USACE AID#	DWQ #	Site # (indicate on attached map)
\$1.00 m	TREAM QUALITY ASS	ESSMENT WORKSHEET
	ation for the stream reach under a	
1. Applicant's name: Don	ALOCA	* *
3 Data of sunty i	27 /Id	Evaluator's name: 121
5. Name of stream: Fish	4.	Time of evaluation: 12:00
7. Approximate drainage area:	$\supset 2m$	River basin: Tar-Pamlico
9. Length of reach evaluated:		Stream order: 72nd County:Nash/Halifax
****		40-1-00-1-00-1-00-1-00-1-00-1-00-1-00-1
Latitude (ex. 34.872312): 36 /	58' 43.991"	Subdivision name (if any):
wichlou location determined (circle	e): ZGPS ZTopo Shoot Out. (4) 1) DI
13. Location of reach under eva	iluation (note nearby roads and lands	narks and attach map identifying stream(s) location):
		1 serving stream(s) rocation)
14. Proposed channel work (if a	uny):	
15. Recent weather conditions:		
16. Site conditions at time of vi		•
		tion 10Tidal WatersEssential Fisheries Habita
Outstar	iding Resource Waters Nutri	ent Sensitive Waters W. C. 1 77
18. Is there a pond or lake locate	ed upstream of the evaluation point?	YES NO If yes, estimate the water surface area:(I-IV)
13. Does channel appear on US	is quad man? AVEC NO an	
21. Estimated watershed land us	e: 108 % Residential %	Does channel appear on USDA Soil Survey? YES NO Commercial% Industrial% Agricultural
	45 % Forested %	Cleared / Logard / Oct. / Agricultural
22. Bankfull width:	51	Cleared / Logged % Other (
24. Channel slope down center of	of stream: \times Flat (0 to 2%)	Bank height (from bed to top of bank): \(\sum_{\chi} \) entle (2 to 4%) \(\textit{Moderate (4 to 10%)} \) \(\textit{Steep (>10%)} \)
25. Channel sinuosity: Stra	ght XOccasional bends 5.	
Instructions for completion of	Worksheet (located on -and 2)	equent meanderVery sinuousBraided channel
location, terrain, vegetation, stre	am classification, etc. Every charac	Begin by determining the most appropriate ecoregion based on teristic must be scored using the same ecoregion. Assign points
to each characteristic within the	ie range shown for the ecoregion.	Page 3 provides a brief description of how to review the
characteristic cannot be evaluate	worksheet. Scores should reflect an	Page 3 provides a brief description of how to review the overall assessment of the stream reach under evaluation. If a
comment section. Where there	are obvious changes in the changes	, enter 0 in the scoring box and provide an explanation in the
into a forest), the stream may be	divided into smaller reaches that dis	of a stream under review (e.g., the stream flows from a pasture play more continuity, and a separate form used to evaluate each
reach. The total score assigned highest quality.	to a stream reach must range betwee	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
	£21	
Total Score (from reverse):	Comments:	
	50.1/2	
Evaluator's Signature	Topo -	Date 7/22/14
athering the data required by	s intended to be used only as a gui	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.

STREAM QUALITY ASSESSMENT WORKSHEET

	# CHARACTERISTICS			ECOREGION POINT RANGE		
			Coastal	Piedmont	Mountain	SCOR
	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	5
	3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	6
4	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	5
PHYSICAL	5	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	2
1	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0-4	0-2	723
	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	3
_	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	4
	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	4
	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	4
	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0 – 3	0-4	0-5	
1	15	(substantial impact =0; no evidence = max points)	0-5	0-4	0-5	4
-	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	3
	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0 – 6	6
	18	(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	4
L	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	4
	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	4
	23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	6
		Total Points Possible	100	100	100	

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: 7/22/14	Project/Site: 5	ERP	Latitude: 7/0	18' R1200:	
Evaluator: Luckey / D+D	County: Nash	n/Halifax	Latitude: 36°08'. \$3.99 Longitude: 77°47'4/.		
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* fish present and >18 on geomorphology	Stream Determine Ephemeral Inter	1		g Creek	
A. Geomorphology (Subtotal = 245)	Absent	Weak	Moderate	84	
Continuity of channel bed and bank	0	1	2	Strong	
2. Sinuosity of channel along thalweg	0	1	(2)	(3)	
3. In-channel structure: ex. riffle-pool, step-pool,				3	
ripple-pool sequence	0	1	2	(3)	
Particle size of stream substrate Active/relief floods-live	0	1	2	<u> </u>	
5. Active/relict floodplain	0	1	2	(3)	
Depositional bars or benches Recent alluvial deposits	0	1	20	(3)	
Necent alluvial deposits Headcuts	0	1	(2)	3	
Grade control	(6)	1	2_	3	
10. Natural valley	0	0.5	(1)	1.5	
11. Second or greater order channel	0	0.5	1	(1.5)	
a artificial ditches are not rated; see discussions in manual	No	= 0	(Yes =	<u> </u>	
B. Hydrology (Subtotal =)					
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?	No :	= 0	Yes =		
C. Biology (Subtotal =)			***************************************		
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	0	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; OBL =	1.5 Other = 0		
*perennial streams may also be identified using other methods Notes:	. See p. 35 of manual.				
Sketch:	/ /				
	nag001				



Waterbody snag001 facing west upstream



Waterbody snag001 facing east downstream



Waterbody snag001 facing south cross stream

SNA6003

USACE AID#	DWQ #	Site #	(indicate on attached map)
		APPROXIMATION AND ADDRESS OF THE PARTY OF TH	(



STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for the stream reach und	ler assessment:
1. Applicant's name: Donnich	2. Evaluator's name:
3. Date of evaluation: 7/13/14	4. Time of evaluation: 17.60
5. Name of stream: VNT by F. Shadak	6. River basin: /al · Can-
7. Approximate drainage area: 7 Puens	8. Stream order: 15th
9. Length of reach evaluated: So	10. County: 10.
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
Latitude (ex. 34.872312): 36° 08' 05-326"	Longitude (ex77.556611): 77° 48' 09. 302'
Method location determined (circle): GPS Topo Sheet Ortho (13. Location of reach under evaluation (note nearby roads and 14.	Aerial) Photo/GIS Other GIS Other
14. Proposed channel work (if any):	* ***
15. Recent weather conditions:	
16. Site conditions at time of visit: Types	
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 po	
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
% 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:StraightOccasional bends _	Frequent meanderVery sinuousBraided channel
to each characteristic within the range shown for the ecore characteristics identified in the worksheet. Scores should reflecharacteristic cannot be evaluated due to site or weather conceonment section. Where there are obvious changes in the chainto a forest), the stream may be divided into smaller reaches the 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 region. Page 3 provides a brief description of how to review the ect an overall assessment of the stream reach under evaluation. If a ditions, enter 0 in the scoring box and provide an explanation in the racter of a stream under review (e.g., the stream flows from a pasture nat 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 is:
Evaluator's Signature	Date
ins channel evaluation form is intended to be used only as gathering the data required by the United States Army C	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.

${\bf STREAM\ QUALITY}_{{\scriptscriptstyle S}}{\bf ASSESSMENT\ WORKSHEET}$

# 1 2 3 4 4 5 6 6 7 8	CHARACTERISTICS Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points) Evidence of past human alteration (extensive alteration = 0; no alteration = max points) Riparian zone (no buffer = 0; contiguous, wide buffer = max points) Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points) Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points) Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points) Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	Coastal 0-5 0-6 0-6 0-5 0-3 0-4	Piedmont	Mountain 0-5 0-5 0-5 0-4	2 3 3
2 3 4 5 6 7	(no flow or saturation = 0; strong flow = max points) Evidence of past human alteration (extensive alteration = 0; no alteration = max points) Riparian zone (no buffer = 0; contiguous, wide buffer = max points) Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points) Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points) Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points) Entrenchment / floodplain access	0-6 0-6 0-5 0-3	0-4 0-5 0-4 0-4	0-5 $0-5$ $0-5$ $0-4$	<u>0</u> 1 2 3
3 4 5 6 7	(extensive alteration = 0; no alteration = max points) Riparian zone (no buffer = 0; contiguous, wide buffer = max points) Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points) Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points) Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points) Entrenchment / floodplain access	0-6 0-5 0-3	0-4	0-5	3
4 5 6 7	(no buffer = 0; contiguous, wide buffer = max points) Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points) Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points) Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points) Entrenchment / floodplain access	0-5	0-4	0-4	3
5 6 7	(extensive discharges = 0; no discharges = max points) Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points) Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points) Entrenchment / floodplain access	0-3			3
	(no discharge = 0; springs, seeps, wetlands, etc. = max points) Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points) Entrenchment / floodplain access		0-4		
	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points) Entrenchment / floodplain access	0-4		0-4	2
	Entrenchment / floodplain access		0-4	0-2	2
8		0 5	0-4	0-2	2
	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	Z.e.
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	4
13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	Š
14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0 – 3	0-4	0-5	7
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
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	3
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
21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0 – 4	0-4	0-4	0
22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	Ö
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	

^{*} These characteristies are not assessed in coastal streams.

SNA 6003

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

ounty: tream Determi phemera Inte	nation (circle one)	Longitude: 77	08' 05.326 °48'09.30	
tream Determi phemeral Inte	nation (circle one)	Other ////	1 . magnetice }	
	rmittent Perennial	Other UNT to Fisking e.g. Quad Name: Creek		
Absent	Weak	Moderate	Strong	
0	1	(2)	3	
0	<u>/f)</u>		3	
0	(3)	2	3	
0	(1)	2	3	
0	71)		3	
(0)	1		3	
0	(1)		3	
(0)	1		3	
0	0.5		1.5	
0		1	1.5	
/No		Yes =		
- Augustan	act of the same of			
(0)	1	2	3	
(0)	1	2	3	
(1.5)	1	0.5	0	
0	0.5	(1)	1.5	
0	0.5	1	1.5	
No) = 0	Yes = 3)		
100-		AND		
<u>(3)</u>	2	1	0	
(3)	2	1	0	
(0)	1	2	3	
0	1		3	
70)	0.5		1.5	
6 0	(0.5)	1	1.5	
0	(0.5)	1	1.5	
0		1	1.5	
		= 1.5 Other = 0		
p. 35 of manual				
	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1	0 1 2 0 0 0 1 2 0 0 0 1 2 0 0 0 1 2 0 0 0 1 2 0 0 0 0	



Waterbody snag003 facing east upstream



Waterbody snag003 facing west downstream



Waterbody snag003 facing south cross stream

SNAGOOZ

	The sales are seen to the sales are specifically the sales are sales as the sales are		
USACE AID#			
USACE AID#	DWO #		
	DWQH	Site #	Gindicate on attached
AND THE RESIDENCE OF THE PROPERTY OF THE PROPE		DILC II	(indicate on attached map)
A STATE OF THE PARTY OF THE PAR			-17



STREAM QUALITY ASSESSMENT WORKSHEET



Provide the C.W.	
Provide the following information for the stream reach u	
1. Applicant's name: bonning	2. Evaluator's name: P4 D
3. Date of evaluation: 7/23/14	4. Time of evaluation:
5. Name of stream: UNT h Fishing Creek	6. River basin: Tor - Pan
7. Approximate drainage area: 720 acres	8. Stream order:
9. Length of reach evaluated: Zoo	10. County: Nas A
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
Latitude (ex. 34.872312): <u>\$6^608^605.362</u> 6	Longitude (ex77.556611): 77° 48' 09.615"
Method location determined (circle): GPS Topo Sheet Ortho	o (Aerial) Photo/GIS Other GIS Otherd landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any):	
15. Recent weather conditions: 16. Site conditions at time of visit: 17. Typical	
16. Site conditions at time of visit:	
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habita
Trout WatersOutstanding Resource Waters	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
16. 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? VES NO
21. Estimated watershed land use: % Residential	% Commercial% Industrial% Agricultural
% 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%)
25. Channel sinuosity:Straight \Occasional bends	Steep (>10%)Steep (>10%)
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 chainto a forest), the stream may be divided into smaller regarders.	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 notitions, enter 0 in the scoring box and provide an explanation in the naracter 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): 49 Commer	nts:
Evaluator's Signature	7/20/11
This channel evaluation form is intended to be used only	Date
quality. The total score resulting from the completion of	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.



