>	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points) Presence of amphibians	0-4	0-5	0-5	2	
<b>BIULUGY</b>	21	(no evidence = 0; common, numerous types = max points) Presence of fish	0-4	0-4	0-4	3	
	22	(no evidence = 0; common, numerous types = max points) Evidence of wildlife use	0-4	0-4	0-4	l	
	23	(no evidence = 0; abundant evidence = max points)	0-6	0-5	0 – 5	3	
		Total Points Possible	100	100	100		
		<b>TOTAL SCORE</b> (also enter on firs aracteristics are not assessed in coastal streams.	t page)			51	

SNAH021

#### NC DWQ Stream Identification Form Version 4.11

Date: 8-13-14	Project/Site: SERP	Latitude:35 36 17, 5417	<b>]</b> #
Evaluator: DDWEST	County: NASH	Longitude: 77°57'31.4	
Total Points: Stream is at least intermittent if $\geq$ 19 or perennial if $\geq$ 30*	Stream Determination (circle one) Ephemeral Intermittent (Perennial)	Other UNT to Saphony Creek	

A. Geomorphology (Subtotal =, 5)	Absent	Weak	Moderate	Strong
1 <sup>a</sup> Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool,	6			
ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	0	<u> </u>	2	3
6. Depositional bars or benches	0	Ð	2	3
7. Recent alluvial deposits	0		2	3
8. Headcuts	0	(1)	2	3
9. Grade control	0	0.5	$\left( 1 \right)$	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel		o = 0	Yes	1
<sup>a</sup> artificial ditches are not rated; see discussions in manual				
B. Hydrology (Subtotal = <u>7,5</u> )				
12. Presence of Baseflow	0	1	2	$\left[\begin{array}{c} \\ \end{array}\right]$
13. Iron oxidizing bacteria	0	1	2	
14. Leaf litter	1.5	1	0.5	3
15. Sediment on plants or debris	0	(0.5)		0
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	<u>I</u> I	$\overline{}$ = 0	Yes :	1.5
C. Biology (Subtotal = 13)				- 3
18. Fibrous roots in streambed	3	2		
19. Rooted upland plants in streambed		2	1	0
20. Macrobenthos (note diversity and abundance)		2		0
21. Aquatic Mollusks	$+$ $\overline{0}$	1		3
22. Fish	0	(0.5)	2	3
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	(1.5)
25. Algae	0	0.5	1	15
26. Wetland plants in streambed				PRESIDEN
*perennial streams may also be identified using other methods	See n 35 of manual	FACW = 0.75;	OBL = 1.5 )Other = 0	
Notes:	s. dee p. 55 of manual	l.		
Sketch	N.			>

snah021

EMERGENT WETLAND



Waterbody snah021 facing west upstream



Waterbody snah021 facing east downstream



## Waterbody snah021 facing north cross stream

USACE	AID#
ODITOL	$110\pi$

DWQ #\_

SNAHOZO Site #\_\_\_\_ (indicate on attached map)

STREAM QUALITY A	SSESSMENT WORKSHEET
Provide the following information for the stream reach und	
1. Applicant's name: Dom NION	-
3. Date of evaluation: B/13/14	<ul> <li>2. Evaluator's name: <u>PDPrest / PS13</u></li> <li>4. Time of evaluation: <u>16:53</u></li> </ul>
5. Name of stream: UNT to Saphony Creek	6. River basin: Tar-Pamlico
7. Approximate drainage area: 7100 acros	8. Stream order: 2nd
9. Length of reach evaluated: 10057	10. County:
11. Site coordinates (if known): prefer in decimal degrees.	12 Subdivision name (if any) MA
Latitude (ex. 34.872312): 35°55'07,456''	Longitude ( $m = 7755(1)$ , $77^{\circ}$ , $\zeta \zeta'$ , $77^{\circ}$ , $12/11$
method location determined (circle): /GPS/ Topo Sheat Out-	Aerial) Photo/GIS Other GIS Other landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): NoNE	
<ul> <li>14. Proposed channel work (if any): Now </li> <li>15. Recent weather conditions: Heavy fair fall</li> <li>16. Site conditions at time of visit: Not Raining</li> <li>17. Identify any special waterway classifications known:</li> </ul>	1 last 3 Days
16. Site conditions at time of visit: Not Raining	
j moort outfolds known.	Section IU Indel Woters D starstars
Outstanding Resource Waters	Nutrient Sensitive Waters Web
point of lake located upstream of the evaluation po	Dint? YES NOVIE ves estimate the water curfe
YES )NO	20. Does channel appear on USDA Soil Survey? YES (NO)
21. Estimated watershed land use:% Residential	% Commercial% Industrial % Agricultural
% Forested	% Cleared / Logged % Other (
Flat (0 to 2%)	$\bigtriangleup$ Gentle (2 to 4%) Moderate (4 to 10%) Stars (2 to 4%)
Occasional bends	Frequent meanderVery sinuous Devided 1
location, terrain, vegetation, stream classification, etc. Every et to each characteristic within the range shown for the ecoreg characteristics identified in the worksheet. Scores should refle characteristic cannot be evaluated due to site or weather condi comment section. Where there are obvious changes in the char- into a forest), the stream may be divided into smaller measured.	2): Begin by determining the most appropriate ecoregion based on haracteristic must be scored using the same ecoregion. Assign points gion. Page 3 provides a brief description of how to review the ect an overall assessment of the stream reach under evaluation. If a itions, enter 0 in the scoring box and provide an explanation in the acter of a stream under review (e.g., the stream flows from a pasture at display more continuity, and a separate form used to evaluate each between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 76 Comments	:
Evaluator's Signature	alia luit
This channel evaluation form is intended to be used only as	Date $\frac{B/13}{14}$ a guide to assist landowners and environmental professionals in
quality. The total score resulting from the completion of the	a guide to assist landowners and environmental professionals in orps of Engineers to make a preliminary assessment of stream his form is subject to USACE approval and does not imply a ange – version 06/03. To Comment, please call 919-876-8441 x 26.

# SNAHOZO

# STREAM QUALITY ASSESSMENT WORKSHEET

#		CHARACTERISTICS	ECOREGION POINT RANGE				
			Coastal	Piedmont	Mountain	SCORI	
	1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	Y	
-	2	(extensive alteration = 0; no alteration = max points)	0-6	0-5	0 - 5	5	
-	3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	5	
_	4	(extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	Y	
FHYSICAL	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	3	
	6	(no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	3.	
	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	Y	
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	6	
-	9	<b>Channel sinuosity</b> (extensive channelization = 0; natural meander = max points)	0 – 5	0-4	0-3	<u> </u>	
	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	Y	
-	11	(fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	NA	
ļ	12	(deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	3	
	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	<u></u>	
L	14	(no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	 Z	
	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0 – 5	0-4	0-5	Ý	
-	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	2	
	17	(little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	Y	
	18	(no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5		
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	NIA	
	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	3	
	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	3	
2	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	L.	
2	23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	Y	
		Total Points Possible	100	100	100	1	
		<b>TOTAL SCORE</b> (also enter on firs aracteristics are not assessed in coastal streams.	t page)	L		76	

Date: 8/13/14	Project/Site: 5	ERP	Latitude: 35	" <<'/> </th
Evaluator: DDWest	County: Nas	·L	Latitude: 35 Longitude: 7	7 88' 7
Total Points:Stream is at least intermittentif $\geq$ 19 or perennial if $\geq$ 30*	Stream Determi Ephemeral Inte	nation (circle on rmittent Perenn	a) Other UNT to	o Saphony C
A. Geomorphology (Subtotal = $2$ )	Absent	Weak	Mendoust	
1 <sup>a</sup> Continuity of channel bed and bank	0	1	Moderate	Strong
2. Sinuosity of channel along thalweg	0	1	2	(3)
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0		2	(3)
4. Particle size of stream substrate		1	2	3
5. Active/relict floodplain	0	1	(2)	3
6. Depositional bars or benches	0	1	2	(3)
7. Recent alluvial deposits	0	1	(2)	3
8. Headcuts	0	1	(2)	3
9. Grade control	0	1	2	3
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	0	0.5	Ø	1.5
<sup>a</sup> artificial ditches are not rated; see discussions in manual	No	₹0/	Yes =	: 3
B. Hydrology (Subtotal = // 5 )				
12. Presence of Baseflow	0			<del></del>
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	2	3
15. Sediment on plants or debris		1	0.5	0
16. Organic debris lines or piles	0	0.5	-0	1.5
17. Soil-based evidence of high water table?	0 No :	0.5	0	1.5
C. Biology (Subtotal = )		= 0	Yes =	3
18. Fibrous roots in streambed			·····	,
19. Rooted upland plants in streambed	3	(2)	1	0
20. Macrobenthos (note diversity and abundance)	3	2	1	0
21. Aquatic Mollusks	0)	1	(2)	3
22. Fish		1	2	3
23. Crayfish	0	0.5	Q	1.5
24. Amphibians	0	0.5		1.5
25. Algae	0	0.5	-Q	1.5
26. Wetland plants in streambed		0.5	(1)	1.5
*perennial streams may also be identified using other methods. S	200 n 25 of	FACW = 0.75; O	BL = 1.5 Other = 0	
Notes:	see p. 35 of manual.		······	
Sketch:	snah020	<u>ch</u>	~	



Waterbody snah020 facing east upstream



Waterbody snah020 facing west downstream



Waterbody snah020 facing upline cross stream

DWQ #\_

Site #\_\_\_\_\_ (indicate on attached map)

SNAH022

STREAM QUALITY ASSESSMENT WORKSHEET
Provide the following information for the stream reach under assessment:
1. Applicant's name: Dominion 2. Evaluator's name: DDWEST
3. Date of evaluation: $8 - 15 - 14$ 4. Time of evaluation: $1.70$
5. Name of stream: Unnamed to b to Sapony "6. River basin: TAR-PAMLICO
7. Approximate drainage area: Contended and the dual Approximate drainage area: S. Stream order:
9. Length of reach evaluated: $100 PF$ 10. County: $NA \leq H$
11. Site coordinates (if known): prefer in decimal degrees.       12. Subdivision name (if any):
Latitude (ex. 34.872312): 35*54 21. 282 " Longitude (ex77.556611): 77*59 * 16.664"
Method location determined (circle): GPS Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other
13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): Done
15. Recent weather conditions: Mainly dry - Few showers
16. Site conditions at time of visit: Normal 1
17. Identify any special waterway classifications known: NESection 10 NETidal Waters NEEssential Fisheries Habitat
<u>Matters</u> <u>Matt</u>
18. Is there a pond or lake located upstream of the evaluation point? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES NO 20. Does channel appear on USDA Soil Survey? YES NO
21. Estimated watershed land use:% Residential% Commercial% Industrial 50% Agricultural
22. Bankfull width: 8 Forested% Cleared / Logged% Other (
24. Channel slope down center of stream: Flat (0 to 2%)Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity: Straight Occasional bends Frequent meander Very sinuous Braided channel
Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the manual score of the same ecoregion.
to each characteristic within the range shown for the ecoregion Page 3 provides a brief description of how to review the
characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the
comment section. Where there are obvious changes in the character of a stream under review (e.g. the stream flows from a pasture
into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the
highest quality.
Total Score (from reverse): Comments: Man - made ditch ( promined)
on edge of An Frede
Evaluator's Signature Date
This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in

this channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in gathering the data required by the United States Army Corps of Engineers to make a preliminary assessment of stream quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change – version 06/03. To Comment, please call 919-876-8441 x 26.

1

SNAH023

#### STREAM QUALITY ASSESSMENT WORKSHEET

#	# CHARACTERISTICS		ECOREGION POINT RANGE		
		Coastal	Piedmont	Mountain	SCORE
1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	3
2	<b>Evidence of past human alteration</b> (extensive alteration = 0; no alteration = max points)	0-6	0-5	0 – 5	<b>B</b>
3	<b>Riparian zone</b> (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0 – 5	2
4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0 – 5	0-4	0-4	1
PHYSICAL 6 2	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	2
6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0 – 4	0-4	0-2	D
Ha 7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0-4	0-2	
8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	$\mathcal{O}$
9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	$\mathcal{O}$
10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	1
11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	NA
× 12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	}
13 13 14	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	2
14	<b>Root depth and density on banks</b> (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	1
15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	ſ
16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	1
17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	$\overline{\mathcal{V}}$
<b>V</b> 17 <b>P</b> 18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	2
19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	NA
20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	[
21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	2
22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	1
23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	3
	Total Points Possible	100	100	100	<u>v</u>
	TOTAL SCORE (also enter on fir		100		2

\* These characteristics are not assessed in coastal streams.

SNAHOZZ

#### NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

<b>NC DWQ Stream Identification For</b> Date: $8 \cdot (5 - 24)$	Project/Dites	-0.0				
	Project/Site:	Project/Site: $SERP$		°54'21.28		
Evaluator: DDWEST	County: N	County: NASH		Latitude: 35°54′21.28 Longitude: 77°59′16.(c		
Total Points:	Stroom Determ		(	13/ 16.0		
Stream is at least intermittent $32$ if $\geq 19$ or perennial if $\geq 30^*$	Ephemeral Inte	ination (circle one) ermittent (Perennial)	Other e.g. Quad Name	:		
A. Geomorphology (Subtotal = $10.5$ )						
A. Geomorphology (Subtotal = $10.5$ )	Absent	Weak	Moderate	Strong		
1 <sup>a</sup> Continuity of channel bed and bank 2. Sinuosity of channel along thalweg	0	1	2)	3		
3. In-channel structure: ex. riffle-pool, step-pool,	(0)	1	2	3		
ripple-pool sequence	0	1	······································			
4. Particle size of stream substrate		$\bigcirc$	2	3		
5. Active/relict floodplain	0		2	3		
6. Depositional bars or benches	0	$\bigcirc$	2	3		
7. Recent alluvial deposits	0	1	2	3		
8. Headcuts	0	(1)	2	3		
9. Grade control	0	(J)	2	3		
10. Natural valley	0	0.5	(1)	1.5		
11. Second or greater order channel	0	0.5)	1	1.5		
artificial ditches are not rated; see dispossions in manual	No	= 0	Yes			
B. Hydrology (Subtotal = )				<u></u>		
12. Presence of Baseflow						
	0	1	(2)			
3. Iron oxidizing bacteria	0	1	2	3		
4. Leaf litter	1.5	(1)		3		
5. Sediment on plants or debris	0	(0.5)	0.5	0		
6. Organic debris lines or piles	0		1 // 4	1.5		
7. Soil-based evidence of high water table?	No	0.5)	1.00	1.5		
C. Biology (Subtotal = $(2, 5)$		-0	Yes =	3)		
8. Fibrous roots in streambed	$\neg$					
9. Rooted upland plants in streambed	(3)	2	1	0		
0. Macrobenthos (note diversity and abundance)		2	1	0		
1. Aquatic Mollusks	0		2	3		
2. Fish		1	2	3		
3. Crayfish	0	0.5)	1	1.5		
4. Amphibians	0	0.5	(1)	1.5		
5. Algae	0	0.5	1	(1.5)		
6. Wetland plants in streambed	0	0.5	(1)	1.5		
perennial streams may also be identified using it		FACW = 0.75; OBL	= 1.5 Other = 0			
perennial streams may also be identified using other method otes: Man - Mage ditch m			0			
man-made ditck(pe	rennial) 5	n obje d	Achiel	0		
		20	, sig are is	*		
ketch:	+ /					
ર	Hel //					
9	S M					
<u> </u>	11					
\$\	//					
2 Al	/					
	:					
snah02	23					

41



Waterbody snah023 facing west upstream



Waterbody snah023 facing east downstream



## Waterbody snah023 facing north cross stream

DWQ #

Site #\_\_\_\_\_ (indicate on attached map)

SNAH024

STREAM QUALITY AS	SSESSMENT WORKSHEET
Provide the following information for the stream reach under	er assessment:
1. Applicant's name: Dominion	2. Evaluator's name: $DDWE \leq T$
3. Date of evaluation: $8 - (5 - 14)$	4. Time of evaluation:
5. Name of stream: <u>SADONY</u> Creek	6. River basin: TAR - PAMLICO
7. Approximate drainage area: > 100 acres	8. Stream order: 2 wd
9. Length of reach evaluated: 100 ff	10. County:
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
Latitude (ex. 34.872312): 35°54′15.140 ''	Longitude (ex77.556611): 77°,59'21,4721'
Method location determined (circle): GPS Topo Sheet Ortho (A 13. Location of reach under evaluation (note nearby roads and la	erial) Photo/GIS Other GIS Otherandmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): None	$\wedge$
15. Recent weather conditions: Mainly Dry -	tew showers
16. Site conditions at time of visit: Norma	
17. Identify any special waterway classifications known: NK	Section 10 NATidal Waters NAEssential Fisheries Habitat
NATrout Waters NAOutstanding Resource Waters NA	Nutrient Sensitive Waters (NAWater Supply Watershed NAT-IV)
	int? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES NO	20. Does channel appear on USDA Soil Survey? YES NO
21. Estimated watershed land use: % Residential	% Commercial% Industrial ZO% Agricultural
Solution States - Sta	% Cleared / Logged% Other ()
22. Bankfull width: 20	23. Bank height (from bed to top of bank): 25
24. Channel slope down center of stream:	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
	Frequent meander X Very sinuousBraided channel
to each characteristic within the range shown for the ecore characteristics identified in the worksheet. Scores should reflect characteristic cannot be evaluated due to site or weather cond comment section. Where there are obvious changes in the char into a forest), the stream may be divided into smaller reaches the	2): Begin by determining the most appropriate ecoregion based on haracteristic must be scored using the same ecoregion. Assign points gion. Page 3 provides a brief description of how to review the ect an overall assessment of the stream reach under evaluation. If a itions, enter 0 in the scoring box and provide an explanation in the acter of a stream under review (e.g., the stream flows from a pasture at display more continuity, and a separate form used to evaluate each between 0 and 100, with a score of 100 representing a stream of the score of 100 representing a stream of the strea
Evaluator's Signature This channel evaluation form is intended to be used only as gathering the data required by the United States Army C	Date 8-15-14/ a guide to assist landowners and environmental professionals in orps of Engineers to make a preliminary assessment of stream

gathering the data required by the United States Army Corps of Engineers to make a preliminary assessment of stream quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change – version 06/03. To Comment, please call 919-876-8441 x 26.

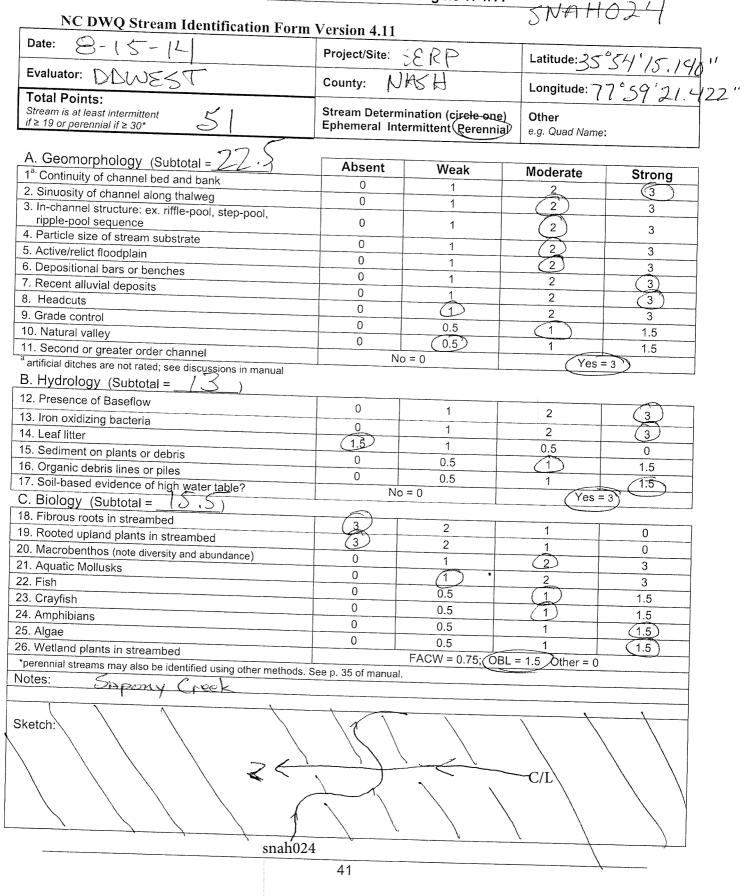
SNAHOOZU

#### STREAM QUALITY ASSESSMENT WORKSHEET

#	CHARACTERISTICS	ECOREGION POINT RANGE			
	SILINGIC TERRISTICS	Coastal	Piedmont	Mountain	SCORE
	(no flow or saturation = 0; strong flow = max points)	0-5	0-4	0 – 5	5
2	(extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	3
3	(no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	5
4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	.3
TP2 5	Crown dwatan diash sure	0-3	0-4	0-4	3
PHYSICAL	Drossen of a dia sout (1, 1, 1, 1)	0-4	0-4	0-2	Ľ
Hd 7	Entronchment / floodalein and	0-5	0-4	0-2	3
8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	4
9	Channel all and the	0-5	0-4	0-3	4
10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	. ?
11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	WA
	<b>Evidence of channel incision or widening</b> (deeply incised = 0; stable bed & banks = max points)	0 – 5	0-4	0-5	3
	D	0-5	0-5	0-5	3
ALITIBLI 13	<b>Root depth and density on banks</b> (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	2
<b>0</b> 15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	3
	Presence of wiffle weel/simple and the	0-3	0-5	0-6	2
	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	4
<b>TATE</b> 12 12 12 12 12		0-5	0-5	0-5	3
19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	NA
20	(no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	Bue
21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	2
21 21 22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	2
23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	5
	Total Points Possible	100	100	100	
	TOTAL SCORE (also enter on fir	st page)			71

\* These characteristics are not assessed in coastal streams.

#### NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11





Waterbody snah024 facing west upstream



Waterbody snah024 facing east downstream



## Waterbody snah024 facing north cross-stream

DWQ #\_

SNAH022

Site #\_\_\_\_\_ (indicate on attached map)

STREAM QUALITY A	SSESSMENT WORKSHEET
Provide the following information for the stream reach un	der assessment:
1. Applicant's name: Dominion	2. Evaluator's name: $DD$ $DEST$
3. Date of evaluation: $8 - 15 - 14$	4. Time of evaluation: 8:36
5. Name of stream: Manage of the to Spony (V	6. River basin: TAR-PAMLICO
7. Approximate drainage area: 7 100 6 peres	8. Stream order: 2
9. Length of reach evaluated: 100 ft	10. County: NASH
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
Latitude (ex. 34.872312): <u>35° 53′ 53.948</u> "	Longitude (ex77.556611): 77° 59 ' 34. 928"
Method location determined (circle): GPS Topo Sheet Ortho ( 13. Location of reach under evaluation (note nearby roads and	Aerial) Photo/GIS Other GIS Other
14. Proposed channel work (if any): North	D
15. Recent weather conditions: The Mainly of	ry - few showers
16. Site conditions at time of visit: Nor need	
17. Identify any special waterway classifications known: 1/2 Martin Martine	Section 10 <u>MA</u> Tidal Waters <u>MA</u> Essential Fisheries Habitat Nutrient Sensitive Waters <u>MA</u> Water Supply Watershed <u>M</u> (I-IV)
18. Is there a pond or lake located upstream of the evaluation p	oint? YES/NO) If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES NO	20. Does channel appear on USDA Soil Survey? YES NO
21. Estimated watershed land use: % Residential	% Commercial% Industrial ZO% Agricultural
6DCC % Forested	% Cleared / Logged% Other (
22. Bankfull width:	23. Bank height (from bed to top of bank):
<b>24.</b> Channel slope down center of stream: $\underline{X}$ Flat (0 to 2%)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends	Frequent meander X Very sinuousBraided channel
to each characteristic within the range shown for the ecor characteristics identified in the worksheet. Scores should ref characteristic cannot be evaluated due to site or weather con comment section. Where there are obvious changes in the cha into a forest), the stream may be divided into smaller reaches t	e 2): Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points egion. Page 3 provides a brief description of how to review the lect an overall assessment of the stream reach under evaluation. If a ditions, enter 0 in the scoring box and provide an explanation in the aracter of a stream under review (e.g., the stream flows from a pasture hat display more continuity, and a separate form used to evaluate each between 0 and 100, with a score of 100 representing a stream of the stream of the
Evaluator's Signature This channel evaluation form is intended to be used only a gathering the data required by the United States Army of	Date <u>8-15-14</u> s a guide to assist landowners and environmental professionals in Corps of Engineers to make a preliminary assessment of stream

gathering the data required by the United States Army Corps of Engineers to make a preliminary assessment of stream quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change – version 06/03. To Comment, please call 919-876-8441 x 26.