STREAM QUALITY ASSESSMENT WORKSHEET

#	CHARACTERISTICS	ECOREGION POINT RANGE			COORT	
<u> '' </u>		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	7	
2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0 – 5	3	
3	Riparian zone (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	
5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0 – 4	3	
6	Presence of adjacent floodplain (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	S	
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	ang .	
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	3	
13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0 – 5	0-5	0-5	3	
14	Root depth and density on banks (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	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	2	
17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	S	
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	
21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	Q	
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	3	
	Total Points Possible	100	100	100		

^{*} These characteristics are not assessed in coastal streams.

SNA6007

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

NC DWQ Stream Identification Form Version 4.11

Date: 7/33/4/

Evaluator: Description County: 1/3 Latitude: 36°08′05.362″

Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*

A. Geomorphology (Subtotal = 1) Absent Weak Moderate Strong

1a. Continuity of channel bed and bank 0 1 2 3 3

2. Sinuosity of channel along thalweg 0 1 2 3 3

A. Geomorphology (Subtotal = //)	Absent	Weak	Moderate	Strong
1 ^a 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	0	1	2	3
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	(0)	1	2	<u>ع</u>
8. Headcuts		1	2	3
9. Grade control	0	0.5	(1)	1.5
10. Natural valley	0	0.5		1.5
11. Second or greater order channel	No	= 0	Yes:	
artificial ditches are not rated; see discussions in manual		and the second	103	- J

artificial ditches are not rated; see discussions in manual

В.	Hydrology	(Subtotal =)
----	-----------	-------------	--	---

15. Sediment on plants or debris16. Organic debris lines or piles	0	(0.5)	1	1.5
14. Leaf litter	(1.5)	11	0.5	0
13. Iron oxidizing bacteria	(0)	1	2	3
12. Presence of Baseflow	0		2	3

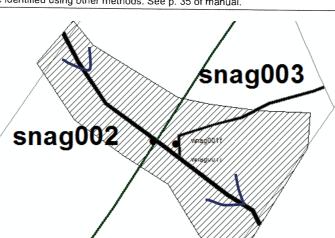
C.	Biology	(Subtotal = _

1 / .3/		1	0
73)	2	1	0
70	1	2	3
/0	1 1	2	3
0	0.5	<u></u>	15
76)		1	1.5
(0)	0.5	1	1.5
70	0.5	1	1.5
	(3) (0) (0) (0) (0) (0)	0 0.5	0 0.5 1 0 0.5 1

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

Notes:

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Waterbody snag002 facing west upstream



Waterbody snag002 facing east downstream



Waterbody snag002 facing south cross stream

SNAGOUT

USACE AID#	DWQ #	Site #	(indicate on attached map)



STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for the stream reach un	der assessment:
1. Applicant's name:	2. Evaluator's name: DeD
3. Date of evaluation: 7/23/14	4. Time of evaluation: \(\begin{align*} \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
5. Name of stream: UNT Fishing Creek	6. River basin: Tar - Pan
7. Approximate drainage area: 2 2 ces 5	8. Stream order: / 8#
9. Length of reach evaluated: 200	10. County:
11. Site coordinates (if known): prefer in decimal degrees. Latitude (ex. 34.872312): 36°07′53.033 *	12. Subdivision name (if any):
Method location determined (circle); GPS Topo Sheet Ortho 13. Location of reach under evaluation (note nearby roads and Continuous Continuo	(Aerial) Photo/GIS Other GIS Other I landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any):	
15. Recent weather conditions: Typical	
16. Site conditions at time of visit:	
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	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
	/0 % Commercial /0 % Industrial /0 % Agricultural
% 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 meanderVery sinuousBraided channel
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 concomment section. Where there are obvious changes in the chinto 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 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 paracter 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): Comme	nts:
· /	of .
Evaluator's Signature 74	Date7/23/14
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

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.



STREAM QUALITY ASSESSMENT WORKSHEET

#	CHARACTERISTICS	ECOREC			
#	CHARACTERISTICS	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	e e e e e e e e e e e e e e e e e e e
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	5
4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	3
5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0 – 4	2
5 6 6 7	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	2
7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	Zan
8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	B{
9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0 – 3	Lan
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	3
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	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	CONTRACTOR OF THE PARTY OF THE
17 18	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	Lan
18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0 5	0-5	L.f
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
21 22	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
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	S
	Total Points Possible	100	100	100	

^{*} 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

NC DWQ Stream Identification Form Version 4.11 Latitude: 36°07'5'3.033 Date: Project/Site: Longitude: 77° 48' 20,000 Evaluator: County: **Total Points:** Other UNT Fishing (M Stream Determination (circle one) Stream is at least intermittent Ephemeral Intermittent Perennial e.g. Quad Name: if ≥ 19 or perennial if ≥ 30* A. Geomorphology (Subtotal = Absent Weak Moderate Strong 1a. Continuity of channel bed and bank 0 2 3 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 4. Particle size of stream substrate 0 (1) 2 3 5. Active/relict floodplain 0 2 3 6. Depositional bars or benches 0 2 3 7. Recent alluvial deposits 1 2 3 0 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 No = 0 Yes = 3a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = 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 1.5 0.5 17. Soil-based evidence of high water table? No = 0Yes = 3C. Biology (Subtotal = 18. Fibrous roots in streambed 3 2 0 19. Rooted upland plants in streambed 3 0 2 1 20. Macrobenthos (note diversity and abundance) 0 2 3 21. Aquatic Mollusks 1 2 0 3 22. Fish 0 0.5 1 1.5 23. Crayfish 0 0.5 1 1.5 24. Amphibians 0.5 0 1 1.5 25. Algae 0 0.5 1.5 26. Wetland plants in streambed FACW = 0.75; OBL = 1.5 Other = 0 *perennial streams may also be identified using other methods. See p. 35 of manual. Notes: Sketch: wnag003



Waterbody snag004 facing north upstream



Waterbody snag004 facing south downstream



Waterbody snag004 facing east cross stream

Open Waterbody Data Sheet

Survey Description	îven						
Project Name:		Waterbody Name	e :		Waterbody ID:		Date:
Southeastern Reliab	oility	Unname	<u>(</u>)		onah002		7-31-74
State: C	ounty:		npany:	Crev	w Member Initials:	Photos:	
$ \mathcal{N}_{\mathcal{C}} $	NASI	出		77	DDB		
Tract Number(s):		Nea	rest Milepost:		Associated Wetland	d ID(s):	
18-0	13		329				
Survey Type: (check one)	⊠Centerline	e □Re-Ro	oute \square	Access Road	□Other:		
Physical Attributes							Section Section
Waterbody Tyne:		Pond □ Lake	□ Reservoir □ I	mpoundment	□ Oxbow 🎉 Other:	Excau	nted irrigation
Hydrologic Regime:	Permanently		mipermanently Flo			الات Temporari	
онwм	OHWM India	ator:				,	-
Height: NA	(check all that ap	ply)	Clear line on bank	□Shelving	□Wrested vegetation	□Sco	uring □Water staining
<u> </u>	□Bent vegetat	, matted, or missir tion	ng □Wrack line	□Litter and debris	d □Abrupt plar community ch		naracteristic change
Depth of Water:		Bank height (a	verage):		Bank slope (ave	rage):	
N/A - 2-5	_ft.		<u>5</u> .tt.			<i>(</i> de	grees
Qualitative Attribut	oc - Art - Art						n n jern 1804 an jedinari i j
Water Appearance:							
(check one)	No water □	Clear XTurbio	d □Sheen on surface	□Surfac scum	ce □Algal □ mats	Other:	
Substrate: (check all that apply)	Bedrock 🗆 Bo	oulder 🗆 Cobble	e 🗆 Gravel 📗	Sand X	Silt/ clay □ Organic	□ Other:	
% of Substrate:	%	%%	6 %	50% 5	<u> </u>	%	
Width of Riparian Zone	1 0 1	-					
10 66 ft.	(check all that a	apply)	Trees:	-	aplings/Shrubs:	Herbs A	, <u>L</u>
N/A 🗆	Avg. DBH	of Dominants:	in.	3-	<u>5</u> in.	12	e, gho
Dominant Bank Vegetat	tion (list): Be	ulangra	, sody	rigra, U	Imus aketa	, Ligne	idanbar
	star	acitha				•	
Aquatic Habitats (ex: sub	:	uatic vegetation, overha		packs, large submerç	ged wood, riffles, deep pools,	etc.):	
Aquatic Organisms Obs				frag			
T&E Species Observed	(list): NDT	UE					
Disturbances (ex: livesto Ag He)			discharge pipes):				
Waterbody is:							
(check one)	☐ Natural	X Artificial, m	an-made 🗆 N	Manipulated			
Waterbody Quality ^a :	□ High	☐ Moderate	₩ Low				
	•		/ \				

Waterbody	ID:	_
MATA	44XD7	

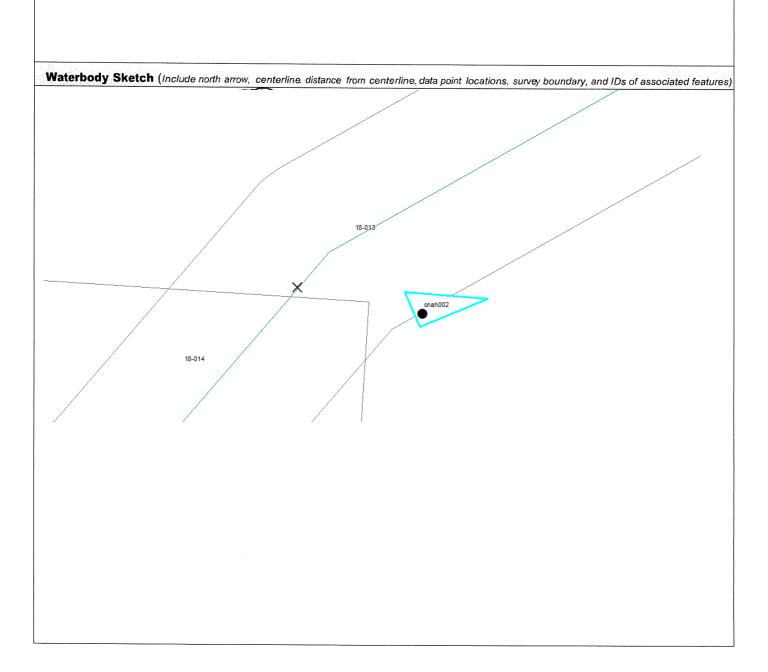
High Quality: Natural, natural bank vegetation around entire waterbody; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

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:

Man-made irrigation pond.



onah002



Open water data point onah002 facing east



Open water data point onah002 facing south

USACE AID#	DWQ #

Site #____ (indicate on attached map)



SNABIOO STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following	a information	for the stream	a reach under	accoccment.
Provide the following	ig imiormation	i for the stream	i reach under	assessifient.

1. Applicant's name: Dowlinion - Atlantic Coast Pipeline	2. Evaluator's name: 1000 Preuninger
3. Date of evaluation: 1/36/19	4. Time of evaluation: PM
5. Name of stream: UNT to Swift Creek	6. River basin: Tar - Pam
7. Approximate drainage area:	8. Stream order: 153
9. Length of reach evaluated: ^ \ \ o '	10. County: Wash
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
Latitude (ex. 34.872312):36.079722	Longitude (ex77.556611):_ 77.855833
Method location determined (circle): GPS Topo Sheet Ortho (A) 13. Location of reach under evaluation (note nearby roads and	landmarks and attach map identifying stream(s) location):
~ 2000 west of the intersection of m	lassengale Rd + Watsonseed Farm ROAD
14. Proposed channel work (if any): excavation	
15. Recent weather conditions: was significant	sin in last 24 hours
16. Site conditions at time of visit:	
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 pe	oint? 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 (NO)
21. Estimated watershed land use:	% Commercial% Industrial% Agricultural
<u>√</u> % Forested	% Cleared / Logged% Other ()
22. Bankfull width: 2.0	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 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 chainto a forest), the stream may be divided into smaller reaches treach. 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 elect 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 exception of the exception of the stream of the exception of th
gathering the data required by the United States Army quality. The total score resulting from the completion of	Date 1/36/15 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.
particular mingation rand or requirement. I offin subject to	

STREAM QUALITY ASSESSMENT WORKSHEET

# 1 2 3 4	CHARACTERISTICS Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points) Evidence of past human alteration (extensive alteration = 0; no alteration = max points) Riparian zone (no buffer = 0; contiguous, wide buffer = max points) Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	Coastal 0-5 0-6 0-6	Piedmont 0 − 4 0 − 5 0 − 4	Mountain 0-5 0-5	SCORE
2	(no flow or saturation = 0; strong flow = max points) Evidence of past human alteration (extensive alteration = 0; no alteration = max points) Riparian zone (no buffer = 0; contiguous, wide buffer = max points) Evidence of nutrient or chemical discharges	0-6	0-5	0-5	_
3	(extensive alteration = 0; no alteration = max points) Riparian zone (no buffer = 0; contiguous, wide buffer = max points) Evidence of nutrient or chemical discharges	0-6			l
	(no buffer = 0; contiguous, wide buffer = max points) Evidence of nutrient or chemical discharges	100000000000000000000000000000000000000	0-4	\	<u> </u>
4	Evidence of nutrient or chemical discharges			0-5	3
		0-5	0-4	0-4	3
A 5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	a
5 6 7	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	0
H 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	Э
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	ı
11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	l
) 12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0 – 5	1
13 14 14	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	3
B 14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0 – 3	0-4	0-5	0
کم 15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	•
16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	a
17 17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	l
HAB 18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	3
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	9
5 21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	1
21 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	1
	Total Points Possible	100	100	100	
	TOTAL SCORE (also enter on f	irst page)			30

^{*} 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

NC DWQ Stream Identification Form	Version 4.11		SNAT	3 NOO		
1 17 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Project/Site	minion antic Coast	Latitude: 36.			
Evaluator: Tono Preuninger	County: Nach	minion antic Coast Pipeline	Longitude: 77	7.855833		
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* 2 3	Stream Determ	ination (circle one) ermittent Perennial	Other e.g. Quad Name:			
A. Coomernhology (Cubtatel -) do	Absent	Weak	Moderate	Strong		
A. Geomorphology (Subtotal = \o)						
1 ^{a.} Continuity of channel bed and bank	0	1	, (D)	3		
2. Sinuosity of channel along thalweg	0		2	3		
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0		2	3		
A. Particle size of stream substrate	0	(1)	2	3		
Active/relict floodplain		1	2	3		
6. Depositional bars or benches	0	0	2	3		
•	0	- 6 -	2	3		
7. Recent alluvial deposits			2	3		
8. Headcuts	0	0.5	(1)			
9. Grade control	0	0.5		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	**************************************					
B. Hydrology (Subtotal =)						
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	2 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	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	6	0.5	1	1.5		
23. Cravfish	(0)	0.5	1	1.5		
24. Amphibians 25. Algae	6	0.5	1	1.5		
25. Algae	0	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 methods	See p. 35 of manu			<u>- </u>		
Notes: Excavated stream to provide		A 1	1 - IMea . Jee	fr. 92.2-c 2		
in base of ditch -		1.01	- V COMASO	3 Prosono		
Sketch: 5NAB100 / Sketch: 5NAB100 / Sketch: 5NAB100 / SNAH	01 CB					
1 1 150 - 1 - 130 - 1	- 4					

N



SNAB100 facing west upstream



SNAB100 facing south across



SNAB100 facing east downstream

Open Waterbody Data Sheet

Survey Descript	ion				DNAHOO		
Project Name:		Waterbody Name:	· · · · · · · · · · · · · · · · · · ·		Waterbody ID:		Date:
Southeastern Rel	iability	unnamed po	ond		ONAHOO	(7-24-14
State:	County:	Com		Crev	v Member Initials:	Photos:	
NC	NASH		DWEST	I	J, DB	3	
Tract Number(s):		Near	est Milepost:		Associated Wetland	ID(s):	
18029			331		NONE	***	
Survey Type: (check one)	Centerlin	e □Re-Rou	ute 🗆 🗸	Access Road	□Other:		
Physical Attribu	tes						
Waterbody Type: (check one) ☐Sto	ock Pond Natura	I Pond □ Lake □	Reservoir 🗆 I	mpoundment [Oxbow XOther:	manin	NADE POND
Hydrologic Regime:	☑ Permanently	Flooded Sem	ipermanently Flo	ooded 🗆 Sea	sonally Flooded	Temporar	ily Flooded
онwм	OHWM Indi		⊠Clear line	□Shelving	□Wrested		uring (ﷺ
Height:	t.		on bank	Onciving	vegetation	,	staining
,	□Ben vegeta	t, matted, or missing ition	line □Wrack	□Litter and debris	d ⊟Abrupt plant community ch		haracteristic change
Depth of Water:	ft.	Bank height (av			Bank slope (aver	113	
N/A	T,		(<u>O</u> ft.			<u>7()</u> d€	egrees
Qualitative Attril	outes						
Water Appearance: (check one)	□ No water □	Clear Turbid	□Sheen on surface	Surfac scum	e □Algal □e mats	Other:	
Substrate: (check all that apply)	☐ Bedrock ☐ B	oulder Cobble	•		Silt/ clay □ Organic		
% of Substrate:	%	%%	%	100 %	%	%	ó
Width of Riparian Zo	•	-	~/_	1.0		3.4	
	(check all that	арріу)	X⊤rees:		aplings/Shrubs:	★ Herbs	
N/A 🗆	Avg. DBH (approx.)	of Dominants:	<u> O</u> in.		in.		in.
Dominant Bank Veg Chasman kw	etation (list):	um, Liquid	ombors	styracollu	a		
		nuatic vegetation, overhand		packs, large submerg	ed wood, riffles, deep pools, e	elc.) :	
Aquatic Organisms	Observed (list):						
GAMBUSIC	· , leopard	1 bull from	JS				
T&E Species Observ	, ,						
Disturbances (ex: live	JONO CO	in waterhody, waste di	scharge nines)•				
			osilarga pipaoji				
Waterbody is:	☐ Natural	Ä Artificial, ma	n-made □ N	//anipulated	Addition to the state of the st		
Waterbody Quality ^a		7				······	
(check one)	• □ High	☐ Moderate	Low				

Waterbody ID:	
ONAHOO	(

^a **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.

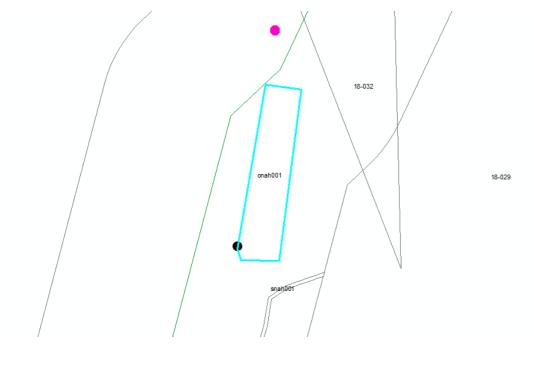
Moderate Quality: Altered by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or bank vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers 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:

Man-made excavated pond used for irragistion

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



onah001



Waterbody onah001 facing east



Waterbody onah001 facing south

SNAH001

USACE AID#	DWQ #	Site #	(indicate on attached map)
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STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for the stream reach und	der assessment:
1. Applicant's name: Dominion	2. Evaluator's name: Divise ST
3. Date of evaluation: 7-24-14	4. Time of evaluation: (0:54)
5. Name of stream:_ UNT to Swift Creek	6. River basin: IAR - PAMILCO
7. Approximate drainage area: \(\frac{100 Acres}{}\)	8. Stream order:
9. Length of reach evaluated:	10. County:NAS#
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
Latitude (ex. 34.872312): 36°04 37.940"	Longitude (ex77.556611): 77°57′29. 633″
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
17. Identify any special vectors as classification.	Section 10 Maridal Waters Lessential Fisheries Habitat
When the Waters Whoutstanding Resource Waters With	Nutrient Sensitive Waters Water Supply Watershed (I-IV)
18. Is there a pond or lake located upstream of the evaluation p	Nutrient Sensitive Waters Very Water Supply Watershed (I-IV)
	20. Does channel appear on USDA Soil Survey? YES
	7 8
	% Commercial% Industrial \(\sumsymbol{\sumsy
22. Bankfull width:	23. Bank height (from bed to top of bank):
	Gentle (2 to 4%)Steep (>10%)
location, terrain, vegetation, stream classification, etc. Every c	e 2): Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points
to each characteristic within the range shown for the ecor-	egion. Page 3 provides a brief description of how to review the
characteristics identified in the worksheet. Scores should refl	lect an overall assessment of the stream reach under evaluation. If a
characteristic cannot be evaluated due to site or weather conc	ditions, enter 0 in the scoring box and provide an explanation in the
into a forest), the stream may be divided into smaller reaches to	aracter of a stream under review (e.g., the stream flows from a pasture
reach. The total score assigned to a stream reach must range	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
highest quality.	octween a and 100, with a score of 100 representing a stream of the
Total Score (from reverse): Commen	ts:
	~ ~ ~ ~ 1 1/
Evaluator's Signature Man	Date 7-23-14
and commended to be used only a gathering the data required by the United States Army (s a guide to assist landowners and environmental professionals in Corps of Engineers to make a preliminary assessment of stream
quality. The total score resulting from the completion of	f 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 ASSESSM	ENT WOI	RKSHEET	· 3N+	H081
#	CHARACTERISTICS	ECOREO Coastal	GION POINT	F RANGE 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	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	3
3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	3
4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	4
] 5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	l
5 6 6 7	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0 – 4	0-2	2
I 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	2
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
12	Evidence of channel incision or widening (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	3
13 13 14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	l
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	0
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	M
20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	0
21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
21	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	3
	Total Points Possible	100	100	100	
	TOTAL SCORE (also enter on fin	rst page)			416

^{*} These characteristics are not assessed in coastal streams.