## SNAH022

## STREAM QUALITY ASSESSMENT WORKSHEET

4	# CHARACTERISTICS ECOREGION POINT RANG			<b>FRANGE</b>	
	CHARACTERISTICS	Coastal	Piedmont	Mountain	SCORE
	(no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	4
2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	4
:	(no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	4
4	(extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	3
CAL	(no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	3
PHVSICAL	(no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	m m
Hd	(deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	43
8	(no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	5
9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0 – 5	0-4	0-3	4
1	(extensive deposition= 0; little or no sediment = max points)	0 – 5	0-4	0-4	3
1	(fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	NA
≥	(deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	3
STABILITY T	(severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	3
	(no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	2
1:	(substantial impact =0; no evidence = max points)	0-5	0-4	0-5	3
	(no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	2
HABITAT	(little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	Hof
	(no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	3
19	(deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	NA
> 20	(no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	2
	(no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	2
	(no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	2
23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0 – 5	4
	Total Points Possible	100	100	100	
	TOTAL SCORE (also enter on fi	rst page)			6e

\* These characteristics are not assessed in coastal streams.

# NC Division of Water Quality – Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11

Date: 8-15-12	Project/Site:	Project/Site: $SERP$		Latitude: 35 <sup>°</sup> 53 <sup>'</sup> 53,9 Longitude: 77 <sup>°</sup> 39 <sup>'</sup> 34,9		
Evaluator: DDWEST	County: NASH		Longitude: 7	7 "KQ '211A		
Total Points: Stream is at least intermittent		nation (circle on	e) Other	131 37.9		
if $\geq$ 19 or perennial if $\geq$ 30*	Ephemeral Inte	rmittent Perenn	ial e.g. Quad Name:			
A. Geomorphology (Subtotal = $22.5$ )	Absent	10/1				
1 <sup>a.</sup> Continuity of channel bed and bank		Weak	Moderate	Strong		
2. Sinuosity of channel along thalweg	0	1	2	(3)		
3. In-channel structure: ex. riffle-pool_sten-pool	0	1	2	(3)		
rippie-pool sequence	0	1	2	3		
Particle size of stream substrate	0	1	2	3		
. Active/relict floodplain	0	1	2	(3)		
. Depositional bars or benches	0	1	(2)			
. Recent alluvial deposits	0	1	12			
B. Headcuts	0	(1)	2	3		
. Grade control	0	0.5		3		
0. Natural valley	0	(0.5)		1.5		
1. Second or greater order channel		= 0	1	1.5		
artificial ditches are not rated; see discussions in manual		- 0	Yes =	- 3		
3. Hydrology (Subtotal = $//.5$ )						
2. Presence of Baseflow	0	1	2	3		
3. Iron oxidizing bacteria	0	1	2			
4. Leaf litter	1.5	(1)	0.5	3		
5. Sediment on plants or debris	0	(0.5)	1	0		
6. Organic debris lines or piles	0	0.5		1.5		
7. Soil-based evidence of high water table?	No			1.5		
: Biology (Subtotal = / 3 )		<u> </u>	(Yes =	3)		
8. Fibrous roots in streambed	3	2	· · · · · · · · · · · · · · · · · · ·	······		
9. Rooted upland plants in streambed	3		1	0		
<ol> <li>Macrobenthos (note diversity and abundance)</li> </ol>		2		0		
1. Aquatic Mollusks	0	1	2	3		
2. Fish			2	3		
3. Crayfish	0		1	1.5		
4. Amphibians	0		1	1.5		
5. Algae	0	0.5		1.5		
6. Wetland plants in streambed	0	0.5	(1)	1.5		
perennial streams may also be identified using other metho		FACW = 0.75; (	OBL = 1.5 Other = 0			
otes:	ids. See p. 35 of manual.					
snah022				······		
SIIdII022			· · · · · · · · · · · · · · · · · · ·			
ketch:	C/L		1 Iron			
← N						

41



Waterbody snah022 facing south upstream



Waterbody snah022 facing north downstream



Waterbody snah022 facing east cross-stream

l	JS.	A(	СЕ	A	ID	#

DWQ #\_

Site #\_\_\_\_ (indicate on attached map)

SNAHOIS

STREAM QUALITY ASSESSMENT WORKSHEET
Provide the following information for the stream reach under assessment:
1. Applicant's name: DOWEST
3. Date of evaluation: $3-8-14$ 4. Time of evaluation: $9:32$
5. Name of stream: unaned to b to Saphony River basin: TAR-PAMLICO
7. Approximate drainage area: 7100 acres 8. Stream order: 15t
9. Length of reach evaluated: 100 ft 10. County: MAS H
11. Site coordinates (if known):       prefer in decimal degrees.         12. Subdivision name (if any):
Latitude (ex. 34.872312): $35^{\circ} 53' 43, 222''$ Longitude (ex77.556611): $7^{\circ} 59' 37, 799''$
Method location determined (circle): GPS Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other
13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any):
15. Recent weather conditions: Few Showers
16. Site conditions at time of visit: Norma
17. Identify any special waterway classifications known: <u>MA</u> Section 10 <u>MA</u> Tidal Waters <u>MA</u> Ssential Fisheries Habitat
M Arout Waters $M$ Watershed $M$ (I-IV)
<b>18.</b> Is there a pond or lake located upstream of the evaluation point? YES NO f yes, estimate the water surface area:
19. Does channel appear on USGS quad map?       YES NO       20. Does channel appear on USDA Soil Survey?       YES NO
21. Estimated watershed land use:% Residential% Commercial% Industrial 20% Agricultural
Solution States
22. Bankfull width: 23. Bank height (from bed to top of bank):
24. Channel slope down center of stream: Krist (0 to 2%) Gentle (2 to 4%) Moderate (4 to 10%) Steep (>10%)
25. Channel sinuosity:Straight 2 Occasional bends Frequent meanderVery sinuousBraided channel
Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality.
1 ACA
Evaluator's Signature Ade Angen Date 8-8-14
This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in gathering the data required by the United States terms Grander 65

gathering the data required by the United States Army Corps of Engineers to make a preliminary assessment of stream quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change – version 06/03. To Comment, please call 919-876-8441 x 26.

SNAH018

## STREAM QUALITY ASSESSMENT WORKSHEET

#		CHARACTERISTICS	ECOREGION POINT RANGE			
	-		Coastal	Piedmont	Mountain	SCORE
	1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0 – 5	0-4	0-5	3
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	2
	3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0 – 5	L
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	3
CAL	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	1
PHYSICAL	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	3
FH	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	3
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	L.
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	3
	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	3
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	NA
ΓX	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	2
MIL	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	82
<b>STABILLIY</b>	14	<b>Root depth and density on banks</b> (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	- <u>-</u>
<u></u>	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	3
-	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	<u> </u>
IALIAA	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	2
ITAL	18	(no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	L
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	WA
H -	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	<u> </u>
	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	2
	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	D
	23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	.3
		Total Points Possible	100	100	100	<u> </u>
		TOTAL SCORE (also enter on firs	st page)	I		RL

\* These characteristics are not assessed in coastal streams.

SNAHO18

#### NC DWQ Stream Identification Form Version 4.11

Date: 8-8-14	Project/Site:	ERP	Latitude: 35	53' 43,222	
Evaluator: DUNEST	County: M	ASH	Longitude: 77°59' 37. 799		
Total Points:Stream is at least intermittentif $\geq$ 19 or perennial if $\geq$ 30*	Stream Determi Ephemeral Inte	ination (circl <del>e one)</del> ermittent <b>Perennial</b>	<b>Other</b> UNT to e.g. Quad Name	o Saphony Creek :	
11	<u></u>		<b>1</b>		
A. Geomorphology (Subtotal = $1 (.5)$ )	Absent	Weak	Moderate	Strong	
1 <sup>a</sup> Continuity of channel bed and bank	0	1	- CD	3	
2. Sinuosity of channel along thalweg	0	1	2	3	
<ol> <li>In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence</li> </ol>	0	1	2	3	
4. Particle size of stream substrate	0	1	$\langle 2 \rangle$	3	
5. Active/relict floodplain	0	1	(2)	3	
6. Depositional bars or benches	0	1	(2)	3	
7. Recent alluvial deposits	0	1	2	3	
8. Headcuts	0	1	(2)	3	
9. Grade control	0	0.5	(1)	1.5	
10. Natural valley	0	( 0.5	1	1.5	
11. Second or greater order channel		o = 0	Yes	= 3	
<sup>a</sup> artificial ditches are not rated; see discussions in manual					
B. Hydrology (Subtotal = <u>10</u> )			~~~		
12. Presence of Baseflow	0	1	(2)	3	
13. Iron oxidizing bacteria	0	1	$\overline{2}$	3	
14. Leaf litter	1.5	1	(0.5)	0	
15. Sediment on plants or debris	0	0.5	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	1.5	
16. Organic debris lines or piles	0	0.5		(1.5)	
17. Soil-based evidence of high water table?		o = 0	Yes	= 3	
C. Biology (Subtotal = $10.75$ )					
18. Fibrous roots in streambed	3	2	1	0	
19. Rooted upland plants in streambed	3	2	1	0	
20. Macrobenthos (note diversity and abundance)	0		2	3	
21. Aquatic Mollusks	0	<del>D</del>	- Co	3	
22. Fish	$\overline{\mathbf{O}}$	0.5		1.5	
23. Crayfish	0	(AS H)	$\overline{(1)}$	1.5	
24. Amphibians	0	0.5	(1)	1.5	
25. Algae	0	0.5	71	1.5	
26. Wetland plants in streambed		FACW = 0.75; OBI	= 1.5 Other = 1		
*perennial streams may also be identified using other methods	See p 35 of manua				
Notes:					
1	s				
Sketch:		snah018			
		/ /			

<z <



Waterbody snah018 facing south upstream



Waterbody snah018 facing north downstream



Waterbody snah018 facing west cross stream

DWO #

Site #

(indicate on attached map)

125 STREAM QUALITY ASSESSMENT WORKSHEET Provide the following information for the stream reach under assessment: 1. Applicant's name: menion 2. Evaluator's name: 3. Date of evaluation: 4. Time of evaluation ophoni 5. Name of stream / man 100 6. River basin: 7. Approximate drainage area: 8. Stream order 9. Length of reach evaluated: 10. County: 11. Site coordinates (if known): prefer in decimal degrees. 12. Subdivision name (if any): Longitude (ex. -77.556611); Method location determined (circle): (GPS) Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other 13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location): NOCH 14. Proposed channel work (if any) 15. Recent weather conditions: showers 16. Site conditions at time of visit: JOLIN Mesection 10 NA idal Waters WAEssential Fisheries Habitat 17. Identify any special waterway classifications known: rout Waters PNutrient Sensitive Waters MWWater Supply Watershell (I-IV) 18. Is there a pond or lake located upstream of the evaluation point? YES  $(NO^2)$  f yes, estimate the water surface area: 19. Does channel appear on USGS quad map? YES (NO 20. Does channel appear on USDA Soil Survey? YES (NO 21. Estimated watershed land use: % Residential % Commercial 10% Agricultural % Industrial % Forested \_\_\_\_% Cleared / Logged \_\_\_\_% Other ( 22. Bankfull width: 23. Bank height (from bed to top of bank):\_\_\_\_ 24. Channel slope down center of stream: Flat (0 to 2%) \_Gentle (2 to 4%) \_\_\_\_Moderate (4 to 10%) Steep (>10%) **25.** Channel sinuosity: \_Straight \_\_\_Occasional bends \_\_ Frequent meander \_\_\_\_Very sinuous Braided channel Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality. Total Score (from reverse): Comments: Evaluator's Signature ( Date This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in

This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in gathering the data required by the United States Army Corps of Engineers to make a preliminary assessment of stream quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change – version 06/03. To Comment, please call 919-876-8441 x 26.

SNAHOLY

#	CHARACTERISTICS	ECOREGION POINT RANGE			
		Coastal	Piedmont	Mountain	SCORE
1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	l
2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	3
3	<b>Riparian zone</b> (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	33
4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	2
5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	(
5 6 7	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	B
7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	2
8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	3
9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	2
10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	2
11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0 – 5	WA
12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	25
13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	1
14	<b>Root depth and density on banks</b> (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	1
15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	3
16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	1
17 18	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	2
18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0 – 5	0-5	0-5	4
19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	MA
20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	D
21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	l
22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	D
23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	2
	Total Points Possible	100	100	100	-01

SNAHOIG

#### NC DWQ Stream Identification Form Version 4.11

He birg Stream Identification Form	· · · · · · · · · · · · · · · · · · ·	a lana	T	
Date: 🛞 - 🔗 -   -	Project/Site: SERP		Latitude: 35°53' 39, 178' Longitude: 77°59' 40, 401	
Evaluator: DOWEST	County: NTASH		Longitude: 77°59'40-401	
Total Points: Stream is at least intermittent $27.25$ if $\geq$ 19 or perennial if $\geq$ 30*	Stream Determination (circle one) Ephemeral Intermittent Perennial		<b>Other</b> UNT to Saphony Creek e.g. Quad Name:	
17 5				
A. Geomorphology (Subtotal = <u><u></u></u>	Absent	Weak	Moderate	Strong
1 <sup>a.</sup> Continuity of channel bed and bank	0	<u> </u>	2	3
2. Sinuosity of channel along thalweg	0		2	3
<ol> <li>In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence</li> </ol>	0		2	3
4. Particle size of stream substrate	0	71)	2	3
5. Active/relict floodplain	0	1	~2)	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	$\overline{\langle 1 \rangle}$	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel		o = 0	Yes	
<sup>a</sup> artificial ditches are not rated; see discussions in manual				•
B. Hydrology (Subtotal =)				
12. Presence of Baseflow	0	$\left( 1 \right)$	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	0	0.5	71	1.5
16. Organic debris lines or piles	0	0.5	- 7	1.5
17. Soil-based evidence of high water table?		o = 0	Nes	
C. Biology (Subtotal = $6.15$ )				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)		1	2	3
21. Aquatic Mollusks		1	2	3
22. Fish		0.5	1	1.5
23. Crayfish		(0.5)	1	1.5
24. Amphibians	0	(0.5)	1	1.5
	+		1	1.5
25. Algae		0.5 FACW = 0.75 OB		
26. Wetland plants in streambed		<u> </u>	L = 1.5 Other =	0
*perennial streams may also be identified using other methods	s. See p. 35 of manu	al.		
Notes:		<u> </u>		
Sketch:		snaf	019	X

snah019



Waterbody snah019 facing west upstream



Waterbody snah019 facing east downstream

snah019



Waterbody snah019 facing north cross stream

.

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STREAM QUALITY A	SSESSMENT WORKSHEET
Provide the following information for the stream reach und	er assessment:
1. Applicant's name: <u>Dominion</u>	2. Evaluator's name: ESI (L Roper)
3. Date of evaluation: 9414	4. Time of evaluation: 1000
5. Name of stream: UNT to Tar River	6. River basin: Tar - Parcilico
7. Approximate drainage area: <b>2000.</b>	8. Stream order:
9. Length of reach evaluated: 50 ft	10. County: NASH
11. Site coordinates (if known): prefer in decimal degrees.	
Latitude (ex. 34.872312): 35, 86935	_ Longitude (ex77.556611): -77.99853
Method location determined (circle): Dev Topo Sheet Ortho ( 13. Location of reach under evaluation (note nearby roads and	landmarks and attach map identifying stream(s) location):
south of Bend of the Rive	r Kd near old Bailey Hwy
14. Proposed channel work (if any): TBD	
15. Recent weather conditions: main within	<u>cyhr</u>
16. Site conditions at time of visit: drain nege. bet	
	Section 10 UTidal WatersEssential Fisheries Habitat
	Nutrient Sensitive Waters Water Supply Watershed (l-IV)
	point? <b>(ES)</b> NO If yes, estimate the water surface area: <b>1 a.C</b>
19. Does channel appear on USGS quad map? (YES) NO	20. Does channel appear on USDA Soil Survey? (YES) NO
	<u>%</u> Commercial <u>%</u> Industrial <u>40</u> % Agricultural
* Troop King a	23. Bank height (from bed to top of bank):       2
24. Channel slope down center of stream:Flat (0 to 2%)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends	Frequent meander Very sinuous Braided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the ecc characteristics identified in the worksheet. Scores should re characteristic cannot be evaluated due to site or weather co comment section. Where there are obvious changes in the c into a forest), the stream may be divided into smaller reaches	ge 2): Begin by determining the most appropriate ecoregion based on o characteristic must be scored using the same ecoregion. Assign points pregion. Page 3 provides a brief description of how to review the effect an overall assessment of the stream reach under evaluation. If a anditions, enter 0 in the scoring box and provide an explanation in the haracter of a stream under review (e.g., the stream flows from a pasture is that display more continuity, and a separate form used to evaluate each be between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 66 Comm	ents:
This channel evaluation form is intended to be used of gathering the data required by the United States Arm quality. The total score resulting from the completion	Date 9444 y as a guide to assist landowners and environmental professionals in y Corps of Engineers to make a preliminary assessment of stream of this form is subject to USACE approval and does not imply a to change – version 06 03. To Comment, please call 919-876-8441 x 26.

が打ち	#2	CHARACTERISTICS		ION, ROINI Piedmont		SCORE
	1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	5
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	3
	3.	(no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	4
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	3
NIN.	5	(no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	3
PHYSIC	6	(no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	3
Ha	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	4
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	4
	*9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	.4
	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	2
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	/
Y	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	3
ПЛ	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	4
STABILITY	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	2
S.	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	3
	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	2
ITAT	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	4
HAB	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	5
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	
	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	0
BOLOGY	21	Presence of amphibians (no evidence = 0; common, numerous types = max points).	0-4	0-4	0-4	3
101	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	2 = 0 <del>-</del> 4	0-4	0
Harris	23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	, , 0-5	0-5	5
		Total Points Possible		100	100	
		TOTAL SCORE (also enter on	first page)			حاحا

NC DWQ Stream Identification Form	Version 4.11	SNAT	004	
ate: 9 414	Project/Site: ACP		Latitude: 35	,86935
valuator: ESI (LRODER)	County: Nash		Longitude: -	17,99853
valuator: $EST$ (LRoper) otal Points: tream is at least intermittent $\geq 19$ or perennial if $\geq 30^*$	Stream Determin Ephemeral Intern		Other Winste e.g. Quad Name:	ead Crussroads NC
		Weak	Moderate	Strong
. Geomorphology (Subtotal = 12)	Absent		2	
<sup>a.</sup> Continuity of channel bed and bank		1	- Ó	3
. Sinuosity of channel along thalweg	0	<u> </u>		
. In-channel structure: ex. riffle-pool, step-pool,	0	1	Ø	3
ripple-pool sequence	0	1	Ø	3
5. Active/relict floodplain	0		2	3
6. Depositional bars or benches	0	1		3
7. Recent alluvial deposits	0	1	0	3
		1	2	3
8. Headcuts	- 0	6.5		1.5
9. Grade control			1	1.5
10. Natural valley		o=0	Yes	3 = 3
11. Second or greater order channel <sup>a</sup> artificial ditches are not rated; see discussions in manual				
1) R				
D. Hydrology (Oublotal	0	1	2	(3)
12. Presence of Baseflow			2	3
13. Iron oxidizing bacteria		1	0.5	0
14. Leaf litter	1.5	0.5	 	1.5
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	1 0.5		s = 3)
17. Soil-based evidence of high water table?	I	10-0		No
C. Biology (Subtotal =)			1	0
18. Fibrous roots in streambed	<u> </u>	2		0
19. Rooted upland plants in streambed	3	2	1	3
20. Macrobenthos (note diversity and abundance)	07	1	2	3
21. Aquatic Mollusks	0	1	2	1.5
22. Fish	<u>()</u>	0.5	1	1.5
23. Crayfish	(0)	0.5	1	
24. Amphibians	0	0.5	63	1.5
25. Algae	(Ö)	0.5		1.5
26 Wetland plants in streambed		and the second s	OBL = 1.5 Othe	<u>r</u> ,≓≀0
*perennial streams may also be identified using other me	ethods. See p. 35 of ma	inual.		
Notes: rain within 24	hrs.			
	and the second s	AND STRATISTICS		
Sketch:	alar and a second	- Hard Barton Contraction		AN
	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	internet and a set of the set of the	~~·· 6	
1 7	1 Det	whap o	04#_W	1
	T-SV			
		happy		
k study cogr	idor	inapooy		

Top of Bank width: 3.5 ft.



Waterbody snap004 facing northwest upstream.



Waterbody snap004 facing southeast downstream.



Waterbody snap004 facing west across bank.

USACE AID# DWQ #	Site ≓ (indicate on attached map)
STREAM QUALITY A	snap 003 SSESSMENT WORKSHEET
Provide the following information for the stream reach und	
I. Applicant's name: Domint on	2. Evaluator's name: ESI (LRoper)
3. Date of evaluation: 9/4/14	4. Time of evaluation: 10:15
5. Name of stream: UNT to Tar KIVEr	6. River basin: Tar - Pamlico
7. Approximate drainage area: 50 AL	8. Stream order: O
9. Length of reach evaluated: 50 ft	10. County: NASM
11. Site coordinates (if known): prefer in decimal degrees.	
1.atitude (ex. 34.872312): <u>35, 96648</u>	Longitude (ex77.556611): -78,00052
Method location determined (circle): <b>CPS</b> Topo Sheet Ortho ( <b>13.</b> Location of reach under evaluation (note nearby roads and	
south of Bend of the River	Rod near DId Bailey Hwy
14. Proposed channel work (if any):	<u> </u>
15. Recent weather conditions: vain within	2-4 nrs.
16. Site conditions at time of visit: longed - clear	
10	Section 10Tidal WatersEssential Fisheries Habitat
	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation p	point? YES 😡 If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES NO	20. Does channel appear on USDA Soil Survey? YES NO
21. Estimated watershed land use:% Residential	% Commercial% IndustrialO% Agricultural
20% Forested	<b>70</b> % Cleared / Logged% Other ()
* (Top of Bank) 22. Bankfull width: 3	23. Bank height (from bed to top of bank): 3
24. Channel slope down center of stream:Flat (0 to 2%)	<u>Gentle (2 to 4%)</u> Moderate (4 to 10%) <u>Steep (&gt;10%)</u>
25. Channel sinuosity:StraightOccasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the ecc characteristics identified in the worksheet. Scores should re characteristic cannot be evaluated due to site or weather co comment section. Where there are obvious changes in the c into a forest), the stream may be divided into smaller reaches	ge 2): Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points pregion. Page 3 provides a brief description of how to review the effect an overall assessment of the stream reach under evaluation. If a inditions, enter 0 in the scoring box and provide an explanation in the haracter of a stream under review (e.g., the stream flows from a pasture is that display more continuity, and a separate form used to evaluate each ge between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 45 Comm	ents:
gathering the data required by the United States Army quality. The total score resulting from the completion	Date <u>914114</u> y as a guide to assist landowners and environmental professionals in y Corps of Engineers to make a preliminary assessment of stream of this form is subject to USACE approval and does not imply a to change – version 06 03. To Comment. please call 919-876-8441 x 26.

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	÷ Ĥ	CHARACTERISTICS		ION ROINI		CORE
	1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	5
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	2
	3	(no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0 5	
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0, no discharges = max points)	0-5	0-4	0 – 4	3
No.	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	2
PHYSIC	6	(no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	2
Hď	∛7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	3
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0 – 6	0-4	0-2	4
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	3
	10	Sediment input (extensive deposition= 0; little or no sediment = max points) Size & diversity of channel bed substrate	0-5	0-4	U-4	3
	11	(fine, homogenous = 0; large, diverse sizes = max points) Evidence of channel incision or widening	NA*	. 0-4	0-5	
LV.	12	(deeply incised = 0; stable bed & banks = max points) Presence of major bank failures	0-5	0-4	0-5	3
STABILITY	13	(severe erosion = 0; no erosion, stable banks = max points) Root depth and density on banks	0-5	0-5	0-5	
IVIC	14	(no visible roots = 0; dense roots throughout = max points) Impact by agriculture, livestock, or timber production	0-3	0-4	0-5	
	15	(substantial impact =0; no evidence = max points) Presence of riffle-pool/ripple-pool complexes	0-5	0-4	0-5	<u>D</u>
	16	(no riffles/ripples or pools = 0; well-developed = max points) Habitat complexity	0-3	0-5	0-6	2
BITAU	17	(little or no habitat = 0; frequent, varied habitats = max points) Canopy coverage over streambed		· · · · ·	0-6	
HAB		(no shading vegetation = 0; continuous canopy = max points) Substrate embeddedness	0-5	0-5	0-5	2
	19	(deeply embedded = 0; loose structure = max) Presence of stream invertebrates (see page 4)	NA*	0-4	0-4	
N.	20	(no evidence = 0; common, numerous types = max points) Presence of amphibians	0-4	0-5	0-5	0
D D D D D D D D D D D D D D D D D D D	21	(no evidence = 0; common, numerous types = max points).	CN 1. 199	0-4	0-4	3
010	22	(no evidence = 0; common, numerous types = max points) Evidence of wildlife use	0-4		0-4	0
6 (N 1994)	23	(no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	
3 - Sett		Total Points Possible	<u> </u>	100	100	
100		TOTAL SCORE (also enter or	first page)			193

NC DWQ Stream Identification Form	Project/Site:	ACP	SNAP Latitude: 35	
			· · · · · · · · · · · · · · · · · · ·	19 000 50
valuator: EST (LROPEN)	County: Nadan			10.0036
Total Points: Stream is at least intermittent f≥ 19 or perennial if ≥ 30*	Stream Determi Ephemeral Inte	nation (circle one) rmittent Perennial	Other e.g. Quad Name:	18.00057. Bailey
<b>N</b>	Absent	Weak	Moderate	Strong
A. Geomorphology (Subtotal =) <sup>a.</sup> Continuity of channel bed and bank	0	(1)	2	3
2. Sinuosity of channel along thalweg		- Y	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool,		1	0	3
ripple-pool sequence	0			
4. Particle size of stream substrate	0	Q	2	3
5. Active/relict floodplain	0	$\square$	2	3
6. Depositional bars or benches	0	1	@	3
7. Recent alluvial deposits	0	0	2	3
8. Headcuts	(_)		2	3
9. Grade control	0	(0.5)	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	<u> </u>	No = 0 )	Ye	s = 3
<sup>a</sup> artificial ditches are not rated; see discussions in manual				
B. Hydrology (Subtotal = 8)				
12. Presence of Baseflow	0	1	2	0
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	Q.5)	1	1.5
17. Soil-based evidence of high water table?		No = 0	Y(	es = 3
C. Biology (Subtotal = 7)				0
18. Fibrous roots in streambed	<u> </u>	2	1	0
19. Rooted upland plants in streambed	0	2	1	
20. Macrobenthos (note diversity and abundance)		1	2	3
21. Aquatic Mollusks		0.5		1.5
22. Fish		0.5	1	1.5
23. Crayfish		0.5	D	1.5
24. Amphibians	(0)	0.5	1 1	1.5
25. Algae			; OBL = 1.5 (Ôthe	
26. Wetland plants in streambed	25 of m			
*perennial streams may also be identified using other m	eulous, dee p. 30 01 ii			
Notes: rain with 24 hrs	·	2		
	snapic	/snop003/	· · · · · · · · · · ·	
Sketch:	- A			
	1	· / /		
	ヘス	1 snop 001		
		X. Por.		
N.V.	whappeds C	115000		
	- 1 1	¥		
	rvidor			



Waterbody snap003 facing north upstream.



Waterbody snap003 facing south downstream.



Waterbody snap003 facing west across bank.

USACE AID#	$DWQ \neq$ Site $\neq$ (indicate on attached map)
	snap 002
STREAM QUA	LITY ASSESSMENT WORKSHEET
Provide the following information for the stream	reach under assessment:
1. Applicant's name: Dominion	2. Evaluator's name: ESS LR Turnbull)
3. Date of evaluation: 9/3/14	4. Time of evaluation: 1:50 PM
5. Name of stream: UNT to Tar R	iver 6. River basin: Tar - Pamlico
7. Approximate drainage area: 50 a.	8. Stream order: D
9. Length of reach evaluated: SOP+.	10. County: Nash
11. Site coordinates (if known): prefer in decimal	
Latitude (ex. 34.872312): <u>35,86607</u>	Longitude (ex77.556611): -78.00074
	eet Ortho (Aerial) Photo/GIS Other GIS Other
	y roads and landmarks and attach map identifying stream(s) location):
South of Bend of the Riv	ler KC near DIC Barky HWY
14. Proposed channel work (if any):	
15. Recent weather conditions: Warm , 50	attered storms in surrounding area
16. Site conditions at time of visit: drasmage	s within recently clearcut area
17. Identify any special waterway classifications k	nown:Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Wa	atersNutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the	evaluation point? YES 😡 If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? Y	ES NO 20. Does channel appear on USDA Soil Survey? YES NO
21. Estimated watershed land use:% Resid	dential% Commercial% Industrial% Agricultural
	sted 70% Cleared / Logged% Other ()
* (Top of Bank) 22. Bankfull width: 3ft	23. Bank height (from bed to top of bank):
24. Channel slope down center of stream:Fla	t (0 to 2%)Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasio	onal bends <u>Frequent meander</u> Very sinuous Braided channel
location, terrain, vegetation, stream classification, to each characteristic within the range shown characteristics identified in the worksheet. Scor characteristic cannot be evaluated due to site or comment section. Where there are obvious chan into a forest), the stream may be divided into sma	ated on page 2): Begin by determining the most appropriate ecoregion based on , etc. Every characteristic must be scored using the same ecoregion. Assign points for the ecoregion. Page 3 provides a brief description of how to review the es should reflect an overall assessment of the stream reach under evaluation. If a weather conditions, enter 0 in the scoring box and provide an explanation in the ges in the character of a stream under review (e.g., the stream flows from a pasture aller reaches that display more continuity, and a separate form used to evaluate each th must range between 0 and 100, with a score of 100 representing a stream of the

<u>48</u> Total Score (from reverse):\_

Comments:

Evaluator's Signature\_

Koler T. Ruhle

9 Date\_

This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in gathering the data required by the United States Army Corps of Engineers to make a preliminary assessment of stream quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change - version 06 03. To Comment. please call 919-876-8441 x 26.

		CHARACTERISTICS	<u>ÇECOREG</u>	IONROINI	and here the second a similar second and	SCORE
	<u>.</u> #.		Coastal	Piedmont	Mountain	
	]	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	3
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0 - 6	0-5	0-5	4
	3	(no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	1
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0 4	5
U.	5	(no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	2
SIC	6	(no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	1
DISXHd	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	5
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	3
海道を	<u>9</u>	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0 – 5	0-4	0-3	3
	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	3
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)		0-4	0-5	
	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	. 04 .	0-5	5
	13	Présence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	4
STABILITY	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	1
LS	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	1
	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	1
IIVII	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	2
HABI	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	2
H	19	Substrate embeddedness	NA*	0-4	0-4	-
	20	Presence of stream invertebrates (see page 4)	0-4	0-5	0-5	1.
A D (	21	Presence of amphibians	0-4	0-4	0-4	0
RIGEOGY	2 22	Presence of fish	0-4	° ≈ 0 <del>-</del> 4	0-4	0
L.	23	Evidence of wildlife use	0-6	·∹;0−5	0-5	1.
1994-0		Total Points Possible	100	100	100	
		TOTAL SCORE (also enter or	first page)			48

#### snap002

NC DWO Stream Identification Form Version 4.11 ACP Latitude: 35,86607 9/3/14 Project/Site: Date: Longitude: -78,00074 RTurnbull County: Nash Evaluator: EST Other **Total Points:** 22.5 Stream Determination (circle one) e.g. Quad Name: Bailey Stream is at least intermittent Ephemeral Intermitten Perennial if  $\geq$  19 or perennial if  $\geq$  30\* A. Geomorphology (Subtotal = 10.5) Moderate Strong Weak Absent  $\mathcal{O}$ 3 1 0 1ª. Continuity of channel bed and bank  $\overline{\mathcal{O}}$ 3 1 0 2. Sinuosity of channel along thalweg 3. In-channel structure: ex. riffle-pool, step-pool, 3 2 0 ⓓ ripple-pool sequence 3 2  $\langle 0 \rangle$ 1 4. Particle size of stream substrate 3  $\triangleleft$ 2 0 5. Active/relict floodplain  $\overline{\mathbb{Q}}$ 3 0 1 6. Depositional bars or benches 3 <u></u> 1 2 7. Recent alluvial deposits 2 3 07 1 8. Headcuts 1.5 0.5 0 9. Grade control  $\bigcirc 1.5 \ge$ 0.5 0 1 10. Natural valley Yes = 3 No = 0` 11. Second or greater order channel a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = 1  $\bigcirc 2 >$ 3 0 12. Presence of Baseflow 3 1 2  $\bigcirc$ 13. Iron oxidizing bacteria 0.5 0 متجارس 1.5 14. Leaf litter 1.5 <u>(0,5</u> 1 0 15. Sediment on plants or debris 1.5 1 <0.5~ 0 16. Organic debris lines or piles No = 0Yes=3> 17. Soil-based evidence of high water table? C. Biology (Subtotal = 0 3 1 3 18, Fibrous roots in streambed 0 1 ලා 2 19. Rooted upland plants in streambed 3 2 1  $\langle 0 \rangle$ 20. Macrobenthos (note diversity and abundance) 3 2 هره ک 1 21, Aquatic Mollusks 1.5 -92 1 0.5 22. Fish 1.5 1 0.5 ~0~ 23. Crayfish 1.5 1  $\overline{\mathbb{O}}$ 0.5 24. Amphibians 1.5 <0> 0.5 1 25. Algae FACW = 0.75; OBL = 1.5 Other 0 26. Wetland plants in streambed \*perennial streams may also be identified using other methods. See p. 35 of manual. Notes: \$10003 SIT Sketch: 5002001 CL Whap 003 OHWM width: 3ft Lstudy corrido

Top of Bank width: 3 ft



Waterbody snap002 facing northwest upstream.



Waterbody snap002 facing southeast downstream.



Waterbody snap002 facing southwest across bank.

USACE AID≓ DWQ ≓	Site ≠ (indicate on attached map)
STREAM QUALITY AS	snap 001 SSESSMENT WORKSHEET
Provide the following information for the stream reach und	er assessment:
1. Applicant's name: Dominion	2. Evaluator's name: EST (L Guper)
3. Date of evaluation: 914114	4. Time of evaluation: 10:30
5. Name of stream: UNT to Tar Liver	6. River basin: Tor - Pamlico
7. Approximate drainage area: <u>50 a.c.</u>	8. Stream order:
9. Length of reach evaluated: 50 ft	10. County: Nach
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): NA
Latitude (ex. 34.872312): 35,86542	•
Method location determined (circle): GPS Topo Sheet Ortho (	•••
13. Location of reach under evaluation (note nearby roads and	landmarks and attach map identifying stream(s) location):
South of Bend of the Rive	red near old Bailey Huy
14. Proposed channel work (if any): TBD	/ /
15. Recent weather conditions: rain within	24 hrs.
16. Site conditions at time of visit: loaded clear	cut
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation p	point? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES 🔊	20. Does channel appear on USDA Soil Survey? YES 🔊
21. Estimated watershed land use:% Residential	% Commercial% Industrial% Agricultural
20% Forested	<b>70</b> % Cleared / Logged% Other ()
* (Top of Bank) 22. Bankfull width:	23. Bank height (from bed to top of bank):
24. Channel slope down center of stream:Flat (0 to 2%)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the ecc characteristics identified in the worksheet. Scores should re characteristic cannot be evaluated due to site or weather co comment section. Where there are obvious changes in the cl into a forest), the stream may be divided into smaller reaches	(e 2): Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points oregion. Page 3 provides a brief description of how to review the effect an overall assessment of the stream reach under evaluation. If a inditions, enter 0 in the scoring box and provide an explanation in the haracter of a stream under review (e.g., the stream flows from a pasture that display more continuity, and a separate form used to evaluate each the between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 45 Comme	ents:
	·
This channel evaluation form is intended to be used on gathering the data required by the United States Army quality. The total score resulting from the completion	Date <u>9/4/14</u> or as a guide to assist landowners and environmental professionals in y Corps of Engineers to make a preliminary assessment of stream of this form is subject to USACE approval and does not imply a to change – version 06 03. To Comment, please call 919-876-8441 x 26.

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	₹ 4	CHARACTERISTICS		ION:ROINI		SCORE
			Coastal	Piedmont?	Mountain	
	1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	5
100	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0 - 5	2
	3	(no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	3
Ú.	5	(no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	2
SIC	6	(no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	2
DHYSI	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	3
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0 – 6	0-4	0-2	4
	<b>9</b>	<b>Channel sinuosity</b> (extensive channelization = 0; natural meander = max points)	0 – 5	0-4	0-3	3
	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	3
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*.	0-4	0-5	/
K W	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	3
LIT	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	4
STABILITY	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	
<b>L</b> S	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	D
and the second	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	2
ILVII (	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	1
<b>HABI</b>	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	2
H 源源	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	
	. ~ ·	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	0
QV VD	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	3
RIOLOGY	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	• 0-4	D
<b>R</b>	23	Fyidence of wildlife use	0-6	0-5	0-5	ļ
		Total Points Possible	100	100	100	
		TOTAL SCORE (also enter on	first påge) 🗠			45

NC DWQ Stream Identification Form	Version 4.11	Snat	001	
Chilling .	Project/Site:	+CP	Latitude: 35	
Evaluator: EST (LROPEN)	County: Na	sh	Longitude:	18.00069
Date: $9/4/19$ Evaluator: $ESE(LROPer)$ Total Points: Stream is at least intermittent $if \ge 19$ or perennial if $\ge 30^*$	Stream Determi Ephemeral Inte	nation (circle one) ermittent Perennial	Other e.g. Quad Name:	Bailey
A. Geomorphology (Subtotal = 10.5)	Absent	Weak	Moderate	Strong
1ª Continuity of channel bed and bank	0	1	(Ē)	3
2. Sinuosity of channel along thatweg	0	1	P)	3
3. In-channel structure: ex. riffle-pool, step-pool,			2	3
ripple-pool sequence	0	0	· · · · · · · · · · · · · · · · · · ·	
4. Particle size of stream substrate	0	D	2	3
5. Active/relict floodplain	0	1 .	0	3
6. Depositional bars or benches	0		2	3
7. Recent alluvial deposits	0	0	2	3
8. Headcuts	6	1	2	3
9. Grade control	0	0.5)	. 1	1.5
10. Natural valley	<u> </u>	0.5	1	1.5
11. Second or greater order channel		No = 0	Yes	3 = 3
<sup>a</sup> artificial ditches are not rated; see discussions in manual		0		
B. Hydrology (Subtotal =)				
12. Presence of Baseflow	0		2	$\square$
13. Iron oxidizing bacteria	0	D D	2	3
14. Leaf litter	1.5	Ð	0.5	0
15. Sediment on plants or debris	0	0.5	0	1.5
16. Organic debris lines or piles	P	0.5	1 _	1.5
17. Soil-based evidence of high water table?		No = 0	(Ye	es = 3
C. Biology (Subtotal =)	<u></u> \			
18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	()	2	1	0
20. Macrobenthos (note diversity and abundance)		1	2	3
21. Aquatic Mollusks	6	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	$\square$	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed		FACW = 0.75;	OBL = 1.5 Othe	r = 0,)
*perennial streams may also be identified using other me	ethods. See p. 35 of n	nanual.		
Notes: rain within 24 hr.		-		
Notes.   Alvi Variante C	5	napto2		
	7	Shopob3		a . 1
Sketch:		Nº1		1 N
	E C			
		2 1/		
			>\	
	T UNAPOD	3 Souper		
I le	CE Whapoo			
OHWM width : 4 ft str	dy corridor -	J		
Top of Bank width: 6 Ft				

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Waterbody snap001 facing north upstream.



Waterbody snap001 facing south downstream.



Waterbody snap001 facing west across bank.

USACE AID# DWQ ≠	Site # (indicate on attached map)
STREAM QUALITY A	snao O11 SSESSMENT WORKSHEET
Provide the following information for the stream reach un	
1. Applicant's name: Dominion	2. Evaluator's name: EST (L Koper)
3. Date of evaluation: 93/14	4. Time of evaluation: 12.pm
5. Name of stream: Tar River	6. River basin: Tar - PamliLO
7. Approximate drainage area: > SD Sg miles	8. Stream order: $\underline{\geq}4$
9. Length of reach evaluated: 100 +++	10. County: Nash
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): NA
	Longitude (ex77.556611): -78,00376
Method location determined (circle): GPS Topo Sheet Ortho 13. Location of reach under evaluation (note nearby roads and	
East of old Bailey Hwy betwee	en Huy 97 and Bend of the Fiver Rd
14. Proposed channel work (if any):	•
15. Recent weather conditions: Pain Within	24 hrs.
	bank near logged clearcut
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	$\angle$ Nutrient Sensitive Waters $\underline{\checkmark}$ Water Supply Watershed $\underline{}$ (I-IV)
	point? (YES) NO If yes, estimate the water surface area: see comments
19. Does channel appear on USGS quad map? <b>FS</b> NO	20. Does channel appear on USDA Soil Survey? YES NO
	2% Commercial <u>1</u> % Industrial <u>30</u> % Agricultural
55% Forested	2 % Cleared / Logged % Other ()
* (Top of Bank) 22. Bankfull width: 132	23. Bank height (from bed to top of bank): >4 ft.
-	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Ever to each characteristic within the range shown for the ec- characteristics identified in the worksheet. Scores should characteristic cannot be evaluated due to site or weather c comment section. Where there are obvious changes in the into a forest), the stream may be divided into smaller reache	<b>Age 2):</b> Begin by determining the most appropriate ecoregion based on y characteristic must be scored using the same ecoregion. Assign points coregion. Page 3 provides a brief description of how to review the reflect an overall assessment of the stream reach under evaluation. If a conditions, enter 0 in the scoring box and provide an explanation in the character of a stream under review (e.g., the stream flows from a pasture es that display more continuity, and a separate form used to evaluate each age between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): <u>77</u> Comm *Lake Royale (345 ac.) and numerous Tar River upstream from the evaluation	nents:
gathering the data required by the United States Arm quality. The total score resulting from the completio	Date <u>9/3/14</u> Iy as a guide to assist landowners and environmental professionals in my Corps of Engineers to make a preliminary assessment of stream n of this form is subject to USACE approval and does not imply a t to change - version 06 03. To Comment, please call 919-876-8441 x 26.

		CHARACTERISTICS		ION ROINT Piedmont	and the second	SCORE :
	1	Presence of flow / persistent pools in stream	0-5	0-4	0-5	5
	2	(no flow or saturation = 0; strong flow = max points) Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	6
	3	(no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	6
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	Ч
NIV.	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	3
DISXH	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	4.
Ηđ	₹7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding.= max points)	0-5	0-4	0-2	3
	<u>ָ</u> 8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	5
	<b>.</b> 9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	2
	10	Sediment input (extensive deposition= 0; little or no sediment = max points) Size & diversity of channel bed substrate	0-5	0-4	0-4	4
	11	(fine, homogenous = 0; large, diverse sizes = max points) Evidence of channel incision or widening	NA*	0-4	0-5	
IX	12	(deeply incised = 0; stable bed & banks = max points) Presence of major bank failures	0-5	0-4	0-5	5
STABILITY	13	(severe erosion = 0; no erosion, stable banks $=$ max points) Root depth and density on banks	0-5	0-5	0-5	5
<b>LAT</b>	14	(no visible roots = 0; dense roots throughout = max points) Impact by agriculture, livestock, or timber production	0-3	0-4	0-5	3
	15	(substantial impact =0; no evidence = max points) Presence of riffle-pool/ripple-pool complexes	0-5	0-4	0-5	<u> </u>
	16	(no riffles/ripples or pools = 0; well-developed = max points) Habitat complexity	0-3	0-5	0-6	D
BITAT	17	(little or no habitat = 0; frequent, varied habitats = max points) Canopy coverage over streambed	1	0-6	0-6	4
¢ HAB	18	(no shading vegetation = 0; continuous canopy = max points) Substrate embeddedness	0-5	0-5	0-5	2
		(deeply embedded = 0; loose structure = max) Presence of stream invertebrates (see page 4)	NA*	0-4	0-4	
N,	20	(no evidence = 0; common, numerous types = max points) Presence of amphibians	0-4	0-5	0-5	0
RIGEOGY	21	(no evidence = 0; common, numerous types = max points)_ Presence of fish	1	0-4	0-4	4
RID	70.	(no evidence = 0: common, numerous types = max points) Evidence of wildlife use	0-4	0-4	0-4	
<u> </u>	23	(no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	
		Total Points Possible	<u> </u>	100	100	
語の		TOTAL SCORE (also enter on	first page) 🗄			77

NC DWQ Stream Identification Form	Version 4.11		Snapl	
9/3/14	Project/Site:	ACP	Latitude: 35	862037
	County: Nas		Longitude:	18,00376
iuator: EST (LFOPEN) al Points: am is at least intermittent 9 or perennial if $\geq 30^*$	Stream Determi Ephemeral Inte	nation (circle one) rmittent Rerennia	Other e.g. Quad Name	:
Seconorphology (Subtotal = $(7)$	Absent	Weak	Moderate	Strong
Geomorphology (Subtotal = <u>)</u>	0	1	2	(3)
inuosity of channel along thatweg	0	Q.	2	3
-channel structure: ex. riffle-pool, step-pool,	0	1	2	3
ople-pool sequence article size of stream substrate	0	1	2	3
ctive/relict floodplain	0	1 .	2	(3)
Depositional bars or benches	0	1	2	3
Recent alluvial deposits	0	0	2	3
Headcuts		1	2	3
Grade control	(١	0.5	1	1.5
Natural valley	0	0.5 No = 0		<u>1.5</u> <u>5</u> =3
Presence of Baseflow     Iron oxidizing bacteria     Leaf litter     Sediment on plants or debris     Organic debris lines or piles     Soil-based evidence of high water table?		1 1 0.5 0.5 No = 0	2 2 0.5 1 1 5	
. Biology (Subtotal =)				
8. Fibrous roots in streambed	<u> </u>	2		0
9. Rooted upland plants in streambed	0	21	2	3
0. Macrobenthos (note diversity and abundance)			2	3
1. Aquatic Mollusks		0.5	1	15
2. Fish	0	0.5	1	1.5
23. Crayfish 24. Amphibians		0.5	1	15
25. Algae	Q	0.5	1	1.5
26 Wetland plants in streambed			OBL = 1.5 Qth	er)≓0
*perennial streams may also be identified using other me	thods. See p. 35 of n	nanual.		
lotes:				
Sketch:	VIL	where or	/	<sup>N</sup>



Waterbody snao011 facing west upstream.