SNAH ODI

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

NC DWO Stream Identification Form Version 4.11 Date: 7-24-14 Project/Site: SERP Latitude: 36°0437.940 NASA Evaluator: DAWEST Longitude: 77°51′ 29 County: **Total Points:** 28.75 Other UNT to Swift Creek Stream Determination (circle one) Stream is at least intermittent Ephemeral Intermittent Perennial e.g. Quad Name: if ≥ 19 or perennial if ≥ 30^* A. Geomorphology (Subtotal = Absent Weak Moderate Strong 1a. Continuity of channel bed and bank 0 2 3 2. Sinuosity of channel along thalweg 0 2 3 3. In-channel structure: ex. riffle-pool, step-pool. 0 2 . 3 ripple-pool sequence 4. Particle size of stream substrate 0 3 5. Active/relict floodplain 0 2 3 6. Depositional bars or benches 0 2 3 7. Recent alluvial deposits 0 3 1 8. Headcuts 0 3 9. Grade control 0 0.5 1.5 10. Natural valley 0 0.5 (1.5)11. Second or greater order channel No = 0Yes = 3 ^a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = 12. Presence of Baseflow 0 2 3 13. Iron oxidizing bacteria 0 3 14. Leaf litter 1.5 0.5 0 15. Sediment on plants or debris 0 0.5 1.5 16. Organic debris lines or piles 0 0.5 1 1.5 17. Soil-based evidence of high water table? No = 0Yes = 3 C. Biology (Subtotal = 10-15 18. Fibrous roots in streambed 0 19. Rooted upland plants in streambed 2 0 20. Macrobenthos (note diversity and abundance) Q 1 2 3 21. Aquatic Mollusks D 1 2 3 22. Fish 0 0.5 1.5 23. Crayfish 0.5 1.5 1 24. Amphibians 0 **M**S 1.5 25. Algae 1 0.5 1.5 26. Wetland plants in streambed FACW = 0.75;) OBL = 1.5 Other = 0 *perennial streams may also be identified using other methods. See p. 35 of manual Notae. Sk snah001

snah001



Waterbody snah001 facing east upstream



Waterbody snah001 facing west downstream

snah001



Waterbody snah001 facing south cross stream

USACE AID#	DWQ #	Site #	_ (indicate on attached map)

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Provide the following information for the stream reach under assessment:
. Applicant's name: Dominion 2. Evaluator's name: 7500
3. Date of evaluation: Aug. 20, 2014 4. Time of evaluation: 5:40 ANT to South Cont. 6. River basin: Tax Panles
S. Name of stream:
7. Approximate drainage area:
D. Length of reach evaluated: 200 Feet 10. County: Nash
11. Site coordinates (if known): prefer in decimal degrees. 12. Subdivision name (if any):
Latitude (ex. 34.872312): 36° 64′ 24.181″ Longitude (ex77.556611): 77° 51′ 38.619″
Method location determined (circle): GPS Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other
14. Proposed channel work (if any):
15. Recent weather conditions: Range
16. Site conditions at time of visit: (Near / Partly (Joudy - Wooled
17. Identify any special waterway classifications known:Section 10Tidal WatersEssential Fisheries Habita
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 Tyes, 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: 10 % Residential % Commercial % Industrial 40% Agricultural
56% 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:StraightOccasional bendsFrequent meanderVery sinuousBraided channel
Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based o 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 characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If 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 pastur 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. Comments: Perental Comments: Perental
Date August 20, 2014
Evaluator's Signature / (Attained to be used only as a guide to assist landowners and environmental professionals)
the their of States Army Corns of Engineers to make a Dichimilary assessment of street
gathering the data required by the United States Army Corps of English subject to USACE approval and does not imply quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply quality. The total score resulting from the completion of this form is subject to USACE approval and does not imply quality.

particular mitigation ratio or requirement. Form subject to change - version 06/03. To Comment, please call 919-876-8441 x 26.

			ECOREGION POINT RANGE			SCORE	
	#	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	4	
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	4	
	3	Riparian zone (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	
	5	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	2	
	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	0	
1	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	4	
1	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	
ı	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	4	
I	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	4	
	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	2	
Ì	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	12	
	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	4	
THE REAL PROPERTY.	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	NA	
	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	7	
	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	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 f	irst page)			63	

^{*} These characteristics are not assessed in coastal streams.

SNA 4028

NC DWQ Stream Identification Form Version 4.11 Project/Site: SE Reliability Latitude: 3609' 24.1814 Date: August 20, 2014 Longitude: 77051'38-619" Evaluator: County: **Total Points:** Stream Determination (circle one) Ephemeral Intermittent Perennial Other Stream is at least intermittent e.g. Quad Name if ≥ 19 or perennial if ≥ 30* Strong Absent Weak Moderate A. Geomorphology (Subtotal = 1a. Continuity of channel bed and bank 0 (3) (2) 2. Sinuosity of channel along thalweg 0 3 1 3. In-channel structure: ex. riffle-pool, step-pool, (2) 0 1 3 ripple-pool sequence 3 0 4. Particle size of stream substrate 1 2 0 1 3 5. Active/relict floodplain 0 1) 3 6. Depositional bars or benches 2 (2) 3 7. Recent alluvial deposits 0 1 3 8. Headcuts 0 1.5 9. Grade control (1 0 0.5 0.5 1.5 10. Natural valley 0 No 7 0) 11. Second or greater order channel Yes = 3artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = (3 12. Presence of Baseflow 0 1 2 0 3 13. Iron oxidizing bacteria 0 1 14. Leaf litter 1.5 0.5 0 15. Sediment on plants or debris 0 1 1.5 0.5 16. Organic debris lines or piles 0 0.5 1.5 17. Soil-based evidence of high water table? No = 0Yes = 3 C. Biology (Subtotal = 2 0 18. Fibrous roots in streambed 19. Rooted upland plants in streambed 3 1 2 **不**) 2 3 20. Macrobenthos (note diversity and abundance) 0 2 3 21. Aquatic Mollusks 0 0.5 1.5 22. Fish 0 1 0.5 23. Crayfish 0 7) 1.5 0 0.5 1.5 24. Amphibians (0.5) 1.5 0 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: Sketch: (/L Corridor

SNAH O



Waterbody snah028 facing north upstream



Waterbody snah028 facing south downstream



Waterbody snah028 facing east cross stream

SNAH	002	
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4 0000 1000 1000 1000 1000 1000 1000 10			~ - ~
USACE AID#	DWQ #	Site #	(indicate on attached map)





Provide the following information for the stream reach und	er assessment:
1. Applicant's name: Down con	2. Evaluator's name: DDWES 7
3. Date of evaluation: 7-2-(-14	4. Time of evaluation: (2:34
5. Name of stream: Un roems of trib. Swift Creek	6. River basin: TAR - Pamico
7. Approximate drainage area: 750 acres	8. Stream order:
9. Length of reach evaluated: 100 \$4	10. County: N RSA
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
Latitude (ex. 34.872312): $\frac{3604''22.246''}{}$	Longitude (ex77.556611): 77°51′43.892 "
Method location determined (circle): GPS Topo Sheet Ortho (A 13. Location of reach under evaluation (note nearby roads and l	
14. Proposed channel work (if any):	_
15. Recent weather conditions: Dre - Lew	showers
16. Site conditions at time of visit:	
17. Identify any special waterway classifications known: M Trout Waters M Outstanding Resource Waters	Section 10 <u>MA</u> Tidal Waters <u>MA</u> Essential Fisheries Habitat Nutrient Sensitive Waters <u>MA</u> Water Supply Watershed (I-IV)
	oint? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map?	20. Does channel appear on USDA Soil Survey? YES NO
	% Commercial% Industrial & Agricultural
<u>2</u> % 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:StraightOccasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every of to each characteristic within the range shown for the econocharacteristics identified in the worksheet. Scores should reflect characteristic cannot be evaluated due to site or weather concomment section. Where there are obvious changes in the characteristic cannot be divided into smaller reaches the stream may be divided into small	
Evaluator's Signature And American	Date 7-24-/4 s a guide to assist landowners and environmental professionals in
gathering the data required by the United States Army (s a guide to assist landowners and environmental professionals in Corps of Engineers to make a preliminary assessment of stream If 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.

	#	CHADACTEDISTICS	ECOREGION POINT RANGE			accore.
	#	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	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	1
	3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	0
	4	Evidence of nutrient or chemical discharges (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	2
PHYSICAL	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	0
	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	0
	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	
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0 – 4	0-5	MA
Z	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0 – 4	0 – 5	1
	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	/
STABILITY	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	/
<u>-</u>	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	
ITA	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	2
HABITAT	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0 – 5	0-5	0-5	1
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	NA
Y	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	2
507	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	2
	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	0.5/
	illa Mark	TOTAL SCORE (also enter on fir	rst page)			28

^{*} These characteristics are not assessed in coastal streams.

SNAH002 Latitude: 36'04'22746' NC DWQ Stream Identification Form Version 4.11 7-24-14 Project/Site: SERP Date: Evaluator: DDWEST Longitude: 77°51′43,892 County: NASH Other UNT to Swift Creek **Total Points:** 32.5 Stream Determination (circle one) Stream is at least intermittent Ephemeral Intermittent Perennial e.g. Quad Name: if ≥ 19 or perennial if ≥ 30* A. Geomorphology (Subtotal = Absent Weak Moderate Strong 1a. Continuity of channel bed and bank 0 (2) 3 2. Sinuosity of channel along thalweg 0 1 3 3. In-channel structure: ex. riffle-pool, step-pool, 0 2 3 ripple-pool sequence 4. Particle size of stream substrate 0 2 3 1 5. Active/relict floodplain (O) 3 6. Depositional bars or benches 0 3 7. Recent alluvial deposits 0 2) 3 8. Headcuts 0 3 2 9. Grade control (0.5)0 1 1.5 10. Natural valley 0 1 0.5 1.5 11. Second or greater order channel $(N_0 = 0)$ Yes = 3 a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = 12. Presence of Baseflow 0 1 2 3 13. Iron oxidizing bacteria 0 2 3 1 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? No = 0 ∕**Y**es = 3 C. Biology (Subtotal = 18. Fibrous roots in streambed 2 0 19. Rooted upland plants in streambed (3) 2 1 0 20. Macrobenthos (note diversity and abundance) 2 0 1 3 21. Aquatic Mollusks 0 3 22. Fish 0 0.5 (1 1.5 23. Crayfish 0 0.5 1.5 24. Amphibians 0 0.5 1.5 (0.5) 25. Algae 0 1.5 26. Wetland plants in streambed FACW = 0.75; OBL = 1.5 Other = 0 *perennial streams may also be identified using other methods. See p. 35 of manual. Notes: snah002



Waterbody snah002 facing north upstream



Waterbody snah002 facing south downstream



Waterbody snah002 facing east cross stream

SNAHOO3

USACE AID#	DWQ #	Site #	(indicate on attached map)

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STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for the stream reach und	er assessment:
1. Applicant's name: Dominion	2. Evaluator's name: DOWES T
3. Date of evaluation: 7-24-14	4. Time of evaluation:
5. Name of stream: Swift crook	6. River basin: TAR-PAMICO
7. Approximate drainage area: > 1000 acros	8. Stream order: 2 nd
9. Length of reach evaluated: USOS+	10. County:
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
Latitude (ex. 34.872312): <u>36'04' /5 316"</u>	Longitude (ex77.556611): 77°51'54, 659"
Method location determined (circle): QPS Topo Sheet Ortho (A 13. Location of reach under evaluation (note nearby roads and l	Aerial) Photo/GIS Other GIS Other
14. Proposed channel work (if any):	
15. Recent weather conditions: Dry - Lew	Showers
16. Site conditions at time of visit: Norma	
17. Identify any special waterway classifications known:	Section 10 La Fidal Waters La Habitat Nutrient Sensitive Waters La Water Supply Watershed La Habitat
18. Is there a pond or lake located upstream of the evaluation po	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 500% Agricultural
50% Forested	% Cleared / Logged% Other (
22. Bankfull width:	% 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:StraightOccasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every control to each characteristic within the range shown for the ecore characteristics identified in the worksheet. Scores should reflich characteristic cannot be evaluated due to site or weather concomment section. Where there are obvious changes in the chainto a forest), the stream may be divided into smaller reaches the	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 ect an overall assessment of the stream reach under evaluation. If a ditions, enter 0 in the scoring box and provide an explanation in the racter 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
Evaluator's Signature Apply Com	Date 7-24/-/ s a guide to assist landowners and environmental professionals in
gathering the data required by the United States Army (s a guide to assist landowners and environmental professionals in Corps of Engineers to make a preliminary assessment of stream 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

STREAM QUALITY ASSESSMENT WORKSHEET SIVERAL OUT

H	# CHARACTERISTICS		ECOREGION POINT RANGE		
π		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	5
2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0 – 5	3
3	Riparian zone (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	2
AL 2	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0 – 3	0-4	0-4	3
5 6 6 7	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	2
Ha 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	墨
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	
-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	3
13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	3
13 14 14 14 14 14 14 14 14 14 14 14 14 14	Root depth and density on banks (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	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	3
Y 17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	5
17 17 18 18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	4
<u> </u>	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	3_
9 21 21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	2
21 22 22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	4
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	
4494	TOTAL SCORE (also enter on fi	rst page)			63

^{*} These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11

	ALL TOLOGOGIE HAZ	
Date: 7-2-(-)-(Project/Site: SERP	Latitude: 36°04'15.316"
Evaluator: DDWEST	County: NAS H	Longitude: 77°51'54.659"
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other Swift Creek e.g. Quad Name:
Λ.		

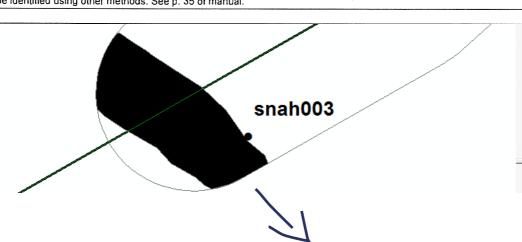
29				
A. Geomorphology (Subtotal = 🗸 📗)	Absent	Weak	Moderate	Strong
1 ^{a.} Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	(2)	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
Particle size of stream substrate	0	1	2	(3)
5. Active/relict floodplain	0	1	2	(3)
6. Depositional bars or benches	0	1	2	(3)
7. Recent alluvial deposits	0	1	2	(3)
8. Headcuts	0	1	2	(3)
9. Grade control	0	0.5	1	(15)
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				
B. Hydrology (Subtotal =)				(X)
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	71.5)

D. Hydrology (Sublotal				
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	(15)
16. Organic debris lines or piles	0	0.5	1	(1.5)
17. Soil-based evidence of high water table?	No	0 = 0	/ Yes	= 3
C. Biology (Subtotal = 1975)	A			

C. Biology (Subtotal = $t^{-1}(x)$)				
18. Fibrous roots in streambed	3-	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	O_
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	0	0.5	1	(1.5)
24. Amphibians	0	0.5	1	(1.5)
25. Algae	0	0.5		(1.5)
26. Wetland plants in streambed		FACW = 0.75(OBL = 1.5 Other =	0

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

Notes:





Waterbody snah003 facing north upstream



Waterbody snah003 facing south downstream



Waterbody snah003 facing west cross stream

USACE AID#	DWQ #	G11	(indicate on attached map
general nature recognition,	Control of the second of the s		

1999	9971	9599	9XQ	925	9609	ė
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88	,	, 90	٠,	ŧ	锁	

Contraction and Contraction an	TISSESSITE IT WORKSHEET
Provide the following information for the stream reac	ch under assessment:
1. Applicant's name: Dominion	2. Evaluator's name: DDWSST
3. Date of evaluation: 7-25-14	4. Time of evaluation:
5. Name of stream: un med tob to Flate	Rock Branch TAr-pami (0
7. Approximate drainage area: 7100 cerce	≥ 8. Stream order:
9. Length of reach evaluated: (55 f	10. County:
11. Site coordinates (if known): prefer in decimal degrees	
Latitude (ex. 34.872312): 36°04' 08, 587"	Longitude (ex -77.556611) 7° (2) 1/1.8(1)
Method location determined (circle): GPS Topo Sheet O	Ortho (Aerial) Photo/GIS Other GIS Others and landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): NOAF	
15. Recent weather conditions:	w showers
16. Site conditions at time of visit:	
17. Identify any special waterway classifications known: VETrout Waters Outstanding Resource Waters	Section 10 Maters Essential Fisheries Habitat Nutrient Sensitive Waters Nature Supply Watershed Matery
18. Is there a pond or lake located upstream of the evaluation	ion point? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES NO	20 Does channel arreas as LIGDA S. 118
21. Estimated watershed land use:% Residential	The survey of the latest the late
30% Forested	% Commercial% Industrial% Agricultural% Cleared / Logged% Other ()
22. Bankfull width:	22 Paulahai 1776
24. Channel slope down center of stream: Flat (0 to 29)	%) Gentle (2 to 49/) M. 1 (4 + 100)
25. Channel sinuosity: Straight Occasional bend	dsFrequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Evento each characteristic within the range shown for the characteristics identified in the worksheet. Scores should characteristic cannot be evaluated due to site or weather comment section. Where there are obvious changes in the into a forest), the stream may be divided into smaller reach	page 2): Begin by determining the most appropriate ecoregion based on very characteristic must be scored using the same ecoregion. Assign points ecoregion. Page 3 provides a brief description of how to review the direflect an overall assessment of the stream reach under evaluation. If a conditions, enter 0 in the scoring box and provide an explanation in the e character of a stream under review (e.g., the stream flows from a pasture hes that display more continuity, and a separate form used to evaluate each ange between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): Comi	ments: Chrome 1200 Stream/porennie
Evaluator's Signature This channel evaluation form is intended to be used an	Date 7-25-14
gathering the data required by the United States Arm quality. The total score resulting from the completion particular mitigation ratio or requirement. Form subject	Date / 2 / 2 / 4 lly 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 to change - version 06/03. To Communication of the change - version 06/03.

particular mitigation ratio or requirement. Form subject to change – version 06/03. To Comment, please call 919-876-8441 x 26.

SNAH DOZ

		Presence	CHARACTERISTICS of flow / persistent pools in stream			REGION I				
		(no flow or s	of 110w / persistent pools:		Cons	MEGION I	POIN	TDAN	~	War.
		Trut	of flow / persistent pools in stream aturation = 0; strong flow = max points ence of past human alteration		Coasi	al Piedn	nont	TAIN	GE	and
		(extensive)	ence of past human alteration eration = 0; strong flow = max points eration = 0; no alteration = max points Riparian zone	3)	0-5		301000000000000000000000000000000000000	Moun	tain	SCC
		- Treensive all	-Auduli = U: no aleas :			0-	4	0-3	, 7	
				1	0-6				'	3
	4	the butter = 0.	Riparian zone contiguous, wide buffer = max points) f nutrient or chemical disch.			_ 0-3	5	0 – 5		
	L	Evidence of	f nutrient or all nutrier = max points)		0-6		$- \downarrow$			1
	-	- unou	arges = 0 uistnarges			_ 0-4	- 1	0-5		
Y	5	(no dia 1	roundwater discharge prings seem		0-5		-+			7
PHYSICAL			11 In cc			0-4		0-4		
2	6	Prese	nce of adjacent floodplain 0; extensive flood	,,,	0-3		-+			フ
\mathbf{E}^{\dagger}		1	IJ PVtom.	us)		0-4		0-4		
	7	Tr			0-4		$=$ \downarrow $=$			2
F		(deeply entrenches	chment / floodplain access 1 = 0; frequent flooding = max points) 1 = 0 adjacent wetlands	$-\downarrow$	U 4	0-4		0-2		
	8	n_	Hoquelli Hooding		0-5	T	4_			7
H		$\frac{1}{\text{(no wetlands}} = 0.1$	o, requent flooding = max points) ce of adjacent wetlands arge adjacent		v-3 	0-4		0-2		-
	9				0.			U-2		1
L		(extensive character)	Channel sinuosity tion = 0; natural meander = max points Sediment input		0-6	0-4		0-2	1-	+
	10	u	uon = U: natural		^ -		\perp	U = 2		2_
L	10	(extensivo a	Sediment input)	0 – 5	0-4		0 – 3	888	
Ι.	. 1	- uchosition-	~ 0. 1'					υ <u>3</u>	1 ($\hat{\bigcirc}$
	li	Size & diver	Sediment input = 0; little or no sediment = max points) sity of channel bed substrate 0; large diverse si		0-5	0-4		0-4		
T			O. I Substrate					0-4		1
	2	Evidence of c	hannel incision or widening		NA*	0-4		0 – 5		
		$\underline{\underline{\text{tueeply incised}}} = 0$	Stable bed & L. J.					U-3	1 117	A
	3	Presence	of major bank failures		0-5	0-4		0 – 5	,	
-	-	(severe erosion = 0: nc	of major bank failures Derosion, stable banks = max points) h and density on h					<i>j</i> – 3		
1 14	4	Root dent	h and density on banks	()-5	0-5	1) – 5		
<u> </u>		(no visible roots = 0.7	achsity on Danks					,		
15		Impact by agricultur	conservous throughout = max points)	0) – 3	0-4	'n	1-5	4	
		(substantial impos	e, livestock, or timber production				V	- J	(
16		Presence of wise	t = 0; no evidence = max points)	0	-5	0-4	۵	-5	1	
L		0 riffles/ripples on	e-pool/ripple-pool complexes				v		l	
		rr to or pou	15 TU, Well-developed - man.	0	-3	0-5	Λ	-6	1	
17	17	Hal tle or no balisis	pitat complexity	 			U	_ U	l	- 1
	+	$\frac{1}{100}$ or no nativat = 0; fi	equent, varied babitate	0	-6	0-6	^	7		-+
18	1.	Canopy cor	verage over streambed			<u> </u>	v	-6	1	-
	1	= shading vegetation =	U; continuous canony = may == i	0 -	-5	0-5	n	-5	~	\dashv
19							v:	J	3	
		(deeply embedded	d = 0. loose structure - \	N/	4*	0 – 4	n	-4		
20		* * COUNTE OF NITES	m invortabusts.				U.=	-4	NA	5
		io evidence – 0, comm	ion, numerous types = may points)	0 -	-4	0-5	0 -	_		
21			POATAWALILI			9 9	U ~	.)		
	-	<u>io evidence = 0;</u> comm	on, numerous types = max points)	0 -	- 4	0-4	۸	,		
22	414.000		SPRCE Of tick			V 7	0 –	4	3	
		o evidence = 0; comm	on, numerous types = max points)	0 –	4	0-4	n	1	$\overline{}$	\neg
23		Lviuen	Ce of Wildlife nea			<u> </u>	0	4	\mathcal{O}	
	1	(no evidence = 0; abi	andant evidence = max points)	0	6	0-5	0	-	2	\dashv
							0 –	٠ .	5	
		Total Point	s Possible	100	0	100	10	0		
			TAL SCORE (also enter on first			100	100	,		