Waterbody snao011 facing east downstream.



Waterbody snao011 facing south across bank.

Survey Description							
Project Name:	iv	Vaterbody Na	ame.		Waterbody ID:	1	Date:
Southeastern Reliability			amed Poi	ad			
	l				Onaoe	25	8/4/14
State: Count	•	ļ	Company:		v Member initials:	Photos:	6. 11
NC N	ash		EST	1	6,1KM ~	+aicia	ng south
ract Number(s):		<u> </u>	Nearest Milepost:	<u>~</u>	Associated Wetlan	nd ID(s):	2
18-196			351.	3	Whade	217	
urvey Type:			· · · · · ·			<u> </u>	
check one)	Centerline		e-Route	Access Road	Other:		
Physical Attributes	•				-		· ·
Vaterbody Type:							
check one)	id 🗆 Natural F	Pond 🗔 Lak	ke 🗆 Reservoir 🖾	Impoundment i	□ Oxbow □ Other		
lydrologic Regime:			O a min a man a milu F			□ <b>-</b>	· · · ·
	Permanently F		Semipermanently F		asonally Flooded	Temporaril	y Flooded
MMHC	OHWM Indica (check all that app		🖸 Clear line	Shelving	□Wrested	Scou	uring ⊡Wate
Height:			on bank	_ onlining	vegetation	2,0000	staining
<u>v</u> ft.	ΩBent	matted or m	issing OWrack	Litter an	d ⊡Abruot ol	ant ⊡Soil ch	aracteristic change
	vegetati		line	debris	community		and of one of the offering of
Depth of Water:		Bank heid	nt (average):		Bank slope (a		
10 ft.		Dank neigi		D.	Donk Slope (a		
√A□ <u>10</u> n.				it.		oe <u>د ۲</u>	grees
-							
La contra de la co							
Qualitative Attributes	i	/					
Water Appearance:			urbid □Sheen	n 🗆 Surfa	ce 🗆 Algal	□Other:	
Water Appearance:		lear DT	urbid □Sheer on surfac		ce	Other:	
Nater Appearance: check one)	water D		on surfa	ce scum	mats		
Water Appearance:         icheck one)       IDNo         Substrate:       ID Be				ce scum	· · · · · · · · · · · · · · · · · · ·		
Water Appearance:         icheck one)       INO         Substrate:       Ino         Icheck all that apply)	water D		on surfa	ce scum	mats Silt/ clay	c 🗆 Other:	
Water Appearance:         icheck one)       IDNo         Substrate:       ID         icheck all that apply)       ID         % of Substrate:	water 🗘 edrock 🗆 Bo _%	ulder 🖸 C	on surfa	ce scum	mats Silt/ clay	c 🗆 Other:	
Water Appearance:         icheck one)       IDNo         Substrate:       ID         icheck all that apply)       ID         % of Substrate:	water DC	ulder 🖸 C _% Layers:	on surfa	ce scum □ Sand ਈ % <u>/</u>	mats Sill/ clay □ Organi	c 🗆 Other:	
Water Appearance: check one)	water C edrock D Bo _% Vegetative (check all that a	ulder 🗋 C _% Layers: pply)	on surfac obble	ce scum □ Sand ੴ % <u>/</u> tb⊀s	mats Sill/ clay □ Organi	c □ Other: %%	
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Water Appearance: (check one)	water cdrock Bo % Vegetative (check all that a Avg. DBH (approx.) (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst):	ulder C _%  Layers: pply) of Dominants C (2) S+e A ( C ( ) Latic vegetation, (	on surfactors on	ce scum	mats Sill/ clay $\Box$ Organi $\int U_{\%}$ Saplings/Shrubs: 3in. 1, 1 (94 i d.8)	c □ Other: %% □ Herbs  (M box Y )	in.
Water Appearance: (check one) No Substrate: Be (check all that apply) % of Substrate: Width of Riparian Zone: MAD The Phan Nonthons CEPhan Nonthons CE	water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water	ulder $\Box$ C _% Layers: ppiy of Dominants $C \cap S + e$ $A \subset C'$ uatic vegetation, $\Box$ in waterbody, $\nabla$	on surfaction on surfaction on surfaction on surfaction of the second se	ce scum	mats Sill/ clay $\Box$ Organi $\int U_{\%}$ Saplings/Shrubs: 3in. 1, 1 (94 i d.8)	c □ Other: %% □ Herbs  (M box Y )	in.
Water Appearance: (check one) No Substrate: Be (check all that apply) % of Substrate: Width of Riparian Zone: ft. N/AL Dominant Bank Vegetation CEPNA 1001005 CCC Central Aquatic Habitats (ex. submer SUBMEYSC Aquatic Organisms Obser NA T&E Species Observed (lice NA Disturbances (ex: livestock EXCOVOLED	water cdrock Bo % Vegetative (check all that a Avg. DBH (approx.) (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst): (ifst):	ulder $\Box$ C _% Layers: ppiy of Dominants $C \cap S + e$ $A \subset C'$ uatic vegetation, $\Box$ in waterbody, $\nabla$	on surfactoria on sur	ce scum	mats Sill/ clay $\Box$ Organi $\int U_{\%}$ Saplings/Shrubs: 3in. 1, 1 (94 i d.8)	c □ Other: %% □ Herbs  (M box Y )	in.
Water Appearance: (check one) No Substrate: Be (check all that apply) % of Substrate: Width of Riparian Zone: ft. N/AL Dominant Bank Vegetation CCC CCC Aquatic Habitats (ex. submer SUBMEYSC Aquatic Organisms Obser NA T&E Species Observed (list NA Disturbances (ex: livestock EXCOVALC Waterbody is:	water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water water	ulder $\Box$ C _% Layers: ppiy of Dominants $C \cap S + e$ $A \subset C'$ uatic vegetation, $\Box$ in waterbody, $\nabla$	on surfaction on surfaction on surfaction on surfaction of the second se	ce scum □ Sand B % / the checks of the subme	mats Sill/ clay $\Box$ Organi $\int U_{\%}$ Saplings/Shrubs: 3in. 1, 1 (94 i d.8)	c □ Other: %% □ Herbs  (M box Y )	in.

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Waterbody ID: ONBODDS High Quality: Natural, natural bank vegetation around entire waterbody; banks stable and protected by roots; water color is clear to tea-colored; no а barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man. Moderate Quality: Altered by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or bank 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: 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 locations, survey boundary, and IDs of associated features) study corridy

Environmental Field Surveys Open Water Point Photo Page



Open Waterbody onao005 facing south.

USACE AID#	
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DWQ #\_

sna0010

Site #\_\_\_\_\_ (indicate on attached map)

STREAM QUA	LITY ASSESSMENT WORKSHEET
Provide the following information for the strea	m reach under assessment:
1. Applicant's name: Dominion	2. Evaluator's name: ESI - K. Murphrey, J. Gay
3. Date of evaluation: 8/4/14	4. Time of evaluation: 3:00 pm
5. Name of stream: UNT to Tar Rit	6. River basin: Neuse
7. Approximate drainage area: <u>  ac.</u>	
9. Length of reach evaluated: 50 ft.	10. County: Nash
11. Site coordinates (if known): prefer in decima	70 00777
Latitude (ex. 34.872312): 35.85711	Longitude (ex. –77.556611):
13. Location of reach under evaluation (note near	heet Ortho (Aerial) Photo/GIS Other GIS Other by roads and landmarks and attach map identifying stream(s) location): on of HWY 97 and Old Bailey HWY.
14. Proposed channel work (if any): TBD	
15. Recent weather conditions: 2 in. to	in in study area within the past 48 hrs.
16. Site conditions at time of visit: Excav	ated ditch in Agricultural field
17. Identify any special waterway classifications	
Trout WatersOutstanding Resource W	Vaters $\underline{\checkmark}$ Nutrient Sensitive Waters $\underline{\checkmark}$ Water Supply Watershed $\underline{\neg} \underline{\lor}$ (I-IV)
18. Is there a pond or lake located upstream of th	e evaluation point? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map?	(ES NO) 20. Does channel appear on USDA Soil Survey? YES NO
<b>21.</b> Estimated watershed land use: $\frac{10}{100}$ % Res	idential% Commercial% Industrial <u>3D</u> % Agricultural
<u>60</u> % For	ested% Cleared / Logged% Other ()
22. Bankfull width: 8 F4	23. Bank height (from bed to top of bank): 3 f+.
	at (0 to 2%)Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity: <u>Straight</u> Occas	ional bendsFrequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification to each characteristic within the range shown characteristics identified in the worksheet. So characteristic cannot be evaluated due to site of comment section. Where there are obvious char into a forest), the stream may be divided into sr reach. The total score assigned to a stream reach highest quality.	cated on page 2): Begin by determining the most appropriate ecoregion based on n, etc. Every characteristic must be scored using the same ecoregion. Assign points a for the ecoregion. Page 3 provides a brief description of how to review the bres should reflect an overall assessment of the stream reach under evaluation. If a or weather conditions, enter 0 in the scoring box and provide an explanation in the nges in the character of a stream under review (e.g., the stream flows from a pasture naller reaches that display more continuity, and a separate form used to evaluate each ch must range between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 32 2 inches of Rain 8/1-	B/2 Comments: Ditch in Agricultural Rield
Evaluator's Signature	Date 8/4/14
gathering the data required by the United quality. The total score resulting from the	be used only as a guide to assist landowners and environmental professionals in States Army Corps of Engineers to make a preliminary assessment of stream completion of this form is subject to USACE approval and does not imply a Form subject to change – version 06/03. To Comment, please call 919-876-8441 x 26.

ļ.	CHAVRAX CTURNSTUCS		IORIPOIRT	RAVRICAT	SCORE
	Presence of flow / persistent pools in stream	Contral	Bidinon)	Momenn	
	(no flow or saturation = 0; strong flow = max points)	0=5	÷+0=4	15 0 = 519	2
2	Evidence of past human alteration ( (extensive alteration = 0; no alteration = max points).	0=61-3	0-5		0
	Riparian zone (no buffer ≡ 0; contiguous wide buffer ≡ max points)	- 0 <u>-</u> 6- 34	4. • • • • • • • • • • • • • • • • • • •	0-5-44	1
2	Evidence of nutrient or chemical discharges	0 5	0-4	0-4	2
<u>A</u> l.	Groundwater discharge, (no discharge = 0, springs, seeps, wetlands, etc. = max points).		F-4-04-62-	0-4	1
SIIC 9	Presence of adjacent floodplain a set of the	0-4	0 = 4		0
	Entrenchment / floodplain access a (deeply, entrenched = 0, frequent flooding = max points).		0 4		0
18	(no wetlands = 0. large adjacent wetlands = max points).	0-61		1-0-2	2
1 9	(extensive channelization = 0, natural meander = max points).	0 = 5	10-4 <sup>-1</sup>	0=3	0
	Sediment input	Q'=-5	0≅4		4
	Size & diversity of channel bed substrate	INAL	0 = 4	05-M	
	Evidence of channel incision or widening	0-5	$\frac{4}{4}0 = 4$	0 <b>≓</b> 5	4
1 TUT	Presence of major bank failures; (severe erosion = 0, no crosion, stable banks = max points).	015 5 M	0' <b>≓</b> 5°r	http://	5
	Root depth and density on banks	0=3	0.=4	0,-5	1
S I I	Impact by agriculture, livestock, or timber, production	0-5 s	, <b>0</b> −4,,	. 0=5.	5
	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0,-3	0.45	0-6	D
	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	06	0:=6	3
	Canopy coverage over streambed; (no shading vegetation = 0; continuous canopy = max points)	0~5	0 – 5	0-5-	0
	Children and Children and Kadabara	INKY?	0-4	0-4	
2	Presence of stream invertebrates (see page 4) (no evidence = 0; common; numerous types = max points)	0-4	0-5	-0-5 <sup>-</sup>	0
<u>ن</u> وا	Presence of amphibians	0-4	· 0-4	0-4	2
	Presence of fish	0-4	0-4	0-4	0
	Fuidence of wildlife use	0-6	0-5	Õ-5	0
	RockRoinceRossible	1000	100	100	E TRANS
	TOTAL SCORE (also enteron	(instpage))			32

#### NC DWQ Stream Identification Form Version 4.11

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# sna0 010

NC DWQ Stream Identification Form	n Version 4.11		140010		
Date: 8/4/14	Project/Site:	rCP	Latitude: 35,85711		
Evaluator: J. Gay / K. Murphrey	County: Na	sh	Longitude: -78,00773		
Total Points:Stream is at least intermittentif $\geq 19$ or perennial if $\geq 30^*$		nation (circle one) mittent Perennial	Other Bailey e.g. Quad Name:		
A. Geomorphology (Subtotal = (15)	Absent	Weak	Moderate	Strong	
1 <sup>a.</sup> Continuity of channel bed and bank	()	1	2	3	
2. Sinuosity of channel along thalweg		1	2	3	
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	Ô	1	2	3	
4. Particle size of stream substrate	0	(1)	2	3	
5. Active/relict floodplain	0	1	2	3	
6. Depositional bars or benches	0	1	2	3	
7. Recent alluvial deposits	$\bigcirc$	1	2	3	
8. Headcuts		1	2	3	
9. Grade control	(0)	0.5	1	1.5	
10. Natural valley	0	(0.5)	1	1.5	
11. Second or greater order channel	No	(=0)	Yes	= 3	
<sup>a</sup> artificial ditches are not rated; see discussions in manual	I.,				
B. Hydrology (Subtotal = 4)		·····			
12. Presence of Baseflow		1	2	3	
13. Iron oxidizing bacteria		1	2	3	
14. Leaf litter	1.5		0.5	0	
15. Sediment on plants or debris		0.5	1	1.5	
16. Organic debris lines or piles	()	0.5	1	1.5	
17. Soli-based evidence of high water table?	No	$\mathbf{p} = 0$	Yes	<u>€3)</u>	
C. Biology (Subtotal = 4,75)			~~~~		
18. Fibrous roots in streambed	3	2	(1)	0	
19. Rooted upland plants in streambed	3	(2)	1	0	
20. Macrobenthos (note diversity and abundance)		1	2	3	
21. Aquatic Mollusks		1	2	3	
22. Fish		0.5	1	1.5	
23. Crayfish		0.5	1	1.5	
24. Amphibians	0	0.5	$(\mathbf{D})$	1.5	
25. Algae	$\bigcirc$	0.5	1	1.5	
26. Wetland plants in streambed		FACW = 0.75 OF	3L = 1.5 Other =	0	
*perennial streams may also be identified using other meth Notes: OHWM Present	nods. See p. 35 of manua	al			
OHWM width: 5ft	A Tar River upline kownline C 97				



Waterbody snao010 facing north upstream.



Waterbody snao010 facing south downstream.



Waterbody snao010 facing west across.

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Sn ⊂ 0009 Site =\_\_\_\_ (indicate on attached map)

Provide the following information for the stream reach unde	SESSMENT WORKSHEET
1. Applicant's name: Danialon	2. Evaluator's name: K. MURPINES
3. Date of evaluation: $3/4/14$	4. Time of evaluation: 2.00
5. Name of stream: UNT to Tar River	6. River basin: NEUSE
7. Approximate drainage area: <2 @cves	8. Stream order:
9. Length of reach evaluated: $508^{2}$	10. County: Nash
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): NA
	Longitude (ex77.556611): 78,01292
Method location determined (circle): GPS Topo Sheet Ortho (A 13. Location of reach under evaluation (note nearby roads and la LOCATED TO THE WEST CE OLD BOILEY HW	erial) Photo/GIS Other GIS Other
14. Proposed channel work (if any): TBD	
	Study over within the Past 48 hours.
16. Site conditions at time of visit: EXCAVATED diffe	h in Agriculture Field
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
	Autrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation po	$\sim$
19. Does channel appear on USGS quad map? YES NO	20. Does channel appear on USDA Soil Survey? YES (NO)
	% Commercial% Industrial <u>30</u> % Agricultural
· · · · · · · · · · · · · · · · · · ·	% Cleared / Logged% Other ()
22. Bankfull width: 8 Pt.	23. Bank height (from bed to top of bank): 4 47.
24. Channel slope down center of stream:Flat (0 to 2%)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends _	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the ecor characteristics identified in the worksheet. Scores should ref characteristic cannot be evaluated due to site or weather com comment section. Where there are obvious changes in the ch into a forest), the stream may be divided into smaller reaches reach. The total score assigned to a stream reach must range highest quality.	2): Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points egion. Page 3 provides a brief description of how to review the lect an overall assessment of the stream reach under evaluation. If a ditions, enter 0 in the scoring box and provide an explanation in the aracter of a stream under review (e.g., the stream flows from a pasture hat display more continuity, and a separate form used to evaluate each between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 30 Commen Quinches/ OF Rain 8/1-8/2	nts: ditch in Agriculture Field
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· · · · · · · · · · · · · · · · · · ·	

Evaluator's Signature <u>Heur</u> <u>UMAU</u> This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in gathering the data required by the United States Army Corps of Engineers to make a preliminary assessment of stream quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change – version 06 03. To Comment, please call 919-876-8441 x 26.

- 3		CHARACTERISTICS		ION POINT	Section of the sectio	SCORE
	理	CHARACILRISTICS	Coastal	Piedmonte	Mountain	
	1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	3
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	\
	3	(no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	2
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	4
	5	(no discharge = 0; springs, seeps, wellands, etc. = max points)	0-3	0-4	0-4	0
5	. 6	(no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	$\bigcirc$
XBX	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	- 0-5	0-4	0-2	0
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0 - 6	0-4	0-2	0
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	1
	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	$\bigcirc$
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0 - 5	
	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0 - 4	0-5	3 :
D.U.	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	3
STABILITY	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	
S	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	S
	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0 – 6	0
ILAT	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	4
<b>HABI</b>	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0_5	0-5	0-5	
日後後	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	
	20	Presence of stream invertebrates (see page 4)	0-4	0-5	0-5	0
V D O	21	Presence of amphibians	0-4	0-4	0-4	2
BIOLOGY	22	Presence of fish	0-4	0-4	0-4	6
a star	23	Evidence of wildlife use	0-6	0-5	0-5	Õ
1002	-1 1908-1-5 48-77-55	Total Points Possible	-100	100	100 - 55	
		TOTAL SCORE (also enter or	i first page)			30

# STREAM QUALITY ASSESSMENT WORKSHEET

\* These characteristics are not assessed in coastal streams.

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NC DWQ Stream Identification Form Version 4.11 くれんののの						
Date: 8/4/14	Project/Site:	ACP	Latitude: 3 S	.8496S		
Evaluator: K, MURPHVEL/	County: NO	Sh	Longitude: -	78.01292		
Total Points:Stream is at least intermittent $if \ge 19$ or perennial if $\ge 30^*$		ination (circle one) ermittent Perennial	Other Bai e.g. Quad Name:			
A. Geomorphology (Subtotal = <u>H. 5</u> )	Absent	Weak	Moderate	Strong		
1 <sup>ª.</sup> Continuity of channel bed and bank	0	1	2	3 N		
2. Sinuosity of channel along thalweg	$(\hat{0})$	1	Ź	3		
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	(1)	2	3		
4. Particle size of stream substrate	0	1	<u></u>	3		
5. Active/relict floodplain	Ó	1	2	3		
6. Depositional bars or benches			2	3		
7. Recent alluvial deposits		1 1	2	3		
8. Headcuts						
9. Grade control		(0.5)	2	3		
	<u> </u>		1	1.5		
10. Natural valley	0	0.5	1	1.5		
11. Second or greater order channel	N		Yes	= 3		
<sup>a</sup> artificial ditches are not rated; see discussions in manual		-				
B. Hydrology (Subtotal = $6^{1/2}$ )			<b>~</b>			
12. Presence of Baseflow	0	1	(2)	3		
13. Iron oxidizing bacteria		1	2	3		
14. Leaf litter			0.5	0		
15. Sediment on plants or debris		0.5	0.5	1.5		
		0.5				
<ul><li>16. Organic debris lines or piles</li><li>17. Soil-based evidence of high water table?</li></ul>		0.5	1	1.5		
C. Biology (Subtotal =)		0-0	Yes	<u>-</u> <u>-</u> <u>-</u> ]		
18. Fibrous roots in streambed	(3)	2	1	0		
19. Rooted upland plants in streambed	(3)	2	1	0		
20. Macrobenthos (note diversity and abundance)		1	2	3		
21. Aquatic Mollusks		1	2	3		
22. Fish	- B	0.5	4	1.5		
23. Cravfish		0.5	(h)			
			<u> </u>	1.5		
24. Amphibians		0.5	1	1.5		
25. Algae	()	0.5	1	1.5		
26. Wetland plants in streambed			BL = 1.5 Other =	0		
*perennial streams may also be identified using other method	is. See p. 35 of man					
Notes:		OHWM PI	resent			
Sketch:	-study Corridor					
BONK: SFE/ HWM12	fe					

UNT to Tax River

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Waterbody snao009 facing south upstream.



Waterbody snao009 facing north downstream.



Waterbody snao009 facing west across.

USACE	AID#_
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sna0008

Site #\_\_\_\_\_ (indicate on attached map)

<b>STREAM QUALITY AS</b>	SSESSMENT WORKSHEET
Provide the following information for the stream reach und	er assessment:
1. Applicant's name: Dominion	2. Evaluator's name: K. MWPhVEY
3. Date of evaluation: 7/30/14	4. Time of evaluation: 1 PM
5. Name of stream: UNT to Toisnot Sworn?	6. River basin: NEUS-e
7. Approximate drainage area: 10 A-CVCS	8. Stream order:
9. Length of reach evaluated: 100FE	10. County: NASH
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): <u>NA</u>
Latitude (ex. 34.872312): <u>35, 83045</u>	_Longitude (ex77.556611): <u>-78,02547</u>
Method location determined (circle): GPS) Topo Sheet Ortho (A 13. Location of reach under evaluation (note nearby roads and I 10 Cafed east of Graham Bron	Aerial) Photo/GIS Other GIS Otherandmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): TBD	
15. Recent weather conditions: SUNNY	
16. Site conditions at time of visit: Man-Made ditth	In an field
	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation p	oint? YES (NO) If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES NO	20. Does channel appear on USDA Soil Survey? YES NO
21. Estimated watershed land use:% Residential	% Commercial% Industrial 40% Agricultural
<u>60</u> % Forested	% Cleared / Logged% Other ()
22. Bankfull width: 10 FE	23. Bank height (from bed to top of bank): 12 + t
24. Channel slope down center of stream:Flat (0 to 2%)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the ecor characteristics identified in the worksheet. Scores should ref characteristic cannot be evaluated due to site or weather con comment section. Where there are obvious changes in the cha- into a forest), the stream may be divided into smaller reaches to reach. The total score assigned to a stream reach must range highest quality.	<b>2):</b> Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points region. Page 3 provides a brief description of how to review the lect an overall assessment of the stream reach under evaluation. If a ditions, enter 0 in the scoring box and provide an explanation in the aracter of a stream under review (e.g., the stream flows from a pasture that display more continuity, and a separate form used to evaluate each between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 17 Commer	nts: Ditch in Ag Field
· · · · · · · · · · · · · · · · · · ·	
· · · · · · · · · · · · · · · · · · ·	
Evaluator's Signature Kluch LUYUN	Date 7/31/14
This channel evaluation form is intended to be used only a gathering the data required by the United States Army quality. The total score resulting from the completion of	as a guide to assist landowners and environmental professionals in Corps of Engineers to make a preliminary assessment of stream of this form is subject to USACE approval and does not imply a change – version 06/03. To Comment, please call 919-876-8441 x 26.

	1		ECOREG	ION'POINT	RANGE	
	繊糊	CHARACTERISTICS		Piedmonta	Mountain	SCORE
	1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0 – 5	0-4	0-5	0
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0 – 6	0 – 5	0 – 5	0
	3	<b>Riparian zone</b> (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0 – 5	1
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0 – 5	0-4	0-4	1
<b>AL</b>	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	0
XSIC	6	<b>Presence of adjacent floodplain</b> (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	0
HÌ	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	0
PHYSICAL	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0 – 2	$\bigcirc$
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0 – 5	0-4	0-3	0
C C	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	2.
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	
STABILITY	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	3.,
ILIT	13	<b>Presence of major bank failures</b> (severe erosion = 0; no erosion, stable banks = max points)	0 5	0 - 5	0-5	5.
LAB	14	<b>Root depth and density on banks</b> (no visible roots = 0; dense roots throughout = max points)	0-3	0 - 4	0-5	2.
	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	0
	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0 - 6	0
ITA	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0 - 6	0-6	2.
<b>HABITAT</b>	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0 – 5	0-5	0
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NAT NAT	0 - 4	0-4	
ري. ا	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0 - 4	0-5	0-5	0
0G)	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
<b>BIOLOCV</b>	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
	23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	
		Total Points Possible	100	100	100	
		CONTRACTOR AND	irst page)			17

# STREAM QUALITY ASSESSMENT WORKSHEET

\* These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form	Snaodus			
Date: 7/3//14	Project/Site:	4CP	Latitude: 35	83045
Evaluator: K, MU(Phrey	County: NO	Sh		15,02317
Total Points: Stream is at least intermittent if $\geq$ 19 or perennial if $\geq$ 30*		nation (circle one) ermittent Perennial	Other e.g. Quad Name	Borley, NC
A Design I I and a second Z				
A. Geomorphology (Subtotal = <u>3</u> )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg     3. In-channel structure: ex. riffle-pool, step-pool,		1	2	3
ripple-pool sequence	$ $ $\odot$	1	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)	1	2	3
6. Depositional bars or benches		1	2	3
7. Recent alluvial deposits		1	2	3
8. Headcuts	Ō	1	2	3
9. Grade control	Q	0.5	<u> </u>	1.5
10. Natural valley		0.5	1	1.5
11. Second or greater order channel		o =(0)		= 3
<sup>a</sup> artificial ditches are not rated; see discussions in manual	· · · · · · · · · · · · · · · · · · ·			
B. Hydrology (Subtotal =)				
12. Presence of Baseflow	(0)	1	2	3
13. Iron oxidizing bacteria			2	3
14. Leaf litter	1.5	$\frac{1}{(1)}$	0.5	0
15. Sediment on plants or debris	(0)	0.5	1	1.5
16. Organic debris lines or piles	70	0.5	1	1.5
17. Soil-based evidence of high water table?		lo = 0		5 <del>7</del> 3
C. Biology (Subtotal = 5)		<u> </u>		<u> </u>
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed		(2)	1	0
20. Macrobenthos (note diversity and abundance)			2	3
21. Aquatic Mollusks	-	1	2	3
22. Fish	(0)	0.5		1.5
23. Crayfish	6	0.5	1	1.5
24. Amphibians	T D	0.5		1.5
25. Algae	(3)	0.5	1	1.5
26. Wetland plants in streambed		FACW = 0.75; O	BL = 1.5 Other :	
*perennial streams may also be identified using other metho	ds. See p. 35 of man			ý
Notes:			present	
	1780008.	, , , , , , , , , , , , , , , , , , ,		
OHWM: 354 BONK: 10 Ft	······································			
Summer 384 ROVIC: 10 &				

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Waterbody snao008 facing south upstream.



Waterbody snao008 facing north downstream.



Waterbody snao008 facing west across channel.

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Sna 0007 Site ≠\_\_\_\_ (indicate on attached map)

STREAM QUALITY AS	SESSMENT WORKSHEET
Provide the following information for the stream reach unde	r assessment:
1. Applicant's name: Dominion	2. Evaluator's name: K, MURPHVEY
3. Date of evaluation: $7/30/14$	4. Time of evaluation: $3^{\circ}30$
5. Name of stream: UNT to TUISAUL SWOMP	6. River basin: NEUSE
7. Approximate drainage area: 20 OCres	8. Stream order:
9. Length of reach evaluated: $508E$	10. County: Nash
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): <u>N A</u>
Latitude (ex. 34.872312); 35, 82090	_ Longitude (ex77.556611): -78,03115
Method location determined (circle): GP Topo Sheet Ortho (A 13. Location of reach under evaluation (note nearby roads and k	erial) Photo GIS Other GIS Other
	nithfield road, Just Past the main Chanel
14. Proposed channel work (if any): TBD	Of Toisnot Swamp
15. Recent weather conditions: SUMM	,•,•
16. Site conditions at time of visit: Maistarbed	· · · · · · · · · · · · · · · · · · ·
	_Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation pe	pint? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES (NO)	20. Does channel appear on USDA Soil Survey? YES (NO)
21. Estimated watershed land use:% Residential	% Commercial% Industrial 🙆 % Agricultural
	% Cleared / Logged% Other ()
22. Bankfull width: <u>SFF</u> .	23. Bank height (from bed to top of bank): >1 Pt.
24. Channel slope down center of stream:Flat (0 to 2%)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends	<u>V</u> Frequent meander <u>Very sinuous</u> Braided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the econ characteristics identified in the worksheet. Scores should re- characteristic cannot be evaluated due to site or weather cor comment section. Where there are obvious changes in the ch- into a forest), the stream may be divided into smaller reaches reach. The total score assigned to a stream reach must range highest quality.	e 2): Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points region. Page 3 provides a brief description of how to review the flect an overall assessment of the stream reach under evaluation. If a additions, enter 0 in the scoring box and provide an explanation in the aracter of a stream under review (e.g., the stream flows from a pasture that display more continuity, and a separate form used to evaluate each e between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): <u>59</u> Comme	nts:
· · · · · · · · · · · · · · · · · · ·	
Evaluator's Signature Merrie unthe	1 Date 7/30/14
This channel evaluation form is intended to be used only gathering the data required by the United States Army	as a guide to assist landowners and environmental professionals in Corps of Engineers to make a preliminary assessment of stream of this form is subject to USACE approval and does not imply a

n quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change - version 06 03. To Comment. please call 919-876-8441 x 26.

# STREAM QUALITY ASSESSMENT WORKSHEET

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- 20	#	CHARACTERISTICS	100 C 10	ION POINT		SCORE
		the second s	Coastal	Piedmont	e Mountain S	
2	1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	3
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0 - 5	5
	3	(no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	5
	4	Evidence of nutrient or chemical discharges	0-5	0-4	0-4	5
<u></u>	5	(extensive discharges = 0; no discharges = max points) Groundwater discharge	0-3	0-4	0-4	3
) <u> </u>	6	(no discharge = 0; springs, seeps, wetlands, etc. = max points) Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	~ 1
	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	4.
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0 – 6	0-4	0-2	5.
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	3
1	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	2
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	
	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	- : 0-5	2
	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	2
	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	1
	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	5
	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	
	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	3.
	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	-0-5	0-5	4
	' 19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	
	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	$\bigcirc$
	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	2
BIOLOGY	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
B	23	Evidence of wildlife use (no evidence = 0: abundant evidence = max points)	0-6	0-5	0-5	3
	1	Total Points Possible	100	100	100	

\* These characteristics are not assessed in coastal streams.

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NC DWQ Stream Identification Form Version 4.11

sna0007

Date: 7/30/14	Project/Site:	ACP	Latitude:35	820A()	
Evaluator: K, MU(Philey	County: NAS			8,03115	
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		n <del>ation (</del> circle one) rmittent Perennial	Other Bailey, NC e.g. Quad Name:		
A. Geomorphology (Subtotal =)	Absent	Weak	Moderate	Strong	
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	(2)	3	
2. Sinuosity of channel along thalweg	0	1	(2)	3 3	
3. In-channel structure: ex. riffle-pool, step-pool,	0	(1)	2	3	
ripple-pool sequence 4. Particle size of stream substrate	0		(2)		
5. Active/relict floodplain	0	1	(2)	3	
6. Depositional bars or benches	(0)	1		3	
7. Recent alluvial deposits	0	(1)	2	3	
8. Headcuts	(0)		2	3	
9. Grade control	0	(0.5)	1	1.5	
10. Natural valley	0	(0.5)	1	1.5	
11. Second or greater order channel		o € 0)	Yes		
<sup>a</sup> artificial ditches are not rated; see discussions in manual	**		163		
B. Hydrology (Subtotal = 9)					
12. Presence of Baseflow	0	1	(2)	3	
13. Iron oxidizing bacteria	0	(1)	2	3	
14. Leaf litter	(1.5)		0.5	0	
15. Sediment on plants or debris		0.5	 	1.5	
16. Organic debris lines or piles	0	(0.5)	1	1.5	
17. Soil-based evidence of high water table?	+	lo = 0	Yes		
C. Biology (Subtotal = 5.5)					
18. Fibrous roots in streambed	3	(2)	1	0	
19. Rooted upland plants in streambed	3	2	1	0	
20. Macrobenthos (note diversity and abundance)	<u> </u>	1	2	3	
21. Aquatic Mollusks	$\overline{0}$		2	3	
22. Fish		0.5	1	1.5	
23. Crayfish		0.5	1	1.5	
24. Amphibians	0	(0.5)	1	1.5	
25. Algae	- O	0.5	1	1.5	
26. Wetland plants in streambed		FACW = 0.75; Of	BL = 1.5 Other =		
*perennial streams may also be identified using other method	ds. See p. 35 of man			<u> </u>	
Notes:		· · · · ·			
Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch: Sketch	07				
OHWM: 2 X BONK: S					



Waterbody snao007 facing south upstream.



Waterbody snao007 facing north downstream.

Photo Sheet 1 of 2



Waterbody snao007 facing west across channel.

· · · · · · · · · · · · · · · · · · ·	a Sheet					
Survey Description					· · · · ·	
Project Name:	Waterbody I	Name:	Wa	terbody ID:	Date	, ,
Southeastern Reliability	Unr	lamed Pond	C	ACODO	4 7	/31/14
State: County:	:	Company:		mber Initials:	Photos:	/
NC NO	ash	ESI	J6,	$\ltimes M$	Facing	south
Tract Number(s):		Nearest Milepost:		ociated Wetland	1. /	
18-209		354.2	l v	Inadod	\$5	
Survey Type: (check one)	⊠Centerline □	Re-Route DAcces		DOther:		
Physical Attributes					·	
Waterbody Type:	Natural Pond La	ake 🗆 Reservoir 🗆 Impou	indment	xbow 🗇 Other:		·
	ermanently Flooded	Semipermanently Floodec	회 🗆 Season	ally Flooded	Temporarily Fl	ooded
	DHWM Indicator: check all that apply)	Clear line	Shelving	□Wrested	⊡Scouring	t DWater
Height: NA #	/	on bank		vegetation	្រចបារពរម្ម	staining
<u></u>	Bent, matted, or r vegetation		□Litter and debris	□Abrupt plan community ch	t ⊟Soil charad ange	cteristic change
Depth of Water:	Bank hei	ght (average):		Bank slope (ave	rage):	
N/A□()ft.		ft.			45_degree	es -
Qualitative Attributes				·	· · · ·	
Water Appearance: (check one)	ater 🖄 Clear 🗆	ITurbid □Sheen on surface	□Surface scum	□Aigal □ mats	Other:	
Substrate: Dedri (check all that apply)	rock 🗆 Boulder 🗔 (	Cobble 🗌 Gravel 🗌 Sa	and D Silt/	clay 🗆 Organic	Other:	
% of Substrate:	%%	%%	<u>% (U()</u>	_%%	%	
-	Vegetative Layers:					
750 ft.	(check all that apply)	Trees:	🗹 Saplii	ngs/Shrubs:	Herbs	
π						
N/A□ <b>*</b>	Avg. DBH of Dominan (approx.)	nts: <u>15</u> in.	6	_in.	<u>NA</u> in.	
N/A⊡ ◀⁵ Dominant Bank Vegetation (	(approx.) (list):					
NAD ** Dominant Bank Vegetation ( ACEV \UDYLA	(ispprox.) (iist): $h, \leq a l'i \chi$	nigra, liqui	idambe	av sigra	Citlan	
N/A□ ** Dominant Bank Vegetation ( A C C V \ ( いしてん) Aquatic Habitats (ex. submerged	(approx.) (iist): $h_{j} \leq \partial l_{j} \times dv$	Nigro, lilli;	i da Mba s, large submerged v	av sigra	Citlan	
NAD ** Dominant Bank Vegetation ( A CEV YUDYUM Aquatic Habitats (ex. submerged SUDWYGE S	(approx.) (list): $h \leq O(1 \times 10^{-1}) \times 10^{-1}$ (list): $h \leq O(1 \times 10^{-1}) \times 10^{-1}$	nigra, liqui	i da Mba s, large submerged v	av sigra	Citlan	
NAD * Dominant Bank Vegetation ( A CEV VUDYU Aquatic Habitats (ex submerged SUBNEVGE & Aquatic Organisms Observe	(approx.) (list): $h \leq O(1 \times 10^{-1}) \times 10^{-1}$ (list): $h \leq O(1 \times 10^{-1}) \times 10^{-1}$	Nigro, lilli;	i da Mba s, large submerged v	av sigra	Citlan	
NAD ★ Dominant Bank Vegetation ( A C C V V N D V M Aquatic Habitats (ex. submerged SM D N V B C Aquatic Organisms Observe N A	(approx.) ( <i>list</i> ): $h \leq O(1 \times 10^{10})$ $h = O(1 \times 10^{10})$ $h = O(1 \times 10^{10})$ ed ( <i>list</i> ):	Nigro , Lilli,	i da Mba s, large submerged v	av sigra	Citlan	
N/A□ * Dominant Bank Vegetation ( A C C V V N D Y M Aquatic Habitats (ex. submerged SMB N L Y G L Aquatic Organisms Observed N A T&E Species Observed ( <i>list</i> ):	(approx.) ( <i>list</i> ): $h \leq O(1 \times 10^{10})$ $h = O(1 \times 10^{10})$ $h = O(1 \times 10^{10})$ ed ( <i>list</i> ):	Nigro , Lilli,	i da Mba s, large submerged v	av sigra	Citlan	
NAD ★ Dominant Bank Vegetation ( A C C V V N D V N Aquatic Habitats (ex. submerged SM D N V B C Aquatic Organisms Observe N A	(approx.) (iist): $M \leq O   1 \times O   0 + E$ ed (list): :	(1918), 11(11; n, overhanging banks/roots, leaf packs EXCONDATED P	i da Mba s, large submerged v	av sigra	Citlan	
NAD ** Dominant Bank Vegetation ( A CEV VOBYAN Aquatic Habitats (ex. submerged SUBME VOL Aquatic Organisms Observed M A T&E Species Observed ( <i>list</i> ): MA	(approx.) ( <i>list</i> ):	(1918), 11(11; n, overhanging banks/roots, leaf packs EXCONDATED P	i da Mba s, large submerged v	av sigra	Citlan	
NAD Dominant Bank Vegetation ( A CEV VOBYA Aquatic Habitats (ex. submerged SABALYGE & Aquatic Organisms Observed M A T&E Species Observed ( <i>list</i> ): MA Disturbances (ex: livestock acc	(approx.) ( <i>list</i> ): hd or emerged aquatic vegetation where of the constraints of the c	n, overhanging banks/roots, leaf packs =XCOND+ed PC 	i da Mba s, large submerged v	av sigra	Citlan	

Waterbody ID: ONA0004 а High Quality: Natural, natural bank vegetation around entire waterbody; 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 by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or bank 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: 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 locations, survey boundary, and IDs of associated features) ONQOQ WNAOODS 4 Old smithfield Road 

Environmental Field Surveys Open Water Point Photo Page



**Open Waterbody onao004 facing south.** 

### Open Waterbody Data Sheet

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Survey Description	ว่ท							
Project Name:		Waterbody Na			Wa	terbody ID:	Date	»: / /
Southeastern Reli			amed "	Pond		)naoøø		7/30/14
State:	County:	C	Company:			ember Initials:	Photos:	
NC	Nash		EST			KM	facing	NONTH
Tract Number(s):		1	Nearest Milepo:			sociated Wetland		
18-209			354	14	<u> </u>	<u>Unacor</u>	<u> </u>	
Survey Type: (check one)	⊠Centerlin	e 🗆 Re	e-Route	□Access Ro	ad	Other:		
Physical Attribut	es			· '•	-			
Waterbody Type: 🖊	k Pond 🛛 Natura	I Pond 🗆 Lak	e 🗇 Reservoir	Impoundme	ent 🗆 O	xbow 🖸 Other:		
Hydrologic Regime:	Permanently	Flooded 🛛	Semipermanen	tiy Flooded	3 Season	ally Flooded	] Temporarily Fl	ooded
онwм <sup>Height:</sup> NA <sub>ft.</sub>	OHWM Indi (check all that a)		Clear on bank	line □She	elving	□Wrested vegetation		Water staining
			ssing ⊟Wrack line	⊟Litti debris	er and S	□Abrupt plar community cl	nt ⊡Soil charae nange	cteristic change
Depth of Water:		Bank heigh	it (average):	<u>.</u>		Bank slope (ave	erage):	
_ <u>_</u> [5 №/A□	<u>,</u> ft.		6	<u> </u>			<u> </u>	<b>!S</b>
Qualitative Attrib	utes							
Water Appearance: (check one)	□No water D	Clear DT		_	Surface um	□Algal E mats	]Other:	
Substrate: (check all that apply)	Bedrock DB	oulder 🗆 Co	obble 🛛 Grav	rel 🖆 Sand	E Silt/	clay 🗆 Organic	Other:	
% of Substrate:	%	%	%	<u>_% _30</u> %	07	_%%	%	
Width of Riparian Zo		-			/		/	
2.0 ft	(check all that	t apply)	Trees	:	2 Sapli	ngs/Shrubs:	<b>D</b> Herbs	
N/A 🗆 🌴	Avg. DBH (approx.)	of Dominants	» <u>12</u>	_in.	:2	in.	NA in.	
Dominant Bank Vege	ACEY VU	tala i bram	nigra, Li	quidance	ar-	Styracia	tina, Li	riodendud
Aquatic Habitats (ex.	submerged or emerged a	quatic vegetation, c	verhanging banks/ro	ots, leaf packs, large	submerged v	wood, riffies, deep pools	s, etc.)"	
EXCAVAT	et pon	d, sul	onerge	1 wood	1			
Aquatic Organisms						• <u>•</u> ••••••••••••••••••••••••••••••••••		···
T&E Species Observ	und (list):							
NA	eu (1151).							
Disturbances (ex: live	estock access, manur	e in waterbody, w	vaste discharge pi	pes):				
	ted pur	d						
Waterbody is: (check one)	🗆 Natura	I 🗇 Artifici	al, man-made	Manipulat	led			
Waterbody Quality * (check one)	: High	C Moderat	e 🖬 Low					

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Waterbody ID:	
GNA0003	
* High Quality: Natural, natural bank vegetation around entire waterbody; banks stable and protected by roots; water color is clear to tea-colore barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.	
Moderate Quality: Altered by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or bank vege only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; barriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.	atation minor
Low Quality: Rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel width on each side; lack of regener filtering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvious pollutants (algal mats, surface s surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance from livestock or man.	ration; scum,
Notes:	
Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point locations, survey boundary, and IDs of associated to	features)
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Onacopp3	
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(NHM)	ĺ
Tai	
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Juon of	
1 1 1 1 onav 0.02	

Environmental Field Surveys Open Water Point Photo Page



Open Waterbody onao003 facing north.

#### Open Waterbody Data Sheet

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Survey Description	on						
			·				
Project Name:		Waterbody Nam	16:	Ň	Waterbody ID:	Dat	$\frac{1}{2}$
Southeastern Reli	ability	NA			Ongoøø		150/H
	County:		mpany:		Member Initials:	Photos:	north
NC	Nash		ESI	56	s, KM	Facino	North
Tract Number(s):		Ne	arest Milepost:	1	Associated Wetland	ID(s):	
18-212	L		354,5		WNQOØR	14	
Survey Type: (check one)	⊠Centerlin	e ⊡Re-f	Route 🗆 🗠	ccess Road	Dother:		
Physical Attribut	es			· · · ·			
Waterbody Type: 📝	/						
			🗆 Reservoir 🗆 Im		Oxbow LI Other:		
Hydrologic Regime:	I Permanently	Flooded D S	emipermanently Floo	oded 🗆 Sea:	sonally Flooded	Temporarily F	looded
OHWM	OHWM Indi (check all that a		D Clear line		[]\A/reated		thistor
Height:		PP-31	on bank	□Shelving	□Wrested vegetation	Scouring	g DWater staining
		it, matted, or miss	ing	Litter and	□ Abrunt plant	[]]Soil chara	cteristic change
	vegeta		line	debris	community cha		oronario onarige
Depth of Water:		Bank height	(average):		Bank slope (aver	ade):	
10	) <sub>ft.</sub>	Dank norgin	S <sub>ft.</sub>		Bank Slope (urei	<u>30</u> degree	
	<u> </u>		<u> </u>		-		
Qualitative Attrik Water Appearance: (check one)		Clear DTur	bid □Sheen on surface	⊡Surfac scum	e □Algal □ mats	Other:	
Substrate: (check all that apply)	Bedrock E	Boulder 🗆 Cob	ble 🗌 Gravel 🛛		ill/ clay 🖾 Organic	Other:	
% of Substrate:	%	%	_%% .	<u> </u>	$\mathcal{V}_{\%}$ %	%	
Width of Riparian Zo		ve Layers:			777 - 2012 A		
20	(check all tha	it apply)	Trees:	dSa	plings/Shrubs:	Herbs	
י שכ <del>ו</del>							
<u>30 ft</u> .		I of Dominants:	$12_{\text{in}}$		in.		
N/A🗆 🔦	Avg. DBH		<u>. 12 in:</u>		in.	NA in.	
N/A🗆 🌁	Avg. DBH			ifine		NA in.	cer raba
	Avg. DBH (approx.) etation (list): בי גיח פת גע	anidona Microste	ar styrac egium vin			<u>NA</u> in. 980/A	cer rabri
N/Aロ <b>*</b> Dominant Bank Veg しうのよイロへへ Aquatic Habitats (ex	Avg. DBH (approx.) etation (list): しい らいたんらと	an (dombo MiCNSte	av ちちらんの 2giun vin rhanging banks/roots, leaf	packs, large submerg		<u>NA</u> in. 980/A	cer rabi
N/AC * Dominant Bank Veg LiguSt (UM Aquatic Habitats (ex EX CAVA* e	Avg. DBH (approx.) etation (list): Sinth St submerged or emerged a	an (dombo MiCNSte	ar styrac egium vin	packs, large submerg		<u>NA</u> in. 980/A	cer rabr
N/AD * Dominant Bank Veg LiguSt (UM Aquatic Habitats (ex EXCAVA + Aquatic Organisms	Avg. DBH (approx.) etation (list): Sinth St submerged or emerged a	an (dombo MiCNSte	av ちちらんの 2giun vin rhanging banks/roots, leaf	packs, large submerg		<u>NA</u> in. 980/A	cer rabi
N/A□ ★ Dominant Bank Veg LiguStrum Aquatic Habitats (ex EXCAVA+ e Aquatic Organisms Frog S	Avg. DBH (approx.) etation (list): $\sum_{i=1}^{n}$ submerged or emerged a e $\sum_{i=1}^{n} \frac{p_{i}}{p_{i}}$ Observed (list):	an (dombo MiCNSte	av ちちらんの 2giun vin rhanging banks/roots, leaf	packs, large submerg		<u>NA</u> in. 980/A	cer rabri
N/AD Dominant Bank Veg Ligu Strucov Aquatic Habitats (ex EX Carlot e Aquatic Organisms Frog S T&E Species Observ	Avg. DBH (approx.) etation (list): $\sum_{i=1}^{n}$ submerged or emerged a e $\sum_{i=1}^{n} \frac{p_{i}}{p_{i}}$ Observed (list):	an (dombo MiCNSte	av ちちらんの 2giun vin rhanging banks/roots, leaf	packs, large submerg		<u>NA</u> in. 980/A	cer rabr
N/AD Dominant Bank Veg LiguStrum Aquatic Habitats (ex EXCAVAT & Aquatic Organisms Frog S T&E Species Obsen NA	Avg. DBH (approx.) etation (list): $\sum_{i=1}^{n}$ submerged or emerged a e $\mathcal{L}$ $\mathcal{POOL}$ Observed (list): ved (list):	anidense Microste aquatic vegetation, ove SUbmet	ar 5tg(ac 29icim vin orhanging banks/roots, leaf ged World	packs, large submerg		<u>NA</u> in. 980/A	Cer rabri
N/AD Dominant Bank Veg Light Yur Aquatic Habitats (ex EXCAVATE Aquatic Organisms Frog S T&E Species Observ	Avg. DBH (approx.) etation (list): $\sum_{i=1}^{n}$ submerged or emerged a e $\mathcal{L}$ $\mathcal{POOL}$ Observed (list): ved (list):	anidense Microste aquatic vegetation, ove SUbmet	ar 5tg(ac 29icim vin orhanging banks/roots, leaf ged World	packs, large submerg		<u>NA</u> in. 980/A	cer rabr
N/AD Dominant Bank Veg Li 91 St VUM Aquatic Habitats (ex EX CAVAL Aquatic Organisms FY99 S T&E Species Obsen N A Disturbances (ex: IIV EX CAVAL	Avg. DBH $(approx.)$ etation (list): $\leq \uparrow P \land f \land$	a n i domba M i C N St 4 aquatic vegetation, ove SUID (net re in waterbody, was	ar 5tg(ac 29icim vin orhanging banks/roots, leaf ged World	packs, large submerg		<u>NA</u> in. 980/A	cer rabri
N/AD Dominant Bank Veg LiguStrum Aquatic Habitats (ex EXCAVAT Aquatic Organisms Frog S T&E Species Obsen NA Disturbances (ex: liv	Avg. DBH $(approx.)$ etation (list): $\leq \uparrow P \land f \land$	anidona Microste aquatic vegetation, ove Scibre Scibre	ste discharge pipes):	packs, large submerg		<u>NA</u> in. 980/A	cer rabr

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	Waterbody ID:	
	ONACOBEZ	-
High Quality: Natural, natural bank vegetation around entire waterbody; banks stable and protected by roc parriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance	is; water color is clear to tea-colored; no e by livestock or man.	$\left( \right)$
Moderate Quality: Altered by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered parriers to fish movement; fair aquatic habitat; minimum disturbance by livestock or man.	side; filtering function or bank vegetation with greenish film; moderate odor; minor	
Low Quality: Rip rap and channelization excessive; natural vegetation less than 1/3 of the active channel illering function severely compromised; banks unstable (eroding); water color is muddy and turbid; obvio surface sheen); heavy odor; severe barriers to fish movement; little to no aquatic habitat; severe disturbance	is pollutants (algal mats, surface scum	
otes:	· · · · · · · · · · · · · · · · · · ·	
aterbody Sketch (Include north arrow, centerline, distance from centerline, data point locations, surve	boundary, and IDs of associated features	-
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Environmental Field Surveys Open Water Point Photo Page



Open Waterbody onao002 facing north.