^{*} 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

NC DWQ Stream Identification F	orm Version 4	.11	SNA	14006
Evaluator: OO	Project/Si	te: SERP		
Evaluator: DDWEST Total Points:	County:		Latitude:	566468.5
Total Points: Stream is at least intermittent if ≥ 19 or perennial if $\geq 30^*$		Vast	Longitude	17/2°52′10.
57. 25	Stream Det	ermination (circle of		_ (/ 2 / 10)
A. Geomorphola	-pricine a	Intermittent Peren		то ғыс _{me:} Rock Bran
A. Geomorphology (Subtotal =)7.5) 1a. Continuity of channel bed and bank 2. Sinuosity of channel bed and bank			3 dad Na	me: Nock brai
2. Sinunsity of all	Absent 0	Weak	Moderate	
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1-3	2	Strong
ripple-pool sequence			2	(3)
Particle size of stream substrate 5. Active/rolling in the stream substrate	0	0		3
Active/relict floodplain Depositional I	0	1	2	3
6. Depositional bars or benches 7. Recent allowing	0	(1)	(2)	3
7. Recent alluvial deposits 8. Headcuts	0	1 (1)	2	3
9. Grade control	0	1 (1)	2	3
10. Natural valley	0		2	3
11. Second or many	0	(0.5)	2	3
11. Second or greater order channel	0	0.5	(1)	1.5
artificial ditches are not rated; see discussions in manual B. Hydrology (Supportal –	N	10 € 0		1.5
			Yes :	= 3
12. Presence of Baseflow				
13. Iron oxidizing bacteria	0	1	(2)	
14. Leaf litter	0	(1)	2	3
15. Sediment on plants or debris	(0.85)		0.5	3
16. Organic debris lines or piles	0	0.5	(1)	0
17. Soil-based evidence of high water table?	0	0.5	13	1.5
O. Diology (Subtotal = 17)	No	= 0	Yes #	1.5
18. Fibrous roots in streambed				
19. Rooted upland plants in streambed	3 (3)	2	1	0
20. Macrobenthos (note diversity and abundance)	0	2	1	0
- 13 Addate Monusks	0	1	(2)	3
22. Fish	(0)	1	2	3
23. Crayfish		0.5	1	1.5
24. Amphibians	0	0.5	<u> </u>	1.5
25. Algae	0	0.5		1.5
26. Wetland plants in streambed		FACW = 0.75, OBL	$\frac{1}{100}$	1.5
*perennial streams may also be identified using other methods. S	See p. 35 of manual.	V.1011 0.19, OBL	. = 1.5 Other = 0	
Total.				
Sketch:				
	_			With the second
× //				
	$/$ λ			
	/ / \			***
	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			



Waterbody snah006 facing west upstream



Waterbody snah006 facing east downstream



Waterbody snah006 facing south cross stream

USACE AID#	snah005
DWQ #_	
Provide the following information for the stream reach under assess 1. Applicant's name:	Site # (indicate on attached
Provide the following information for the stream reach under assessment: 3. Date of evely at	T WODAY
1. Applicant's name: 1. Applic	WORKSHEET
3. Date of assessment:	
5. Name of	me: DDWSST
7. Approximate drainage area: + 100 (X) a. Flat rould 6. River basin:	tion: 12:29
9. Length of reach evaluated: 8. Stream order:	Tar-Panilico
Latitude (ex. 34.872312): 2/2 \(\text{O} \) 17. Site coordinates (if known): prefer in decimal degrees.	MASH
Method location in Method locati	me (if any):
13. Location of reach under evaluation of re	6611): 77°52'32.969"
Oth Control (Note nearby roads and landmarks and attach	er GIS Other_
13. Location of reach under evaluation (note nearby roads and landmarks and attach rough): 14. Proposed channel work (if any):	пар identifying stream(s) location):
15. Recent weather conditions:	
16. Site conditions at time of visit:	
17. Identify any special waterway close is	
17. Identify any special waterway classifications known: MA Section 10 NAT	h HA
Outstanding D	idal Waters MEssential Fisheries Habita
a point of lake located linstream of the	ers Water Supply Watershed Material Fisheries Habita
a chainer appear on USGS and a constant of the	s commate tile Water surface ones.
1. Estimated watershed land use: % Residential Commercial	ar on USDA Soil Survey? YES NO
% Forested	% Industrial% Agricultural
2. Bankfull width: % Cleared / Logged	% Other (
4. Channel slope down center of stream: Flat (0 to 2%) Gentle (2 to 4%) Gentle (2 to 4%)	
Straight Occasional bends	Moderate (4 to 10%)Steep (>10%)
structions for completion of worksheet (located on page 2): Begin by determining each characteristic within the range shown for the ecoregion. Page 3 provides aracteristics identified in the worksheet.	ing the most appropriate ecoregion based on
aracteristics identified in the workshoot.	a brief description of how to
The state of the control of the state of the	· · · · · · · · · · · · · · · · · · ·
o a totesti, tile stream may be divided into	CVICW (C.g., IIIC SITEAM HOWE from a posture
tch. The total score assigned to a stream reach must range between 0 and 100, with thest quality.	y, and a separate form used to evaluate each
	or too representing a stream of the
tal Score (from reverse): 60 Comments:	
aluator's Signature sistement of the control of the data required by the United States Army Corps of Engineers to make the control of the con	7 2 - 1/
is channel evaluation form is i-t-	
hering the data required by the United States Army Corps of Engineers to mality. The total score resulting from the completion of this form is subject to	Date

#	CHARACTERISTICS	ECORE	GION POINT	FRANCE	
4		Coastal	Piedmont	Mountain	SCOR
1	Presence of flow / persistent pools in stream			Mountain	 , , ,
	(no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	14
2	Evidence of past human alteration				
	(extensive alteration = 0; no alteration = max points)	0-6	0-5	0 - 5	3
3	Riparian zone				
	(no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	1 4
4	Evidence of nutrient or chemical discharges				
	(extensive discharges = 0; no discharges = max points)	0 – 5	0-4	0-4	4
5	Groundwater discharge				5
	(no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0 - 4	_3
6	Presence of adjacent floodplain	6			
	(no floodplain = 0; extensive floodplain = max points)	0 - 4	0-4	0 - 2	2
7	Entrenchment / floodplain access	0 -			
	(deeply entrenched = 0; frequent flooding = max points)	0 – 5	0-4	0-2	\mathcal{I}
8	Presence of adjacent wetlands				<u>2</u> 3
	(no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	.3
9	Channel sinuosity	0 4	2		
-	(extensive channelization = 0; natural meander = max points)	0-5	0 – 4	0-3	4
10	Sediment input	0 5			
	(extensive deposition= 0; little or no sediment = max points)	0-5	0 – 4	0-4	3
11	Size & diversity of channel bed substrate	NTA*			
	(fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	WA
12	Evidence of channel incision or widening	0-5			WA 2
	(deeply incised = 0; stable bed & banks = max points)	0-3	0-4	0 – 5	2
13	Presence of major bank failures	0-5	0.5		$\overline{}$
	(severe erosion = 0; no erosion, stable banks = max points)	U 3	0-5	0-5	1
14	Root depth and density on banks	0-3	0.4		1
	(no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	l
15	Impact by agriculture, livestock, or timber production	0-5	0-4		2
	(substantial impact =0; no evidence = max points)	0-3	0-4	0-5	L
16	Presence of riffle-pool/ripple-pool complexes	0-3	0-5	0.7	\sim
	(no riffles/ripples or pools = 0; well-developed = max points)		0-3	0-6	
17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	1/
7,	Canony coverage every de la latestate = max points)	· ·	U=U	V-0	
18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0 - 5	0-5	Ü
7,7	Substrate embeddedness		U 3	U J	_7
19	(deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	A TIA
	Presence of stream invertebrates (see page 4)		U T	0-4	M
20	(no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	2
7.	Presence of amphibians			0-3	
21	(no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	7
22	Presence of fish		•	0 7	2
22	(no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	1
22	Evidence of wildlife use		- 1	· ·	
23	(no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	U
				, ,	
	Total Points Possible	100	100	100	1
	TOTAL SCORE (also enter on firs		<u> </u>		
	- CIAL SCORE (also enter on firs	i page)			60

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

Date: 7-25-14	Version 4.11	200		NAHC
	Project/Site:		Latitude: Z	13' 34.4
Evaluator: DOWEST	County: N	95H	Longitude: 77	70-7127
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determi	nation (circle one) rmittent (Perennial)	Other UNT t	to Flat Rock
A. Geomorphology (Subtotal = $21,5$)	^ h			
1 ^a Continuity of channel bed and bank	Absent 0	Weak	Moderate	Strong
2. Sinuosity of channel along thalweg		1	(2)	3
3. In-channel structure: ex. riffle-pool, step-pool	0	1	2	(3)
rippie-pool sequence	0	1	(25)	3
. Particle size of stream substrate	0	1	(2)	
. Active/relict floodplain	0	1	2	3
. Depositional bars or benches	0	1		3
. Recent alluvial deposits	0	1	2	(3)
. Headcuts	0	1	-2	3
. Grade control	0		(2)	3
0. Natural valley	0	0.5		1.5
Second or greater order channel		0.5 =(0')	1	(1.5)
artificial ditches are not rated; see discussions in manual	INO		Yes =	3
. Hydrology (Subtotal = 100)				
2. Presence of Baseflow				
3. Iron oxidizing bacteria	0	1	2	(3)
Leaf litter			2	3
. Sediment on plants or debris	(1.5)		0.5	0
Organic debris lines or piles	0	(0.5)	1	1.5
Soil-based evidence of high water table?	0	0.5	(1)	1.5
Biology (Subtotal =	No:	= 0	Yes =	
3) (==3:0:0:		A CONTRACTOR OF THE PROPERTY O		
R. Fibrous roots in streambed	3	2	1	0
. Rooted upland plants in streambed	3	(2)	1	0
. Macrobenthos (note diversity and abundance)	0		(2)	
. Aquatic Mollusks	0)	1	2	3
		0.5	(1)	3
. Fish	1 U I			1.5
. Crayfish			4	
Crayfish Amphibians	0	0.5	1	(1.5)
Crayfish Amphibians Algae	0 0	0.5 0.5	1	1.5
Crayfish Amphibians Algae Wetland plants in streambed	0 0	0.5 0.5 0.5	1 1	
Crayfish Amphibians Algae	0 0	0.5 0.5	1 1	1.5



Waterbody snah005 facing west upstream



Waterbody snah005 facing east downstream

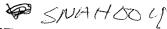


Waterbody snah005 facing south cross stream

DWQ#	
STREAM OVER	Site # (indicate on attached map)
STREAM QUALITY ASSESSMENT Provide the following information for the stream reach under assessment: Applicant's name: Date of evaluation: 7 - 2 (-14) 2. Evaluator:	WORKSHEET