DWQ #\_

5na0006

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Site #\_\_\_\_\_ (indicate on attached map)

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STREAM QUALITY ASSESSMENT WORKSHEET
Provide the following information for the stream reach under assessment:
1. Applicant's name: DUMINION 2. Evaluator's name: K. MURPHICY
3. Date of evaluation: 7/30/14 4. Time of evaluation: 12:00
5. Name of stream: UNT to Toisnot Swamp 6. River basin: NEUSE
7. Approximate drainage area: 15 acres 8. Stream order:
9. Length of reach evaluated: <u>SOFF</u> 10. County: <u>NASK</u>
11. Site coordinates (if known): prefer in decimal degrees. 12. Subdivision name (if any): NA
Latitude (ex. 34.872312): 35.81742 Longitude (ex77.556611): -78,03373
Method location determined (circle): GPS) Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other 13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location): LOCATED between Coreen PUAD LOOP ROAD OND OND SMITHFIELD ROAD,
14. Proposed channel work (if any): TBD
15. Recent weather conditions: SUNNY
16. Site conditions at time of visit: Man-make alst
17. Identify any special waterway classifications known:Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource WatersNutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation point? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES (NO) 20. Does channel appear on USDA Soil Survey? YES (NO)
21. Estimated watershed land use:% Residential% Commercial% Industrial 70% Agricultural
<u>30</u> % Forested% Cleared / Logged% Other ()
22. Bank full width: $10$ Ft 23. Bank height (from bed to top of bank): $2$ Ft.
24. Channel slope down center of stream:Flat (0 to 2%)Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity: Very sinuous Occasional bends Frequent meander Very sinuous Braided channel
Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality.
Total Score (from reverse): 25 Comments: <u>ditch between Ag Fields</u>
Evaluator's Signature Kuin WHWM Date 7/30/14
This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in gathering the data required by the United States Army Corps of Engineers to make a preliminary assessment of stream quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change – version 06/03. To Comment, please call 919-876-8441 x 26.

4.1	AN INCOME		ECOREG	ION POINT	RANGE	
	,并称 第一	CHARACTERISTICS	Coastal	Piedmont	Mountain	SCORE
	1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0 - 5	0-4	0 – 5	1
新聞	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0 – 5	0 – 5	0
	3	<b>Riparian zone</b> (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0 – 5	
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0 – 4	2
PHYSICAL	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0 – 4	0
<b>VSIC</b>	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	$\bigcirc$
EH	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0-4	0-2	Ò
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	0
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	$\bigcirc$
all a	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0 - 5	0 - 4	0-4	0
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA****	0-4	0-5	
<b>STABILITY</b>	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	5
	13	<b>Presence of major bank failures</b> (severe erosion = 0; no erosion, stable banks = max points)	0-5	0 - 5	0-5	4.
[AB]	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	1
S	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0 - 4	0-5	5
	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0 – 5	0-6	0
ABITAT	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	3.
<b>LAB</b> ]	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	0
	, 19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	T NA*	0-4	0-4	
	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0 - 5	0-5	0
0GY	- 21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
IOL	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
# BIOLOGY	23	Evidence of wildlife use (no evidence = 0: abundant evidence = max points)	0-6	0 - 5	0-5	3
		Total Points Possible	100	100	100	
		Hermitical Sciences TOTAL SCORE (also enter on	first page)		n in the second s	25

\* These characteristics are not assessed in coastal streams.

snao 006 NC DWQ Stream Identification Form Version 4.11 Latitude: 35, 8172 Date: 7/30/14 Project/Site: ACP Evaluator: K, MU (Phre-Longitude: -78,03378 County: NaSh Total Points: Other Bailey, NC Stream Determination (circle one) Stream is at least intermittent Ephemeral Intermittent Perennial e.g. Quad Name: if  $\geq$  19 or perennial if  $\geq$  30\* A. Geomorphology (Subtotal = Absent Weak Moderate Strong 1ª. Continuity of channel bed and bank 0 1  $\left( 2 \right)$ 3 2. Sinuosity of channel along thalweg 5 1 2 3 3. In-channel structure: ex. riffle-pool, step-pool, Ο) 1 2 3 ripple-pool sequence (2)4. Particle size of stream substrate 0 1 ` 3 5. Active/relict floodplain (0)1 2 3 6. Depositional bars or benches (0) 1 2 3 (ō, 7. Recent alluvial deposits 1 2 3 8. Headcuts (0) 1 2 3 9. Grade control (ö) 0.5 1 1.5 10. Natural valley (0)0.5 1 1.5 11. Second or greater order channel No = (0)Yes = 3 artificial ditches are not rated; see discussions in manual 5.51 B. Hydrology (Subtotal = 12. Presence of Baseflow 0 (1)2 3 13. Iron oxidizing bacteria  $\left( 0 \right)$ 1 2 3 14. Leaf litter 1.5 i 0.5 0 15. Sediment on plants or debris 0 0.5 1.5 1 16. Organic debris lines or piles 75 0.5 1 1.5 17. Soil-based evidence of high water table? No = 0Yes = 3 C. Biology (Subtotal = 18. Fibrous roots in streambed 3 2 11 0 19. Rooted upland plants in streambed 3 2 1 0 20. Macrobenthos (note diversity and abundance) 6 1 3 2 21. Aquatic Mollusks  $\left( 0 \right)$ 1 2 3 Ø 22. Fish 0.5 1 1.5 23. Crayfish 0.5 1 1.5 24. Amphibians 70) 0.5 1 1.5 25. Algae 6 0.5 1 1.5 26. Wetland plants in streambed FACW = 0.75; OBL = 1.5 Other  $\neq 0$ \*perennial streams may also be identified using other methods. See p. 35 of manual. ditCN between Notes: FIELDS OHWM present A٩ Sketch: 5000006 2 BONK:8 OHWM!



Waterbody snao006 facing north upstream.



Waterbody snao006 facing south downstream.



Waterbody snao006 facing west across channel.

DWQ #\_

sna0005

Site # (indicate on attached map)
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STREAN	A QUALITY A	SSESSMENT WOR	KSHEET	
Provide the following information for	the stream reach und	er assessment:	_	
1. Applicant's name: Duminiun		2. Evaluator's name: Ke	Murphrey	
3. Date of evaluation: 7/30/14	L	4. Time of evaluation: 11	00	
5. Name of stream: UN+ to Beave		6. River basin: NEUS	£	
7. Approximate drainage area: 10	acres	8. Stream order: Ø		
9. Length of reach evaluated: 50 \$		10. County: NASh		
11. Site coordinates (if known): prefer	in decimal degrees.	12. Subdivision name (if a	ny): <b>//A</b>	,
Latitude (ex. 34.872312): 35, 81324		Longitude (ex. –77.556611):	<u>78.03709</u>	1
Method location determined (circle): GPS 13. Location of reach under evaluation ( NW of Old Smithfield R	note nearby roads and	Aerial) Photo/GIS Other GIS	Other	
14. Proposed channel work (if any):	3D			
15. Recent weather conditions: <u>SUCC</u>				<u> </u>
16. Site conditions at time of visit:	an-made ditch			
17. Identify any special waterway classif			WatersEss	ential Fisheries Habitat
Trout WatersOutstanding Re	source Waters	Nutrient Sensitive Waters	Water Supply Y	Watershed(I-IV)
18. Is there a pond or lake located upstre	am of the evaluation p	oint? YES NO If yes, est	timate the water surf	face area:
19. Does channel appear on USGS quad	map? YES 📎	20. Does channel appear o	n USDA Soil Surve	y? YES NO
21. Estimated watershed land use: <u>l</u>		% Commercial	% Industrial	80 % Agricultural
$\frac{d}{d}$	ℓ_% Forested	% Cleared / Logged	% Other (	)
		23. Bank height (from bed		
24. Channel slope down center of stream	n:Flat (0 to 2%)	Gentle (2 to 4%)	_Moderate (4 to 10%	%)Steep (>10%)
25. Channel sinuosity:Straight	_Occasional bends	Frequent meander	Very sinuous	Braided channel
Instructions for completion of works location, terrain, vegetation, stream class to each characteristic within the rang characteristics identified in the workshe characteristic cannot be evaluated due comment section. Where there are obv into a forest), the stream may be divided reach. The total score assigned to a str highest quality.	sification, etc. Every e shown for the econ eet. Scores should re- to site or weather cor ious changes in the ch d into smaller reaches ream reach must range	characteristic must be score region. Page 3 provides a flect an overall assessment of aditions, enter 0 in the scori aracter of a stream under re- that display more continuity between 0 and 100, with a	d using the same eco a brief description of the stream reach ing box and provide view (e.g., the stream , and a separate form a score of 100 repre	oregion. Assign points of how to review the under evaluation. If a e an explanation in the m flows from a pasture n used to evaluate each senting a stream of the
Total Score (from reverse): <u>28</u>	Comme	nts: <u>ditch</u> adsace	<u>ot to Ag E</u>	ield
		·····		· · · · · · · · · · · · · · · · · · ·
Evaluator's Signature Kell This channel evaluation form is inter gathering the data required by the quality. The total score resulting fu particular mitigation ratio or require	nded to be úsed only United States Army rom the completion of	as a guide to assist landow Corps of Engineers to ma of this form is subject to	ake a preliminary USACE approval	nental professionals in assessment of stream and does not imply a

1     (no flow       2     (extensive       3     (no buffe       4     Evide       5     (no discharge       6     (no flood       7     (deeply en       8     (no wetlar	nce of flow / persistent pools in stream or saturation = 0; strong flow = max points) Evidence of past human alteration we alteration = 0; no alteration = max points) Riparian zone r = 0; contiguous, wide buffer = max points) ence of nutrient or chemical discharges discharges = 0; no discharges = max points) Groundwater discharge = 0; springs, seeps, wetlands, etc. = max points) Presence of adjacent floodplain plain = 0; extensive floodplain = max points) Entrenchment / floodplain access trenched = 0; frequent flooding = max points) Presence of adjacent wetlands dds = 0; large adjacent wetlands = max points)	$ \begin{array}{c} 0-5 \\ 0-6 \\ 0-6 \\ 0-5 \\ 0-3 \\ 0-4 \\ 0-5 \\ \end{array} $	Piedmontly $0-4$ $0-5$ $0-4$ $0-4$ $0-4$ $0-4$ $0-4$ $0-4$ $0-4$ $0-4$	$     \begin{array}{r}         Mountain \\         0-5 \\         0-5 \\         0-5 \\         0-4 \\         0-4 \\         0-2 \\         \end{array} $	
1     (no flow       2     (extensive       3     (no buffe       4     Evide       5     (no discharge       6     (no flood       7     (deeply en       8     (no wetlar	or saturation = 0; strong flow = max points) Evidence of past human alteration re alteration = 0; no alteration = max points) Riparian zone r = 0; contiguous, wide buffer = max points) ence of nutrient or chemical discharges discharges = 0; no discharges = max points) Groundwater discharge = 0; springs, seeps, wetlands, etc. = max points) Presence of adjacent floodplain plain = 0; extensive floodplain = max points) Entrenchment / floodplain access trenched = 0; frequent flooding = max points) Presence of adjacent wetlands ds = 0; large adjacent wetlands = max points)	0-6 $0-6$ $0-5$ $0-3$ $0-4$	0-5 $0-4$ $0-4$ $0-4$	0-5 $0-5$ $0-4$ $0-4$	0 1 3 1
2       (extensive)         3       (no buffe)         4       Evide         5       (no discharge)         6       (no flood)         7       (deeply en)         8       (no wetlar)	realteration = 0; no alteration = max points)         Riparian zone         r = 0; contiguous, wide buffer = max points)         ence of nutrient or chemical discharges         e discharges = 0; no discharges = max points)         Groundwater discharge         = 0; springs, seeps, wetlands, etc. = max points)         Presence of adjacent floodplain         plain = 0; extensive floodplain = max points)         Entrenchment / floodplain access         trenched = 0; frequent flooding = max points)         Presence of adjacent wetlands         dds = 0; large adjacent wetlands = max points)	0-6 $0-5$ $0-3$ $0-4$	0 - 4 $0 - 4$ $0 - 4$	0-5 $0-4$ $0-4$	3
Image: constraint of the second se	r = 0; contiguous, wide buffer = max points) ence of nutrient or chemical discharges e discharges = 0; no discharges = max points) Groundwater discharge = 0; springs, seeps, wetlands, etc. = max points) Presence of adjacent floodplain plain = 0; extensive floodplain = max points) Entrenchment / floodplain access trenched = 0; frequent flooding = max points) Presence of adjacent wetlands dds = 0; large adjacent wetlands = max points)	0-5 $0-3$ $0-4$	0 - 4 0 - 4	0 - 4 0 - 4	3
4       Evide (extensive         5       (no discharge         6       (no flood         7       (deeply en         8       (no wetlar	ence of nutrient or chemical discharges a discharges = 0; no discharges = max points) Groundwater discharge = 0; springs, seeps, wetlands, etc. = max points) Presence of adjacent floodplain plain = 0; extensive floodplain = max points) Entrenchement / floodplain access trenched = 0; frequent flooding = max points) Presence of adjacent wetlands dds = 0; large adjacent wetlands = max points)	0-3 0-4	0-4	0-4	3
5       (no discharge         6       (no flood         7       (deeply en         8       (no wetlar	Groundwater discharge = 0; springs, seeps, wetlands, etc. = max points) Presence of adjacent floodplain plain = 0; extensive floodplain = max points) Entrenchment / floodplain access trenched = 0; frequent flooding = max points) Presence of adjacent wetlands uds = 0; large adjacent wetlands = max points)	0-4			
Contraction of the second seco	Presence of adjacent floodplain plain = 0; extensive floodplain = max points) Entrenchment / floodplain access trenched = 0; frequent flooding = max points) Presence of adjacent wetlands ds = 0; large adjacent wetlands = max points)		0-4	0-2	
8 (no wetlar	Entrenchment / floodplain access trenched = 0; frequent flooding = max points) Presence of adjacent wetlands ds = 0; large adjacent wetlands = max points)	0 – 5		-	O
8 (no wetlar	Presence of adjacent wetlands ds = 0; large adjacent wetlands = max points)		0-4	0-2	2.
		0 – 6	0 - 4	0 - 2	
	Channel sinuosity annelization = 0; natural meander = max points)	0 – 5	0-4	0-3	2.
10 (extensive d	Sediment input eposition= 0; little or no sediment = max points)	0 – 5	0-4	0-4	0
Size	<b>&amp; diversity of channel bed substrate</b> ogenous = 0; large, diverse sizes = max points)	NA*	0 - 4	0 5	
12 Evi	dence of channel incision or widening ncised = 0; stable bed & banks = max points)	0 - 5	0-4	0-5	4
13 (severe eros	Presence of major bank failures sion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	4
	Root depth and density on banks roots = 0; dense roots throughout = max points)	0-3	0 - 4	0-5	1.
5245 S	agriculture, livestock, or timber production ntial impact =0; no evidence = max points)	0-5	0-4	0-5	5.
	nce of riffle-pool/ripple-pool complexes oples or pools = 0; well-developed = max points)	0-3	0 – 5	0-6	0
17 (little or no h	Habitat complexity abitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	.0
<b>9</b> 18	Canopy coverage over streambed vegetation = 0; continuous canopy = max points)	0-5	0 – 5	0-5	2
19 (deet	Substrate embeddedness bly embedded = 0; loose structure = max)	NA*	0-4	0-4	
	nce of stream invertebrates (see page 4) ce = 0; common, numerous types = max points)	0-4	0 – 5	0-5	0
<sup>21</sup> (no evident	Presence of amphibians ce = 0; common, numerous types = max points)	0-4	0-4	0-4	0
Q 22 (no evident	Presence of fish ce = 0; common, numerous types = max points)	0-4	0-4	0-4	0
22	Evidence of wildlife use dence = 0; abundant evidence = max points)	0-6	0 - 5	0-5	1.
	Total Points Possible	100	- 	100	
	TOTAL SCORE (also enter on f				$\Box \gamma c$

### STREAM QUALITY ASSESSMENT WORKSHEET

\* These characteristics are not assessed in coastal streams.

sna0005

### NC DWQ Stream Identification Form Version 4.11

Date: 7/30/14	Project/Site: ACP	Latitude:35,8 324
Evaluator: K. MUYP WEG	County: NOSK	Longitude:-78,03709
Total Points: Stream is at least intermittent if $\geq$ 19 or perennial if $\geq$ 30*I	Stream Determination (circle one)	Other Bailey, NC e.g. Quad Name:
1. 6		

A. Geomorphology (Subtotal = $()$ )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
<ol> <li>In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence</li> </ol>		1	2	3
4. Particle size of stream substrate	0	$\bigcirc$	2	3
5. Active/relict floodplain	(Q)	1	2	3
6. Depositional bars or benches		1	2	3
7. Recent alluvial deposits	$(\varphi)$	1	2	3
8. Headcuts		1	2	3
9. Grade control	(0)	0,5	1	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel	No	o≠ò)	Yes	= 3
	*			

<sup>a</sup> artificial ditches are not rated; see discussions in manual ≁ )

B, H	vdrol	logy	(Subtotal	=	

Notes:

12. Presence of Baseflow	$\bigcirc$	1	2	3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	()	0.5	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	No = 0		$Yes \neq 3$ )	
C. Biology (Subtotal =)			•	0
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	3	2	(1)	0
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. Crayfish	$\bigcirc$	0.5	1	1.5
24. Amphibians	Q	0.5	1	1.5
25. Algae	e e e e e e e e e e e e e e e e e e e	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other $\neq 0$ )			

\*perennial streams may also be identified using other methods. See p. 35 of manual. OHWM present

CI

Sketch: U 5ha0005 L n W WNaODO3 4 sna0 004 1 Bank: 4ft HWM: width 2 Ft width



Waterbody snao005 facing north upstream.



Waterbody snao005 facing south downstream.



Waterbody snao005 facing west across channel.

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5na0004

Site #\_\_\_\_ (indicate on attached map)

STREAM QUALITY A	SSESSMENT WORKSHEET			
Provide the following information for the stream reach und	er assessment:			
1. Applicant's name: DOminio	2. Evaluator's name: K. MULPhrey			
3. Date of evaluation: 1/30/14	4. Time of evaluation: $9:30$			
5. Name of stream: Un+ to Beaverdam Creek	6. River basin: NEUSe			
7. Approximate drainage area: 15 acres	8. Stream order: 🔿			
9. Length of reach evaluated: $50 FE$	10. County: NOSh			
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): NA			
Latitude (ex. 34.872312): 35, 81304	Longitude (ex77.556611): -78,03725			
Method location determined (circle): GPS Topo Sheet Ortho (. 13. Location of reach under evaluation (note nearby roads and	Aerial) Photo/GIS Other GIS Other landmarks and attach map identifying stream(s) location):			
	Road and W. Hornes Church Road.			
14. Proposed channel work (if any): TBD	· · · · · · · · · · · · · · · · · · ·			
15. Recent weather conditions: SUNNY	· · · · · · · · · · · · · · · · · · ·			
16. Site conditions at time of visit: Undish-rbed				
	Section 10Tidal WatersEssential Fisheries Habitat			
-	Nutrient Sensitive WatersWater Supply Watershed(I-IV)			
18. Is there a pond or lake located upstream of the evaluation p	point? YES NO If yes, estimate the water surface area:			
19. Does channel appear on USGS quad map? YES NO	20. Does channel appear on USDA Soil Survey? YES NO			
21. Estimated watershed land use:% Residential	% Commercial% Industrial 60% Agricultural			
	% Cleared / Logged% Other (			
22. Bankfull width: 7 +4	23. Bank height (from bed to top of bank):			
24. Channel slope down center of stream:Flat (0 to 2%)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)			
25. Channel sinuosity:StraightOccasional bends	Frequent meanderVery sinuousBraided channel			
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the eco characteristics identified in the worksheet. Scores should re characteristic cannot be evaluated due to site or weather con comment section. Where there are obvious changes in the ch into a forest), the stream may be divided into smaller reaches reach. The total score assigned to a stream reach must range highest quality.	e 2): Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points region. Page 3 provides a brief description of how to review the flect an overall assessment of the stream reach under evaluation. If a nditions, enter 0 in the scoring box and provide an explanation in the maracter of a stream under review (e.g., the stream flows from a pasture that display more continuity, and a separate form used to evaluate each e between 0 and 100, with a score of 100 representing a stream of the			
Total Score (from reverse): 53 Comme	nts:			
Evaluator's Signature Keen Levyer	Date 7/30/14			
This channel evaluation form is intended to be used only gathering the data required by the United States Army quality. The total score resulting from the completion	as a guide to assist landowners and environmental professionals in Corps of Engineers to make a preliminary assessment of stream of this form is subject to USACE approval and does not imply a o change – version 06/03. To Comment, please call 919-876-8441 x 26.			

#### ECOREGION POINT RANGE SCORE CHARACTERISTICS 编作事 Presence of flow / persistent pools in stream 0 - 50 - 50 - 41 (no flow or saturation = 0; strong flow = max points) Evidence of past human alteration 4 0 - 50-6 0 - 52 (extensive alteration = 0; no alteration $= \max points$ ) 5 **Riparian** zone 0 - 53 0 - 60 - 4(no buffer = 0; contiguous, wide buffer = max points) Evidence of nutrient or chemical discharges 5. 0 - 40 - 50 - 44 (extensive discharges = 0; no discharges = max points) 3 Groundwater discharge A STATE AND A STOCAL 0 - 30 - 40 - 45 (no discharge = 0; springs, seeps, wetlands, etc. = max points) ()Presence of adjacent floodplain 0 - 20 - 40 - 46 (no floodplain = 0; extensive floodplain = max points) 3 Entrenchment / floodplain access 0 - 50 - 40 - 27 (deeply entrenched = 0; frequent flooding = max points) +Presence of adjacent wetlands 0 - 20-6 0 - 48 (no wetlands = 0; large adjacent wetlands = max points) **Channel sinuosity** 4 0 - 30-5 0 - 49 (extensive channelization = 0; natural meander = max points) 2 Sediment input 0 - 40 - 40 - 510 (extensive deposition= 0; little or no sediment = max points) 1) INA-Size & diversity of channel bed substrate 0 - 40 - 511 (fine, homogenous = 0; large, diverse sizes = max points) Evidence of channel incision or widening STABIL TRY 4 0 - 512 0 - 50 - 4(deeply incised = 0; stable bed & banks = max points) Presence of major bank failures +0 - 513 0 - 50 - 5(severe erosion = 0; no erosion, stable banks = max points) 2. Root depth and density on banks 0 - 40 - 50 - 314 (no visible roots = 0; dense roots throughout = max points) 5 Impact by agriculture, livestock, or timber production 0 – 5 0 - 40 – 5 15 1 (substantial impact =0; no evidence = max points) Presence of riffle-pool/ripple-pool complexes 0 - 30-5 0 - 616 (no riffles/ripples or pools = 0; well-developed = max points) - HABITAT Habitat complexity 0 - 60 - 60 - 617 (little or no habitat = 0; frequent, varied habitats = max points) 5. Canopy coverage over streambed 0 - 50 - 50 - 518 (no shading vegetation = 0; continuous canopy = max points) V. NAT Substrate embeddedness 0 - 40 - 419 (deeply embedded = 0; loose structure = max) #4 $\mathcal{O}$ Presence of stream invertebrates (see page 4) 0 - 50 - 40 - 5 **BIOLOGY** 20 (no evidence = 0; common, numerous types = max points) () Presence of amphibians 0 - 40 - 40 - 421 (no evidence = 0; common, numerous types = max points) Presence of fish $\mathcal{O}$ 0 - 40 - 40-4 22 (no evidence = 0; common, numerous types = max points) 3 Evidence of wildlife use 0 - 60 - 50 - 523 (no evidence = 0; abundant evidence = max points) 100 Total Points Possibles - 1 - 1 - 2 - 2 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 100 - 2 - 1 Nij. 44. TOTAL SCORE (also enter on first page) and all all and the second states and the second 3 5

### STREAM QUALITY ASSESSMENT WORKSHEET

Date: 7/30/14	Project/Site:	ACP	Shao ( Latitude: 35	,81304		
Evaluator: K, MURPhiley	County: NAS	ih .	Longitude+-7 *	Longitude:-78.03725		
Total Points: Stream is at least intermittent $24.5$ if $\geq$ 19 or perennial if $\geq$ 30*	Stream Determination (circle one) Ephemeral Intermittent\Perennial		Other BRILLY, NC e.g. Quad Name:			
A. Geomorphology (Subtotal =_{3)	Absent	Weak	Moderate	Strong		
1 <sup>a</sup> Continuity of channel bed and bank	0	1	2	(3)		
2. Sinuosity of channel along thalweg	0	1	(2)	3		
3. In-channel structure: ex. riffle-pool, step-pool,	0					
ripple-pool sequence	0	1	2	3		
4. Particle size of stream substrate	0	1	(2)	3		
5. Active/relict floodplain	<u> </u>	1	Y	3		
6. Depositional bars or benches	(0)	1	2	3		
7. Recent alluvial deposits	Ŏ	1	0	3		
8. Headcuts	<u>(v)</u>	1	2	3		
9. Grade control	0	0.5	1	1.5		
10. Naturai valley	0		1	1.5		
11. Second or greater order channel	N	o = 0 .	Yes	<del>(</del> 3)		
<sup>a</sup> artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = $6, 5$ )						
12. Presence of Baseflow	0	1	2	3		
13. Iron oxidizing bacteria		1	2	3		
14. Leaf litter	1.5		0.5	0		
15. Sediment on plants or debris	0	0.5	(1)	1.5		
16. Organic debris lines or piles		0.5	1	(1.5)		
17. Soil-based evidence of high water table?	-	lo = 0		$\neq 3$		
C. Biology (Subtotal = $5$ )	!		100			
18. Fibrous roots in streambed	3	2	1	0		
19. Rooted upland plants in streambed		2		0		
20. Macrobenthos (note diversity and abundance)	0	1	2	3		
21. Aquatic Mollusks		1 1	2	3		
22. Fish	Ö	0.5	1	1.5		
23. Crayfish	<b>B</b>	0.5	1	1.5		
24. Amphibians	- Ö	0.5	1	1.5		
25. Algae	(0)	0.5	· · · · · · · · · · · · · · · · · · ·	1.5		
26. Wetland plants in streambed			) BL = 1.5 Other <del>{</del>			
*perennial streams may also be identified using other method	ods, See p. 35 of man			<u> </u>		
Notes: UNT to Beaverdam Creek	· · · · · · · · · · · · · · · · · · ·					
Sketch:	20005 <u>-</u>	· · · · · · · · · · · · · · · · · · ·	· ·			
What what what what what what what what w	003		Υ.			
				`		

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Waterbody snao004 facing northeast upstream.



Waterbody snao004 facing southwest downstream.



Waterbody snao004 facing northwest across channel.

USACE AID#
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DWQ #\_

Site #\_\_\_\_

STREAM QUALITY A	SSESSMENT WORKSHEET
Provide the following information for the stream reach und	
1. Applicant's name: Dominion	2. Evaluator's name: 15, MURPhrey
3. Date of evaluation: 7/30/14	4. Time of evaluation: 3/00
5. Name of stream: UNT to Beaverdam Creek	6. River basin: NEASe
7. Approximate drainage area: 10 oures	8. Stream order: 🖉
9. Length of reach evaluated: 50 F-4	10. County: NOSM
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): NA
Latitude (ex. 34.872312): <u>35.81096</u>	Longitude (ex77.556611):-78.03879
Method location determined (circle): GPS) Topo Sheet Orthod 13. Location of reach under evaluation (note nearby roads and LOLATEL between SIMMS RUDE	
14. Proposed channel work (if any): TBD	· · · · · · · · · · · · · · · · · · ·
15. Recent weather conditions: Sunay	
16. Site conditions at time of visit: Man-made ditch	-
	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation	point? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES Ň	20. Does channel appear on USDA Soil Survey? YES NO
21. Estimated watershed land use:% Residential	% Commercial% Industrial 70% Agricultural
	% Cleared / Logged% Other ()
22. Bankfull width: <u>8 FF</u>	23. Bank height (from bed to top of bank):
24. Channel slope down center of stream:Flat (0 to 2%)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the ecc characteristics identified in the worksheet. Scores should re characteristic cannot be evaluated due to site or weather co comment section. Where there are obvious changes in the cl into a forest), the stream may be divided into smaller reaches	ge 2): Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points pregion. Page 3 provides a brief description of how to review the effect an overall assessment of the stream reach under evaluation. If a nditions, enter 0 in the scoring box and provide an explanation in the haracter of a stream under review (e.g., the stream flows from a pasture that display more continuity, and a separate form used to evaluate each ge between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): <u>32</u> Comme	ents: ditch adjacent to Ag field
	<u> </u>
Evaluator's Signature Kell und	$Date \frac{7/30/14}{100000000000000000000000000000000000$
gathering the data required by the United States Army quality. The total score resulting from the completion	as a guide to assist landowners and environmental professionals in Year Corps of Engineers to make a preliminary assessment of stream of this form is subject to USACE approval and does not imply a o change – version 06/03. To Comment, please call 919-876-8441 x 26.

R.			<b>ECOREG</b>	ION POINT	RANGE	
	新基		Coastal 🖬		Mountain	SCORE,
	1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0 - 5	0-4	0-5	$\bigcirc$
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0 – 5	0 - 5	
	3	<b>Riparian zone</b> (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0 – 5	2
	4	<b>Evidence of nutrient or chemical discharges</b> (extensive discharges = 0; no discharges = max points)	0 – 5	0-4	0-4	3.
<b>NI</b>	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0 4	0 – 4	
<b>PHYSIC</b>	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	0
ΕH	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0 – 4	0-2	4
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	$\bigcirc$
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0 - 5	0-4	0-3	
	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0 – 5	0-4	0 – 4	3
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	Ty NA .	0-4	0-5	
Y	12	Evidence of channel incision or widening (deeply.incised = 0; stable bed & banks = max points)	0 - 5	0-4	0 – 5	2
IUI	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0 – 5	0-5	2
<b>STABILITY</b>	14	<b>Root depth and density on banks</b> (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0 - 5	$\bigcirc$
	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0 – 5	0 - 4	0-5	5
が出	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	0
HABITAT	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	3
<b>IAB</b>	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0 - 5	3.
L	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	
	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	Û
06)	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
*BIOLOGY	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0 - 4	0-4	0
H	<i>L.J</i>	Evidence of wildlife use (no evidence = 0: abundant evidence = max points)	0-6	0 - 5	0-5	2
		Total Points Possible 1	· 【》《》:"是一些"可是"	100	100/3	
		a a design of the anter on a second s				32
* '	Thora a	characteristics are not assessed in coastal streams.				

## STREAM QUALITY ASSESSMENT WORKSHEET

NC DWQ Stream Identification Form	Version 4.11		Shao	003
Date: 7/30/14	Project/Site: ACP		Latitude: 30	503 5.81096
Evaluator: K. MUYPhYey	County: NOSH		Longitude: -78,038	
Total Points: Stream is at least intermittent if $\geq$ 19 or perennial if $\geq$ 30*  3,75	Stream Determination (circle one) Ephemeral Untermittent Perennial		Other Bailey, NC e.g. Quad Name:	
A. Geomorphology (Subtotal = 3,5)	Absent	Weak	Moderate	Strong
1 <sup>a</sup> Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	(0)	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	6	1	2	3
4. Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	(0)		2	3
6. Depositional bars or benches	10	1	2	3
7. Recent alluvial deposits	. (0)	1	2	3
8. Headcuts		1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley		(0.5)	1	1.5
11. Second or greater order channel	N	0 = 10	Yes	= 3
<sup>a</sup> artificial ditches are not rated; see discussions in manual	<b>I</b> ,			
B. Hydrology (Subtotal = <u>4.5</u> )				
12. Presence of Baseflow	6)	1	2	3
13. Iron oxidizing bacteria		1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris		0.5	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?		lo = 0		s€3)
C. Biology (Subtotal = $5.75$ )		· · ·		<u> </u>
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed		(2)	1	0
20. Macrobenthos (note diversity and abundance)	Ő		2	3
21. Aquatic Mollusks		1 1	2	3
22. Fish	6	0.5	1	1.5
23. Cravfish	$\overline{0}$	0.5	1	1.5
24. Amphibians	8	0.5	1	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed		FACW =(0.75;) OF	3L = 1.5 Other =	= 0
*perennial streams may also be identified using other method	ls. See p. 35 of man			
Notes:		OHWM Present	r	
Sketch:	3			
OHWM: 6 Ft BOOK: 8 Ft width				

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Waterbody snao003 facing northeast upstream.



Waterbody snao003 facing southwest downstream.



Waterbody snao003 facing southeast across channel.

DWQ #\_

Site #\_\_\_\_\_ (indicate on attached map)

Snaoc

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STREAM QUALITY A	ASSESSMENT WORKSHEET
Provide the following information for the stream reach un	der assessment:
1. Applicant's name: DOMINION	2. Evaluator's name: 16. MULPhrey
3. Date of evaluation: 7/24/14	4. Time of evaluation: (2:00)
5. Name of stream: UN+ to Bloomen Swame	6. River basin: NEUSE
7. Approximate drainage area: 10 acres	8. Stream order: O
9. Length of reach evaluated: SO F-C	10. County: NASh
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): <u>NA</u>
Latitude (ex. 34.872312): <u>35.74744</u>	Longitude (ex77.556611): -78,04-514
located in Ag Field between	(Aerial)Photo/GIS Other GIS Other I landmarks and attach map identifying stream(s) location): SIMS ROAD ONE OLE SMithField ROAD
14. Proposed channel work (if any): TBD	
15. Recent weather conditions: SUNNY	
16. Site conditions at time of visit: Ditch in ag field	
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
	_Nutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation	point? YES (NO) If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES NO	20. Does channel appear on USDA Soil Survey? YES NO
21. Estimated watershed land use: 5 % Residential	% Commercial% Industrial <u>70</u> % Agricultural
	% Cleared / Logged% Other ()
	23. Bank height (from bed to top of bank): 2 Ft
24. Channel slope down center of stream:Flat (0 to 2%)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Ever to each characteristic within the range shown for the ecc characteristics identified in the worksheet. Scores should r characteristic cannot be evaluated due to site or weather or comment section. Where there are obvious changes in the into a forest), the stream may be divided into smaller reache	ge 2): Begin by determining the most appropriate ecoregion based on y characteristic must be scored using the same ecoregion. Assign points oregion. Page 3 provides a brief description of how to review the eflect an overall assessment of the stream reach under evaluation. If a onditions, enter 0 in the scoring box and provide an explanation in the character of a stream under review (e.g., the stream flows from a pasture s that display more continuity, and a separate form used to evaluate each ge between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 26 Comm	ents: Ditch in Ag field
Evaluator's Signature Keyn www.	7/29/14 Date_ y as a guide to assist landowners and environmental professionals in
gathering the data required by the United States Arm quality. The total score resulting from the completion	y Corps of Engineers to make a preliminary assessment of stream of this form is subject to USACE approval and does not imply a to change – version 06/03. To Comment, please call 919-876-8441 x 26.

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## STREAM QUALITY ASSESSMENT WORKSHEET

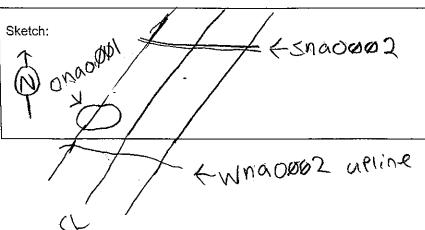
	5		ECOREG	ION POINT	RANGE	
144 144 144	<b>"</b> 挪	CHARACTERISTICS AN ANALY	Coastal	Piedmont	Mountain	SCORE
	1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0 – 5	0-4	0 – 5	3
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0 – 5	0 – 5	0
	3	<b>Riparian zone</b> (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0 – 5	
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0 – 5	0-4	0-4	2
<b>NI</b>	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	0
VSIC	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0 - 4	0-2	0
THU	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0-4	0-2	0
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	$\bigcirc$
PHYSICAL	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	$\bigcirc$
	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0 – 4	2
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	* NA*	0-4	0-5	
X 3	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0 – 5	0-4	0-5	
ULT	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0 – 5	S
STABILITY	14	<b>Root depth and density on banks</b> (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	)
	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0 - 5	5
	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	0
<b>L</b> AT	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	3 -
HABITAT	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	0
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	М <b>А</b> †	0-4	0-4	
	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0 - 5	0
00	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	2
BIOLOGY	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	$\bigcirc$
E State	23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0 - 5	0-5	3
		. Total Points Possible	100, 2	100	100 2	
	ф.	TOTAL SCORE (also enterion f	irst page) i m		****	26

Sna0002

#### NC DWQ Stream Identification Form Version 4.11

Date: 7/29/14	Project/Site: ACP	Latitude: 35, 7979
Evaluator: K. MUYPHYEY	County: NASh	Longitude:-78,04514
Total Points:         Stream is at least intermittent         if $\geq$ 19 or perennial if $\geq$ 30*	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other Bailey, NC e.g. Quad Name:

A. Geomorphology (Subtotal = 6	Absent	Weak	Moderate ·	Strong
1 <sup>a.</sup> Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	2	3
<ol> <li>In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence</li> </ol>	Ô	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	(D)	1	2	3
6. Depositional bars or benches	(ð)	1	2	3
7. Recent alluvial deposits		1	2	3
8. Headcuts		1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	(0)	0.5	1	1.5
11. Second or greater order channel	N	°€V	Yes	= 3
artificial ditches are not rated; see discussions in manual				
B. Hydrology (Subtotal =)				
12. Presence of Baseflow	0	1		3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris		0.5	1	1.5
16. Organic debris lines or piles		0.5	1	1.5
17. Soil-based evidence of high water table?	N	o = 0	Yes	;=(3)
C. Biology (Subtotal =)			~	
18. Fibrous roots in streambed	3	2	$\bigcirc$	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)		<u>]</u> 1	2	3
21. Aquatic Mollusks	()	1	2	3
22. Fish	(Q)	0.5	1	1.5
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	( <u>)</u>	0.5	1	1.5
25. Algae		0.5	1	1.5
26. Wetland plants in streambed		FACW = 0.75	; OBL = 1.5 Other (	= 0)
*perennial streams may also be identified using other meth	ods. See p. 35 of man	ual.		
Notes: Ditch in Ag field		OHI	wm present	





Waterbody snao002 facing north upstream.



Waterbody snao002 facing south downstream.



Waterbody snao002 facing west across channel.

Open Waterbody Da							
Survey Description					•		
roject Name:	[i	Waterbody Name	ж. <sub>і</sub> .	W	aterbody ID:	Date:	_ t
Southeastern Reliability	y	Unnam	ned Por	d and	Ona000	1  7	29/14
State: Coun	ty:	Con	ipany:	Crew !	Nember Initials:	Photos:	
	ash.		SI		<u>, KM</u>	Facing	east
Tract Number(s): $(8-237)$		Nea	rest Milepost: 35(		ssociated Wetland	- · ·	
Survey Type: check one)	⊠Centerline	□Re-Re	oute (	□Access Road	□Other:		
Physical Attributes			· · ·	. ,			
Waterbody Type: (check one)	id 🛛 Natural	Pond 🖾 Lake	🗆 Reservoir 🖺	] Impoundment	Oxbow		
Hydrologic Regime: ₽	/ Permanently I	Flooded	mipermanently	Flooded 🖸 Seas	onally Flooded	☐ Temporarily Floo	ded
OHWM	OHWM Indic			e Shelving	 ⊡Wrested	□Scouring	□Water
Height:ft.			on bank		vegetation		staining
	□Bent vegetat	, matted, or missi ion	ng ⊟Wrack line	Litter and debris	Community c	nt ⊟Soil characte hange	ristic change
Depth of Water:	I	Bank height (a	/		Bank slope (av		
_ <u> ∪_</u> ft.			6	ft.		<u> </u>	
Qualitative Attributes							
Qualitative Attributes Water Appearance:		Clear 🗆 Turbi	on surfa	n □Surface ace scum	mats	⊒Other:	
Qualitative Attributes Water Appearance: (check one)	water 🖽	Clear 🗆 Turbi	on surfa	n □Surface ace scum 世 Sand 団 Si	mats It/ clay □ Organic		
Qualitative Attributes Water Appearance: (check one)	water 🖽	pulder 🗆 Cobb	on surfa	n □Surface ace scum 世Sand 世Si	mats It/ clay □ Organic	: Other:	
Qualitative Attributes Water Appearance: (check one)	water Da edrock D Bo % Vegetative	Dulder 🗆 Cobbi % Layers:	on surfa	n ⊡Surface ace scum ⊡Sand ⊡Si _ <u>20_%</u> _∬(	t/ ctay □ Organic	0 Other:	
Qualitative Attributes Water Appearance: (check one)	water 🖬 edrock 🗆 Be	Dulder 🗆 Cobbi % Layers:	on surfa le 🛛 Gravel	n ⊡Surface ace scum ⊡Sand ⊡Si _ <u>20_%</u> _∬(	mats It/ clay □ Organic	: 🗆 Other:	
Qualitative Attributes	water Date: edrock D Bo % Vegetative (check all that Avg. DBH	Dulder 🗆 Cobbi % Layers:	on surfa	n ⊡Surface ace scum ⊡Sand ⊡Si %∬  ∑San	t/ ctay □ Organic	0 Other:	
Qualitative Attributes Water Appearance: (check one)	water edrock Bedrock Bedrock Bedrock Bedrock Check all that Avg. DBH (approx.)	Dulder □ Cobbi % Layers: apply)	on surfa le	n ⊡Surface ace scum ⊡Sand ⊡Si %∬  ∑San	tt/ ctay □ Organic	© Other: 0% ⊡ Herbs N A	
Qualitative Attributes Water Appearance: (check one)	water Dates water	Duider Cobbi	on surfa le ⊡ Gravel %% □ Trees: NA_in.	n □Surface ace scum ⊡Sand ⊡Si _ <u></u>  ∑ <sup>1</sup> 	mats tt/ ctay □ Organic % % plings/Shrubs: in.	i □ Other: i% i Herbs in.	
Qualitative Attributes Water Appearance: (check one)	water Decrock	Dulder □ Cobb % Layers: apply) of Dominants:	on surfa le □ Gravel %% □ Trees:  	n $\Box$ Surface ace scum $\Box$ Sand $\Box$ Si 20% $10%\Box San2%2%2%2%2%2%2%2%$	mats tt/ ctay □ Organic % % plings/Shrubs: in. in. in. in.	i □ Other: i% i Herbs in.	
Qualitative Attributes Water Appearance: (check one)	water Decrock	Dulder □ Cobb % Layers: apply) of Dominants:	on surfa le □ Gravel %% □ Trees:  	n $\Box$ Surface ace scum $\Box$ Sand $\Box$ Si 20% $10%\Box San2%2%2%2%2%2%2%2%$	mats tt/ ctay □ Organic % % plings/Shrubs: in. in. in. in.	i □ Other: i% i Herbs in.	
Qualitative Attributes Water Appearance: (check one)	water edrock Be Wegetative (check all that Avg. DBH (approx.) n (list): M (L ()) rged or emerged ac	Dulder □ Cobb % Layers: apply) of Dominants:	on surfa le □ Gravel %% □ Trees:  	n $\Box$ Surface ace scum $\Box$ Sand $\Box$ Si 20% $10%\Box San2%2%2%2%2%2%2%2%$	mats tt/ ctay □ Organic % % plings/Shrubs: in. in. in. in.	i □ Other: i% i Herbs in.	
Qualitative Attributes         Water Appearance:         (check one) $\Box$ No         Substrate: $\Box$ Be         (check all (hat apply)         % of Substrate:         Width of Riparian Zone: $\underline{0}$ ft.         N/A□         Midth of Riparian Zone: $\underline{0}$ ft.         N/A□         Aquatic Habitats (ex submer N A         Aquatic Organisms Obser	water edrock edrock wedrock Wegetative (check all that Avg. DBH (approx.) n (list): where the second se	Dulder □ Cobb % Layers: apply) of Dominants:	on surfa le □ Gravel %% □ Trees:  	n $\Box$ Surface ace scum $\Box$ Sand $\Box$ Si 20% $10%\Box San2%2%2%2%2%2%2%2%$	mats tt/ ctay □ Organic % % plings/Shrubs: in. in. in. in.	i □ Other: i% i Herbs in.	
Qualitative Attributes         Water Appearance:         (check one) $\Box$ No         Substrate: $\Box$ Be         (check all that apply) $\forall$ of Substrate:         Width of Riparian Zone: $\_$ $\_$ $\_$ Width of Riparian Zone: $\_$ $\_$ $\_$ Midth of Riparian Zone: $\_$ $\_$ $\_$ Main and Bank Vegetation $\_$ Aquatic Habitats (ex. submer $\bigcirc$ $\square$ <	water cdrock gdrock weight Boundary Bounda	Dulder □ Cobbi	on surfa le □ Gravel %% □ Trees: in. Storecistor hanging banks/roots, e discharge pipes	n Surface ace scum I Sand I Si <u>20 %                                   </u>	mats tt/ ctay □ Organic % % plings/Shrubs: in. in. in. in.	i □ Other: i% i Herbs in.	
Qualitative Attributes         Water Appearance:         (check one) $\Box$ No         Substrate: $\Box$ Be         (check all that apply) $\forall$ of Substrate:         Width of Riparian Zone: $\_$ $\_$ $\_$ $\_$ $\_$ $\_$ $\_$ $\_$ $\_$ $\_$	water cdrock gdrock weight Boundary Bounda	Dulder □ Cobbi	on surfa le □ Gravel %% □ Trees: in. Storecistor hanging banks/roots, e discharge pipes	n □Surface ace scum ISand ISi <u>20 %</u> <u>%</u> ISan <u>3</u> 4 Coo , Saccharc leaf packs, large submerge	mats tt/ ctay □ Organic % % plings/Shrubs: in. in. in. in.	i □ Other: i% i Herbs in.	
Qualitative Attributes         Water Appearance:         (check one) $\Box$ No         Substrate: $\Box$ Be         (check all (hat apply)         % of Substrate:         Width of Riparian Zone: $\underline{0}$ ft.         N/A $\Box$ Table Comparison Solution $A$ ( $\mathcal{C}$ ( $\mathcal{U}$ ( $U$	water cdrock gdrock weight Boundary Bounda	builder     □     Cobbin       %        • Layers:     apply)       of Dominants:       (     A b O Y       quatic vegetation, overf       : in waterbody, waster       • EXCOVE	on surfa le □ Gravel %% □ Trees: in. Store ist hanging banks/roots, e discharge pipes X+P_C PC	n Surface ace scum I Sand I Si <u>20 %                                   </u>	mats tt/ ctay □ Organic % % plings/Shrubs: in. in. in. in.	i □ Other: i% i Herbs in.	