Provide the following information for the stream reach under assessment: 1. Applicant's name: 2. Evaluator's name: 3. Date of evaluation: 7. Approximate drainage area: 10. County: 11. Site coordinates (if known): 12. Subdivision name (if any): 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: 16. Site conditions at time of visit: 17. Identify any special waterway classifications known: 18. Is there a pond or lake located upstream of the evaluation point? YES NO If yes, estimate the water surface area: 2. Evaluator's name: 3. Date of evaluation: 4. Time of evaluation: 6. Revier basin: 6. Stream order: 12. Subdivision name (if any): 12. Subdivision name (if any): 13. Location of reach under evaluation (note nearby roads and landmarks and attach map identifying stream(s) locations: 14. Proposed channel work (if any): 15. Recent weather conditions: 16. Site conditions at time of visit: 17. Identify any special waterway classifications known: 18. Is there a pond or lake located upstream of the evaluation point? YES NO If yes, estimate the water surface area: 40. Does channel app	004
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18. Is there a pond or lake located upstream of the evaluation point? YES NO If yes, estimate the water surface area: 20. Does channel appear on USGS quad map? YES NO 21. Estimated watershed land use: 22. Bankfull width: 23. Bankfull width: 24. Valuation point? YES NO 25. Does channel appear on USDA Soil Survey? YES NO 26. Commercial 27. Commercial 28. Is there a pond or lake located upstream of the evaluation point? YES NO 29. Does channel appear on USDA Soil Survey? YES NO 20. Does channel appear on USDA Soil Survey? YES NO 21. Estimated watershed land use: 22. Bankfull width: 23. Bankfull width: 24. Cleared / Logged 25. Cleared / Logged 26. Cleared / Logged 27. Cleared / Logged 28. Cleared / Logged	
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21. Estimated watershed land use: % Residential % Commercial % Industrial % Other (
21. Estimated watershed land use: % Residential % Commercial % Industrial % Other (ries Habitat
21. Estimated watershed land use: % Residential % Commercial % Industrial % Other (W/ (I-IV)
2. Bankfull width: "Residential — " Commercial — " Industrial — " Industrial — Agri	
2. Bankfull width: 60% Forested 60% Cleared / Logged 60% Agri	10
2. Bankfull Width: Other (
4 CS	
4. Unannel slope down center of stream: X 51)
4. Channel slope down center of stream: XFlat (0 to 2%) 5. Channel sinuosity:StraightOccasional bends Contractions forStraightOccasional bends Contractions forStraightOccasional bends	
5. Channel sinuosity:StraightOccasional bendsFrequent meanderVery sinuousBraided	(>10%)
outon, terrain vegetation	channel
cation, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to rearacteristic cannot be evaluated due to site or weether.	based on
difficultified in the coregion. Assi	211 Doints
mment section. Where the	ion. If a
o a forest) the stream and the changes in the character of a stream and provide an explanation	On in the
to a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a separate form used to evaluate the stream form used to eval	a pasture
mest quality. The second must range between 0 and 100, with a score of 100 representative	ate each
tal Score (from reverse):	in of the
Comments:	
with associated wethough stress	m
aluator's Signature And a	-
s channel evaluation form is intended to be used only as a guide to Date 7-25-14	
s channel evaluation form is intended to be used only as a guide to assist landowners and environmental profession. The total score resulting from the completion of this form is only.	

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		# CHARACTERISTICS	ECOREGION POINT RANGE			
00000000		Presence of flow /	Coastal	Piedmont		
	-		0.5		Mountain	SCOR
		Evidence of post human alteration (extensive alteration = 0	0-5	0-4	0-5	3
		(extensive alteration = 0; no alteration = max points)	0-6			
	3	Riparian zone	0-0	0-5	0-5	12
		——— (no butter = U: continuous: 1 se	0-6	0.4	 	
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0, and it is a point of the property of t	+	0-4	0-5	14
	ء اد	- I III Micchanna	0-5	0-4		+
PHVCIOAT	5	Groundwater discharge (no discharge = 0, resident discharge)			0-4	1 4
	6	U, Springs, seems wettend	0-3	0-4	0-4	
Š	4	Presence of adjacent floodplain (no floodplain = 0; extending a graph of the second floodplain and the second floodplain			0-4	12
	7	(no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	7)
	1	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points) Presence of adjacent models		 	0 2	12
	8	Presence of adjacent wetlands (no wetlands = 0.16	0-5	0-4	0-2	3
	-	(no wetlands = 0; large adjacent wetlands = max points)	0-6			
	9	Channel sinuosity (extensive channel sinuosity	0-6	0-4	0-2	2
	-	(extensive channelization = 0; natural meander = max points)	0-5			
	10	Sediment input		0-4	0 – 3	.3
	-	+ (extensive deposition= 0: little or no and)	0-5	0-4		
	11	Size & diversity of channel bed substrate (fine, homogenous = 0.4		0-4	0-4	4.
SIABILITY			NA*	0-4	0.5	1 100
	12	Evidence of channel incision or widening (deeply incised = 0; stable 1, 1, 2, 4			0-5	MA
	1.	V Stable Ded & banks	0-5	0-4	0-5	3
	13	Presence of major bank failures			V - J	3
	14	(severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	3
	17	(no visible roots = 0; dense roots d	0 0			
	15	Impact by agriculture, livestock, or timber production (substantial impact =0) no said	0-3	0-4	0-5	\$ [
1			0-5			
1	16		0-3	0 – 4	0-5	3
L		(no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5		
	17			0-3	0-6	
H		titue or no nabitat = 0; frequent, varied habitate	0-6	0-6	0.7	7
l	18	Canopy coverage over streambed		0 - 0	0-6	3
H		(see shading vegetation = 0; continuous canony = may points)	0-5	0-5	0-5	4
	19	QUDSITATE empaddadaara			0 0	
	-	(deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	NA
	20	1 1 cselice of stream invertebrates (see				1017
	ī. †	(no evidence – 0; common, numerous types = may points)	0-4	0-5	0-5	2
	21	Presence of amphibians			100	
	22	(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)	0-4	0.4		
	23	EVIDENCE of wildlife use	0 7	0-4	0-4	
		(no evidence = 0; abundant evidence = max points)	0-6	0-5	7 2	7
		Total Print		U-J	0-5	1
		Total Points Possible	100	100	100	1
		TOTAL SCORE ()			100	
30		TOTAL SCORE (also enter on first racteristics are not assessed in coastal streams.	page)		6	7/2

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

SNAH 004 NC DWQ Stream Identification Form Version 4.11 Date: Project/Site: SERP Evaluator: DOWEST County: NASH Longitude: 77°52'36.510" **Total Points:** Stream is at least intermittent Stream Determination (circle one) 33.25 Other UNT to Flat Rock Branch if ≥ 19 or perennial if ≥ 30* Ephemeral Intermittent Perennial e.g. Quad Name: A. Geomorphology (Subtotal = 15.5 Absent Weak Moderate 1^{a.} Continuity of channel bed and bank Strong 0 1 2. Sinuosity of channel along thalweg 2 3 0 3. In-channel structure: ex. riffle-pool, step-pool, (2 3 ripple-pool sequence 0 (2) 1 3 4. Particle size of stream substrate 0 2 5. Active/relict floodplain 3 0 1 6. Depositional bars or benches 3 0 2 7. Recent alluvial deposits 3 0 12 1 8. Headcuts 3 0 1 9. Grade control 3 0 0.5 10. Natural valley (1.5 0 0.5 $\overline{(1)}$ 11. Second or greater order channel 1.5 No = 0^a artificial ditches are not rated; see discussions in manual Yes = 3B. Hydrology (Subtotal = 12. Presence of Baseflow 0 1 (2) 13. Iron oxidizing bacteria 3 0 14. Leaf litter 2 3 1.5 (1 15. Sediment on plants or debris 0.5 0 0 0.5 16. Organic debris lines or piles 1 1.5 0 17. Soil-based evidence of high water table? 0.5 <u>7</u>7 1.5 No = 0C. Biology (Subtotal = , 9.25 _) Yes = 3 18. Fibrous roots in streambed (2) 1 19. Rooted upland plants in streambed 0 3 20. Macrobenthos (note diversity and abundance) 1 0 1 21. Aquatic Mollusks 2 3 O, 22. Fish 1 2 3 0 0.5 23. Crayfish 1.5 0 0.5 24. Amphibians 1 1.5 0 1 25. Algae 1.5 0 (0.5) 26. Wetland plants in streambed 1.5 FACW = 0.75;) OBL = 1.5 Other = 0 *perennial streams may also be identified using other methods. See p. 35 of manual Notes:



Waterbody snah004 facing west upstream



Waterbody snah004 facing east downstream



Waterbody snah004 facing south cross stream

NC DWQ Stream Identification Form Version 4.11

Date: 3-17-15	Project/Site: ACP		Latitude: 36.054732°		
Evaluator: DDWEST	County: Nas	h	Longitude: -77.879684°		
Total Points:Stream is at least intermittent 20.5 if \geq 19 or perennial if \geq 30*	Stream Determination (circle one) Ephemeral Intermittent Perennial		Other UNT to Flat Rock Bran e.g. Quad Name:		
A. Geomorphology (Subtotal = 9.5)	Absent	Weak	Moderate	Strong	
1 ^{a.} Continuity of channel bed and bank	0	1	2	3	
2. Sinuosity of channel along thalweg	0	1	2	3	
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3	
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	0	1	2	3	
3. 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	No	(€0)	Yes	5 = 3	
artificial ditches are not rated; see discussions in manual	•				
3. Hydrology (Subtotal =7)					
2. Presence of Baseflow	0	1	2	3	
3. Iron oxidizing bacteria	0	1	2	3	
4. Leaf litter	1.5	(1)	0.5	0	
5. Sediment on plants or debris	0	0.5	1	1.5	
6. Organic debris lines or piles	0	0.5	1	1.5	
7. Soil-based evidence of high water table?	No) = 0	Yes	s € 3)	
C. Biology (Subtotal =4)	•	<u>'</u>			
18. Fibrous roots in streambed	3	2	(1)	0	
9. 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		0.5	1	1.5	
3. Crayfish		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	_ 15 Other 4		
*perennial streams may also be identified using other method	le See n 35 of manua		L = 1.5 Other +		
Votes:	15. See p. 55 of filanda				
votes.	$\overline{}$	/			
Sketch: Wi	ah034	snah029			

USACE AID#	DWQ #	Site #	(indicate on attached map)
·			- ·





Provide the following information for the stream reach un	
1. Applicant's name: ACP	2. Evaluator's name: DDWest
3. Date of evaluation: 3.17.15	4. Time of evaluation:
5. Name of stream: UNT to Flat Rock Branch	6. River basin: Tar - Pam
7. Approximate drainage area: >100 ac.	8. Stream order: 1st
9. Length of reach evaluated: 100'	10. County: Nash
11. Site coordinates (if known): prefer in decimal degrees.	• •
	Longitude (ex. –77.556611): -77.879684 °
Method location determined (circle): GPS Topo Sheet Ortho 13. Location of reach under evaluation (note nearby roads and south of Wollett Mill Road	(Aerial) Photo/GIS Other GIS Otherd landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): none	
15. Recent weather conditions: wet	
16. Site conditions at time of visit: warm and sunny	
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	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% Agricultural
	% Cleared / Logged% Other (
22. Bankfull width: 4	23. Bank height (from bed to top of bank): 1
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 bends	X Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the eccharacteristics identified in the worksheet. Scores should recharacteristic cannot be evaluated due to site or weather cocomment section. Where there are obvious changes in the cinto a forest), the stream may be divided into smaller reaches	ge 2): Begin by determining the most appropriate ecoregion based on a 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 poditions, 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): 60 Commo	ents: observed in summer with no water present.
	Date 3.17.15