Waterbody ID: ONADODI High Quality: Natural, natural bank vegetation around entire waterbody; 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 by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or bank 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: 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 locations, survey boundary, and IDs of associated features) CL -sna0002 ONADOUL / Wha down upline Survey corridor

Environmental Field Surveys Open Water Point Photo Page



Open Waterbody onao001 facing east.

NC DWQ Stream Identification Form	Version 4.11		SNAHC	30
Date: 3/19/15	Project/Site:	ACP	Latitude: 35	790292
Evaluator: DDWEST	County: N	ASH	Longitude: 78	8,051911
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle one) Ephemeral Intermittent Perennial		Other e.g. Quad Name:	
A. Geomorphology (Subtotal =)	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	$\widehat{\mathcal{O}}$	3
2. Sinuosity of channel along thalweg	0	(1)	2	3
3. In-channel structure: ex. riffle-pool, step-pool,	0	1	۷	3
ripple-pool sequence 4. Particle size of stream substrate	-			-
5. Active/relict floodplain	0	<u>(1)</u>	2	3
6. Depositional bars or benches		1	2	3
7. Recent alluvial deposits		$(\hat{1})$	2	3
8. Headcuts	Ô	$-\psi$	2	3
9. Grade control		0.5	<u>(</u> 1)	1.5
10. Natural valley	+	0.5	1	1.5
11. Second or greater order channel		0.5 0 = 0)	Yes =	
<sup>a</sup> artificial ditches are not rated; see discussions in manual			165 -	- 3
B. Hydrology (Subtotal = 20 )				
12. Presence of Baseflow	0	1	(2)	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	(0.5)	1	1.5
16. Organic debris lines or piles	0	(0.5)	1	1.5
17. Soil-based evidence of high water table?	N	o = 0	Yes =	
C. Biology (Subtotal =	1	I		a contraction of the second
18. Fibrous roots in streambed	3	2	1	$\bigcirc$
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	0	Ð	2	3
21. Aquatic Mollusks	$(\vec{0})$	1	2	3
22. Fish	$\bigcirc$	0.5	1	1.5
23. Crayfish	0	(0.5)	1	1.5
24. Amphibians	0,	0.5	(1)	1.5
25. Algae	0	0.5	$\Box$	1.5
26. Wetland plants in streambed		FACW = 0.75; OB	L = 1.5 Other = 0	
*perennial streams may also be identified using other methods	. See p. 35 of manua	al.		
Notes:	Z			
<u> </u>	á	Man-mad	le alten	
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	and the second se	FLOW 7		
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ITVED ROM	in the			NONCOMPANIES.
				I

USACE AID# <u>SNAHO30</u> D	W
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Q #\_

(indicate on attached map) Site #

STREAM QUALITY ASSES	SSMENT WORKSHEET
Provide the following information for the stream reach under ass	essment:
1. Applicant's name: Dominion 2. Ex	valuator's name: J. Dunchn @
3. Date of evaluation: 3/19/15 4. Ti	me of evaluation: $lO: DO$
5. Name of stream: UNT TO Bloomery Sump6. Ri	ver basin:Neuse
	ream order: <u><u>Sf</u></u>
9. Length of reach evaluated: $100 \text{ GL}$ 10. C	County:NASH
	ubdivision name (if any):
Latitude (ex. 34.872312): <u>35.790292</u> Lon	gitude (ex77.556611): 78.051911°
Method location determined (circle): (GPS) Topo Sheet Ortho (Aerial) 13. Location of reach under evaluation (note nearby roads and landma Adjacent do Bull He	irks and attach map identifying stream(s) location):
14. Proposed channel work (if any): NOVE	
15. Recent weather conditions: Recent Heavy R	AINS
16. Site conditions at time of visit: <u>Cloudy</u>	
	on 10 $\underline{NA}$ Tidal Waters $\underline{NA}$ Essential Fisheries Habitat nt Sensitive Waters $\underline{NA}$ Water Supply Watershed $\underline{NA}$ (I-IV)
18. Is there a pond or lake located upstream of the evaluation point?	YES (NO) If yes, estimate the water surface area:
21. Estimated watershed land use: 40% Residential%	Does channel appear on USDA Soil Survey? YES NO         Commercial      % Industrial <u>40</u> % Agricultural         Cleared / Logged      % Other ()
22. Bankfull width: ( 🖸 23. E	ank height (from bed to top of bank): ( 5
<ul> <li>24. Channel slope down center of stream: K Flat (0 to 2%)Ge</li> <li>25. Channel sinuosity: K StraightOccasional bendsFree</li> </ul>	ntle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
Instructions for completion of worksheet (located on page 2): If location, terrain, vegetation, stream classification, etc. Every charact to each characteristic within the range shown for the ecoregion. characteristics identified in the worksheet. Scores should reflect an characteristic cannot be evaluated due to site or weather conditions comment section. Where there are obvious changes in the character into a forest), the stream may be divided into smaller reaches that dis reach. The total score assigned to a stream reach must range betwee highest quality.	Begin by determining the most appropriate ecoregion based on eristic must be scored using the same ecoregion. Assign points Page 3 provides a brief description of how to review the overall assessment of the stream reach under evaluation. If a , enter 0 in the scoring box and provide an explanation in the of a stream under review (e.g., the stream flows from a pasture play more continuity, and a separate form used to evaluate each en 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse):          Comments:          Evaluator's Signature	Mm-made ditch    Date3/19/15 ide to assist landowners and environmental professionals in
gathering the data required by the United States Army Corps quality. The total score resulting from the completion of this	of Engineers to make a preliminary assessment of stream

quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change - version 06/03. To Comment, please call 919-876-8441 x 26.

#	CHARACTERISTICS	ECOREGION POINT RANGE		SCODE	
	CHARACTERISTICS	Coastal	Piedmont	Mountain	SCORE
1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0 – 5	3
2	<b>Evidence of past human alteration</b> (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	Í
3	<b>Riparian zone</b> (no buffer = 0; contiguous, wide buffer = max points)	0 – 6	0-4	0 – 5	0
4	<b>Evidence of nutrient or chemical discharges</b> (extensive discharges = 0; no discharges = max points)	0 – 5	0-4	0-4	2
5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0 – 3	0-4	0-4	(
6	<b>Presence of adjacent floodplain</b> (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	$\bigcirc$
7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	1
8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	0
9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	Õ
10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	(
11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	NA
12	<b>Evidence of channel incision or widening</b> (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	2
13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	4
14	<b>Root depth and density on banks</b> (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	2
15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	1
16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	$\mathcal{O}$
17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	2
18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0 – 5	Ó
19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	NA
20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	(
21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	2
22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	$\bigcirc$
23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0 – 6	0-5	0-5	1
	Total Points Possible	100	100	100	
	TOTAL SCORE (also enter on fi	rst page)			74

## STREAM QUALITY ASSESSMENT WORKSHEET

snah030



snah030 facing upstream



snah030 facing downstream

snah030



snah030 cross stream

NC DWQ Stream Identification Form	Version 4.11		SNAHC	031
Date: 3/19/15	Project/Site: /	CP	Latitude: 35	. 790175°
Evaluator: DD WEST	County: NV-	ISH	Longitude: 7	8.051923
Total Points: Stream is at least intermittent if $\geq$ 19 or perennial if $\geq$ 30* 23.25	Stream Determ	ination (circle one) ermittent Perennial	Other e.g. Quad Name	
A. Geomorphology (Subtotal = $7.5$ )	Absent	Weak	Moderate	Strong
1 <sup>a</sup> . Continuity of channel bed and bank	0	1	2	
2. Sinuosity of channel along thalweg	0	- <u>(1</u> )		3
3. In-channel structure: ex. riffle-pool, step-pool,	0		2	3
ripple-pool sequence	0		2	3
4. Particle size of stream substrate	0	$\overline{(1)}$	2	3
5. Active/relict floodplain	$\bigcirc$		2	3
6. Depositional bars or benches			2	3
7. Recent alluvial deposits	0		2	3
8. Headcuts	Ô	1	2	3
9. Grade control		(0.5)	2	1.5
10. Natural valley	Ô	0.5	1	1.5
11. Second or greater order channel		0.5 0 = 0	Yes	
<sup>a</sup> artificial ditches are not rated; see discussions in manual			res	- 3
B. Hydrology (Subtotal = 8,5)				
12. Presence of Baseflow				
	0	1	2	3
13. Iron oxidizing bacteria	0	1		3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5')	1.	1.5
17. Soil-based evidence of high water table?	N	p = 0	Yes	= 3
C. Biology (Subtotal = $7, 2.5$ )				-
18. Fibrous roots in streambed	3	2	(1')	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	<u> </u>		2	3
21. Aquatic Mollusks	$\bigcirc$	1	2	3
22. Fish	$\bigcirc$	0.5	1	1.5
23. Crayfish	$(\hat{O})$	0.5	1	1.5
24. Amphibians	0	0,5	(1)	1.5
25. Algae	0	(0.5)	1	1.5
26. Wetland plants in streambed		(FACW = 0.75;)OB	L = 1.5 Other = (	)
*perennial streams may also be identified using other methods.	. See p. 35 of manua	al.		
Notes:	~ <del>2</del>			
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		NAHO31	1017 Samera Carlos	
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DWQ #

Site # \_ (indicate on attached map)

Provide the following information for the stream reach under assessment:         1. Applicant's name:       Dominion         2. Evaluator's name:       DDUEST         3. Date of evaluation:       3[19]15         4. Time of evaluation:       10.30         5. Name of stream:       UNT TO BLODMON SUMMERIVEr basin:       Neuse         7. Approximate drainage area:       100 occess       8. Stream order:       15ft         9. Length of reach evaluated:       100 occess       8. Stream order:       15ft         11. Site coordinates (if known):       prefer in decimal degrees.       12. Subdivision name (if any):       12. Subdivision name (if any):         Latitude (ex. 34.872312):       35. 790 175 °       Longitude (ex77.556611):       78.051923 °         Method location determined (circle):       CPS       Topo Sheet       Ortho (Aerial) Photo/GIS       Other         13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location):
1. Applicant's name:       Dominion       2. Evaluator's name:       DDUEST         3. Date of evaluation:       3/19/15       4. Time of evaluation:       D3/20         5. Name of stream:       UNT       DDUESC       4. Time of evaluation:       D3/20         7. Approximate drainage area:       100 0-000000000000000000000000000000000
5. Name of stream: UNT TO BLODMON SUMMIRIVE basin: Neuse 7. Approximate drainage area: NOD OCRES 8. Stream order: St 9. Length of reach evaluated: UOA TO OCRES 10. County: NASCH 11. Site coordinates (if known): prefer in decimal degrees. 12. Subdivision name (if any): County: NASCH 12. Subdivision name (if any): County: NASCH 13. Location determined (circle): GPS) Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other 13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location): County: Adjunce of Bull Head Road 14. Proposed channel work (if any): NONE
7. Approximate drainage area:       100 occes       8. Stream order:       12f         9. Length of reach evaluated:       100 A       10. County:       NA56+         11. Site coordinates (if known):       prefer in decimal degrees.       12. Subdivision name (if any):       —         Latitude (ex. 34.872312):       35. 790175°       Longitude (ex77.556611):       78.051923°         Method location determined (circle):       GPS) Topo Sheet       Ortho (Aerial) Photo/GIS       Other         13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location):
7. Approximate drainage area:       100 occes       8. Stream order:       12f         9. Length of reach evaluated:       100 A       10. County:       NA56+         11. Site coordinates (if known):       prefer in decimal degrees.       12. Subdivision name (if any):       —         Latitude (ex. 34.872312):       35. 790175°       Longitude (ex77.556611):       78.051923°         Method location determined (circle):       GPS) Topo Sheet       Ortho (Aerial) Photo/GIS       Other         13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location):
11. Site coordinates (if known): prefer in decimal degrees.       12. Subdivision name (if any):
Latitude (ex. 34.872312): <u>35.790175</u> Method location determined (circle): GPS) Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other <b>13.</b> Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location): <u>Adjacent</u> <u>Bull Head Road</u> <b>14.</b> Proposed channel work (if any): <u>NONE</u>
Method location determined (circle): GPS Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other
13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) location): <u>Adjacent</u> to <u>Bull Head</u> Rond 14. Proposed channel work (if any): <u>NONE</u>
15. Recent weather conditions: Rocent bery ve Roins
16. Site conditions at time of visit: <u>Cloudy</u> "
17. Identify any special waterway classifications known: $NA$ Section 10 $NA$ Tidal Waters $NA$ Essential Fisheries Habita $NA$ Trout Waters $NP$ Outstanding Resource Waters $NA$ Nutrient Sensitive Waters $NA$ Water Supply Watershed $NA$ (I-IV)
18. Is there a pond or lake located upstream of the evaluation point? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map?       YES NO       20. Does channel appear on USDA Soil Survey?       YES NO         21. Estimated watershed land use:       40% Residential       % Commercial       % Industrial       40% Agricultural
20% Forested       % Cleared / Logged       % Other (
24. Channel slope down center of stream: X Flat (0 to 2%)Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bendsFrequent meanderVery sinuousBraided channel
Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based or location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign point to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristic identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality. Total Score (from reverse): 22 Comments: Man-made Oiled
Evaluator's Signature

quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change - version 06/03. To Comment, please call 919-876-8441 x 26.

	#	CHARACTERISTICS	ECOREC	<b>FION POIN</b>	<b>FRANGE</b>	SCODE
			Coastal	Piedmont	Mountain	SCORE
	1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-4	0 – 5	2
	2	<b>Evidence of past human alteration</b> (extensive alteration = 0; no alteration = max points)	0 – 6	0-5	0-5	l
	3	<b>Riparian zone</b> (no buffer = 0; contiguous, wide buffer = max points)	0 – 6	0-4	0 – 5	$\bigcirc$
	4	<b>Evidence of nutrient or chemical discharges</b> (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	2
CAL	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	١
PHYSICAL	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	$\bigcirc$
Hd	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0 4	0-2	\$
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	$\bigcirc$
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	$\bigcirc$
	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0 – 5	NA 2
N	12	<b>Evidence of channel incision or widening</b> (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	2
LTI	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0 – 5	0-5	3
STABILITY	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	2
S	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0 – 5	l
E	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	i
HABITAT	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	2
HAB	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	$\bigcirc$
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	NA
7	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	D
BIOLOGY	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	l
BIOI	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
	23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	l
		Total Points Possible	100	100	100	
		TOTAL SCORE (also enter on fi	rst page)	second 201		21

## STREAM QUALITY ASSESSMENT WORKSHEET

snah031



snah031 facing upstream



snah031 facing downstream

snah031



# snah031 cross stream

		3nao 001
USACE AID#	DWQ #	Site # (indicate on attached map)
STREAT	M QUALITY A	ASSESSMENT WORKSHEET
rovide the following information for		nder assessment:
. Applicant's name: DOMINIO	<u>`</u>	2. Evaluator's name: K. Murphrey
Date of evaluation: 7/28/1	4	4. Time of evaluation: $3.30$
Name of stream: UNE 40 JUNI	per creek	6. River basin: NEUSe
Approximate drainage area: 10	acres	8. Stream order: 0
. Length of reach evaluated: 🔬 🗲	e	10. County: NOSh
1. Site coordinates (if known): prefe		
atitude (ex. 34.872312): <u>35.7845</u>	2	Longitude (ex77.556611):-78,05438
3. Location of reach under evaluation	(note nearby roads and	o (Aerial) Photo/GIS Other GIS Other nd landmarks and attach map identifying stream(s) location): icn of Friday Road and Green Pund Roa
4. Proposed channel work (if any): T		/ · / · · ·
5. Recent weather conditions: $SUC$		
6. Site conditions at time of visit:	ndistarbed	
7. Identify any special waterway class		Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding R		Nutrient Sensitive WatersWater Supply Watershed(I-IV)
		n point? YES (NO) If yes, estimate the water surface area:
9. Does channel appear on USGS qua	()	20. Does channel appear on USDA Soil Survey? YES NO
21. Estimated watershed land use:		% Commercial% Industrial 20% Agricultural
	K Forested	
		23. Bank height (from bed to top of bank): 57+
		)Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
- /		Frequent meanderVery sinuousBraided channel
ocation, terrain, vegetation, stream cla to each characteristic within the ran characteristics identified in the works characteristic cannot be evaluated due comment section. Where there are ob into a forest), the stream may be divid reach. The total score assigned to a s highest quality.	assification, etc. Every ge shown for the ec- heet. Scores should r e to site or weather co- vious changes in the c ed into smaller reache stream reach must rang	age 2): Begin by determining the most appropriate ecoregion based or ry characteristic must be scored using the same ecoregion. Assign point coregion. Page 3 provides a brief description of how to review the reflect an overall assessment of the stream reach under evaluation. If conditions, enter 0 in the scoring box and provide an explanation in th character of a stream under review (e.g., the stream flows from a pastur es that display more continuity, and a separate form used to evaluate each nge between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): <u>21</u>	Comm	nents: ditch in Ag Field
Evaluator's Signature Keil		Date 7/28/14

This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in gathering the data required by the United States Army Corps of Engineers to make a preliminary assessment of stream quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply a particular mitigation ratio or requirement. Form subject to change – version 06/03. To Comment, please call 919-876-8441 x 26.

		CHARACTERISTICS	<b>ECOREG</b>	ION POINT	RANGE	SCODE
Mart.	新聞	CHARACTERISTICS	🚰 Coastal 🌮	Piedmont*	Mountain 🐇	SUURE
	1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0 – 5	0-4	0 – 5	ι.
	2	<b>Evidence of past human alteration</b> (extensive alteration = 0; no alteration = max points)	0-6	0-5	0 – 5	$\bigcirc$
	3	<b>Riparian zone</b> (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0 – 5	
	4	<b>Evidence of nutrient or chemical discharges</b> (extensive discharges = 0; no discharges = max points)	0 – 5	0-4	0-4	S
PHYSICAL *	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0 – 4	0
VSIC	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	0
PH	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0-4	0-2	0
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	0
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0 – 4	0 - 3	0
	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0 – 5	0-4	0-4	1
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	
N N	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0 – 4	0 – 5	5.
STABILITY	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	4
[AB]	14	<b>Root depth and density on banks</b> (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0 – 5	
S.	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	0
1975) 1975) 1975)	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0 – 5	0-6	0
TAT	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	N.
HABITAT	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	0
<b>1</b>	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA	0-4	0-4	
19 L	1	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	0
0GN	21	(no evidence = 0; common, numerous types = max points) (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	(
BIOLOGY	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
B	23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	2
ealer	(加)特代 (1) (1)	Total Points Possible	100	100	100	
	in de	TOTAL SCORE (also enter on f	irst page): .			21
	rt.	haracteristics are not assessed in coastal streams				

# STREAM QUALITY ASSESSMENT WORKSHEET

Date: 7/28/14	Project/Site:	ACP	Latitude: 35	.78452	
Evaluator: K, MUTPhrey	County: NQ	sh	Longitude: -	78.054	
Total Points:Stream is at least intermittentif $\geq$ 19 or perennial if $\geq$ 30*		•••		30:1.e.y, NC.	
A. Geomorphology (Subtotal =)	Absent	Weak	Moderate	Strong	
1 <sup>a</sup> . Continuity of channel bed and bank		1	2	(3)	
2. Sinuosity of channel along thalweg	6	1	2	3	
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3	
4. Particle size of stream substrate	0	1	(2)	3	
5. Active/relict floodplain	(0)	1	2	3	
6. Depositional bars or benches	(0)	1	2	3	
7. Recent alluvial deposits		1	2	3	
8. Headcuts	0	1 1	2	3	
9. Grade control	(0)	0.5	1	1.5	
10. Natural valley		0.5	1	1.5	
11. Second or greater order channel	N	io = (0)	Yes	; = 3	
<sup>a</sup> artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = $4$ )					
12. Presence of Baseflow	R	1 1	2	3	
13. Iron oxidizing bacteria		1	2	3	
14. Leaf litter	<u> </u>	(1)	0.5	0	
15. Sediment on plants or debris		0.5	1	1.5	
16. Organic debris lines or piles		0.5	1	1.5	
17. Soil-based evidence of high water table?		No = 0		s ≓ 3	
C. Biology (Subtotal = ジュネシ)	I				
18. Fibrous roots in streambed	3	2	(1) .	0	
19. Rooted upland plants in streambed	(3)	2	<u>1</u>	0	
20. Macrobenthos (note diversity and abundance)		1 1	2	3	
21. Aquatic Mollusks	(R)	1 1	2	3	
22. Fish		0.5	1	1.5	
23. Crayfish	<u> </u>	0.5	1	1.5	
24. Amphibians	0	6.5	1	1.5	
25. Algae	O	0.5	1	1.5	
26. Wetland plants in streambed		FACW = 0.75:) C	BL = 1.5 Other		
*perennial streams may also be identified using other me	thods. See p. 35 of mar				
Notes:			oresent		
	· · · · · · · · · · · · · · · · · · ·	[		······································	
Sketch:	N. K.				
A / XESI	100001		<b>.</b>		

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Waterbody snao001 facing north upstream.



Waterbody snao001 facing south downstream.



Waterbody snao001 facing west across channel.