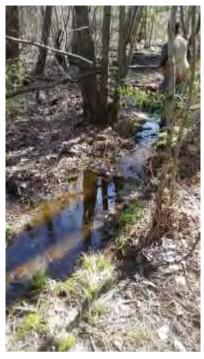
This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in gathering the data required by the United States Army Corps of Engineers to make a preliminary assessment of stream quality. The total score resulting from the completion of this 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		ECOREGION POINT RANGE			CCODE
	#			Piedmont	Mountain	SCORE
	1	Presence of flow / persistent pools in stream	0 - 5	0 – 4	0 - 5	2
		(no flow or saturation = 0; strong flow = max points) Evidence of past human alteration				
	2	(extensive alteration = 0; no alteration = max points)	0 - 6	0 – 5	0 - 5	2
	3	Riparian zone	0-6	0 – 4	0 – 5	4
	3	(no buffer = 0; contiguous, wide buffer = max points)	0-0	0 - 4	0-3	
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0 - 5	0 – 4	0 - 4	3
PHYSICAL	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0 – 3	0-4	0 – 4	3
	6	Presence of adjacent floodplain	0 – 4	0 – 4	0 – 2	_
X	U	(no floodplain = 0; extensive floodplain = max points)	0 – 4	0 – 4	0 – 2	3
Hd	7	Entrenchment / floodplain access	0 - 5	0 – 4	0 - 2	4
		(deeply entrenched = 0; frequent flooding = max points) Presence of adjacent wetlands				
	8	(no wetlands = 0; large adjacent wetlands = max points)	0 - 6	0 - 4	0 - 2	6
	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	NA
7	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	4
STABILITY	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0 – 5	0 – 5	0 – 5	5
ABI	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0 – 3	0 – 4	0 – 5	1
SI	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
BITAT	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	3
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	NA
7	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0 – 4	0-5	0 – 5	2
(90	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
E	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	
		TOTAL SCORE (also enter on fi	rst page)			60

^{*} These characteristics are not assessed in coastal streams.



snah029 facing upstream



snah029 facing downstream



snah029 cross stream

SNAH025

USACE AID#	DWQ #	Site #	_ (indicate on attached map)

ш	•	75	-	**
п	١	c	٠,	
	п	π.	٠.	-



Provide the following information for the stream reach unc	der assessment:			
1. Applicant's name: Dominion	2. Evaluator's name: DN West			
3. Date of evaluation: Aug. 20, 2014	4. Time of evaluation: 10:47			
5. Name of stream: UN Trib to FlatRock Bra	16. River basin: 1 a - Panlico			
7. Approximate drainage area: >106 Acres	8. Stream order: 2nd			
9. Length of reach evaluated: 300 + Fest	10. County: N154			
to at the CCI and a feel and advant degrees	12. Subdivision name (if any):			
Latitude (ex. 34.872312): 36°03'12.938''	Longitude (ex77.556611): 77°5°2°31.299°			
Method location determined (circle) GPS Topo Sheet Ortho (13. Location of reach under evaluation (note nearby roads and South of Bloo (eft Mill)	(Aerial) Photo/GIS Other GIS Other			
14. Proposed channel work (if any):				
15. Recent weather conditions: Rain 2				
16. Site conditions at time of visit: [londy / Wish	led			
17. Identify any special waterway classifications known:	Section 10IIdal 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 NO	20. Does channel appear on USDA Soil Survey? (YES) NO			
21. Estimated watershed land use: % Residential	% Commercial% Industrial 50% Agricultural			
50% Forested	% Cleared / Logged% Other ()			
	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 recharacteristic cannot be evaluated due to site or weather comment section. Where there are obvious changes in the cinto a forest), the stream may be divided into smaller reacher reach. The total score assigned to a stream reach must range bighest quality.	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 effect an overall assessment of the stream reach under evaluation. If a ponditions, 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 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			
matheming the data required by the United States Arm	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			

			ECOREGION POINT RANGE			SCOPE	
	#	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	4	
	2	Evidence of past human alteration (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	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0 – 4	0-4	4	
AL	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	2	
FHYSICAL	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	3	
LH	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	ч	
	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*	
STABILITY	12	Evidence of channel incision or widening (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	4	
de	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	2	
2	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	4	
	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	
101	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	4	
WINDLA	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0 - 5	0-5	0-5	4	
1	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	3	
DIOTOGI	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	3 3 3	
100	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	3	
3	23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	4	
1		Total Points Possible	100	100	100	1	
		TOTAL SCORE (also enter on fir	ret page)		100000	75	

^{*} These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11

SNAH025

ent No =		Longitude: 7 Other UV T de.g. Quad Name: 1 Moderate 2 2 2 2 2 2 1 1 1 Yes(=	Strong 3 3 3 3 3 3 1.5 1.5
ent No =	Weak 1 1 1 1 1 1 0.5 0.5	Moderate 2 2 2 2 2 2 1 1	Strong 3 3 3 3 3 3 1.5 1.5
No =	1 1 1 1 1 1 0.5 0.5	2 2 2 2 2 2 2 2 1	3 3 3 3 3 3 3 3 1.5
No =	1 1 1 1 1 0.5 0.5	2 2 2 2 2 2 2 1	3 3 3 3 3 3 3 1.5
No =	1 1 1 1 0.5 0.5	2 2 2 2 2 1 1	3 3 3 3 3 1.5
No =	1 1 1 0.5 0.5	2 2 2 2 1 1	3 3 3 3 1.5
No =	1 1 1 0.5 0.5	2 2 2 2 1 1	3 3 3 3 1.5
No =	1 1 0.5 0.5	2 2 2 1 1 1	3 3 3 1.5
No =	1 0.5 0.5	2 2 1 1 1	3 3 1.5
No =	1 0.5 0.5 = 0	2 1 1	3 3 1.5
No =	1 0.5 0.5 = 0	1 1	1.5
No =	0.5 0.5 = 0	1	1.5
No =	0.5	1	1.5
No =	= 0		
		Yes/=	3
	1	2	(3)
_	1	(2)	3
6 3	1	0.5	0
5	0.5	(1)	1.5
		1	1.5
Nor	0.5	Vest	And the second
140 -	- 0	100	
	2	1	0
2			0
			3
			3
			1.5
		-	1.5
			1.5
			1.5
)			
		OBL = 1.5 Other + C	5
of manual.			
	No:	No = 0 2 2 1 0 0.5 0.5 0.5 0.5 0.5 0.5	No = 0 Yes (

OP. - SNAHOZS

snah025



Waterbody snah025 facing south upstream



Waterbody snah025 facing north downstream

snah025



Waterbody snah025 facing upline cross stream

SNAH026

USACE AID#	DWQ #	Site #	(indicate on attached map)

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Provide the following information for the stream reach und	ler assessment:
1. Applicant's name: Dominion	2. Evaluator's name: Dowst
3. Date of evaluation: Au gust 26, 2014	4. Time of evaluation: /1: Z 6
5. Name of stream: UNT to FIARock B	-, 6. River basin: Tar - Panico
7. Approximate drainage area: > 10 o	8. Stream order: 15t
9. Length of reach evaluated: 300 F	10. County: Wash
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
Latitude (ex. 34.872312): 36°03′10.185″	Longitude (ex77.556611): 77° 5 2′ 53.302"
Method location determined (circle): GPS Topo Sheet Ortho (13. Location of reach under evaluation (note nearby roads and	Aerial) Photo/GIS Other GIS Otherlandmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any):	
15. Recent weather conditions:	
16. Site conditions at time of visit:	
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	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
50% 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%)
	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 recharacteristic cannot be evaluated due to site or weather co comment section. Where there are obvious changes in the clinto a forest), the stream may be divided into smaller reaches reach. The total score assigned to a stream reach must range bighest quality.	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 proditions, 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 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 sents:
gathering the data required by the United States Army	Date Quy- 20, 2019 y 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 to change – version 06/03. To Comment, please call 919-876-8441 x 26.

	189		ECOREGION POINT RANGE			SCORE
	#	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	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0 – 5	4
	3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	3
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	3
AL	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0 – 3	0-4	0 – 4	3 2 2
FHISICAL	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0 – 4	0-4	0-2	2
	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	
	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
X	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	3
1	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	4
SIABILITY	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	2
0	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
IA	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	3
HABITAL	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	3
	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	2
BIOLOGY	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	2
IOL	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	3
H	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	

^{*} These characteristics are not assessed in coastal streams.

Date: Aug. 20, 2014	ag. 20, 2014 Project/Site: SE Reliability			Latitude: 36°03'10.		
Evaluator: DDW est	County: Nag	,	Other UNT Profile e.g. Quad Name:			
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determine Ephemeral Inter	nation (circ <u>le one)</u> rmittent Perennial				
A. Geomorphology (Subtotal = 18)	Absent	Weak	Moderate	Strong		
1ª. Continuity of channel bed and bank	0	1	2	(3)		
Sinuosity of channel along thalweg	0	1	(2)	3		
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3		
Particle size of stream substrate	0	1	(2)	3		
5. Active/relict floodplain	0	1	(2)	3		
Depositional bars or benches	0	1	(2)	3		
7. Recent alluvial deposits	0	0	2	3		
8. Headcuts	0	0	2	3		
9. Grade control	0	0.5	0	1.5		
10. Natural valley	0	0.5	(1)	1.5		
11. Second or greater order channel	No	(P)	Yes	= 3		
a artificial ditches are not rated; see discussions in manual						
B. Hydrology (Subtotal =)						
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		1.5		
17. Soil-based evidence of high water table?	No	0 = 0	Yes(= 3)		
C. Biology (Subtotal = 9						
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	(13	2	3		
21. Aquatic Mollusks	0	1	2	3		
22. Fish	0	0.5	1	1.5		
23. Crayfish	0	0.5	1	1.5		
24. Amphibians	0	0.5	0	1.5		
25. Algae	0	0.5	1	1.5		
26. Wetland plants in streambed		FACW = 0.75; OBL	= 1.5 Other= 0	5)		
*perennial streams may also be identified using other method	s. See p. 35 of manua	l.				
Notes:						
Sketch:	X /	11	- h	LN		
	7	SNAF	1026			

snah026



Waterbody snah026 facing east upstream



Waterbody snah026 facing west downstream

snah026



Waterbody snah026 facing downline cross stream

USACE AID#	DWQ #	Site #	(indicate on attached map)

SNABIOZ



STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for	r the stream reach under assessment:
---------------------------------------	--------------------------------------

Latitude (ex. 34.872312):	Aerial) Photo/GIS Other GIS Other
13. Location of reach under evaluation (note nearby roads and	andmarks and attach map identifying stream(s) location):
Approximately 2000 west of Dean	< Road
14. Proposed channel work (if any):	
	last 48 hours
16. Site conditions at time of visit: \(\sigma \sigma \sig	
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
7. 18. Is there a pond or lake located upstream of the evaluation p	oint? YES NO If yes, estimate the water surface area:
7 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: 15 % Residential	% Commercial% Industrial% Agricultural
<u>50</u> % Forested	% Cleared / Logged% Other ()
22. Bankfull width: 7	23. Bank height (from bed to top of bank): <u>S</u>
24. Channel slope down center of stream:Flat (0 to 2%)	<u>★</u> 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 ecor characteristics identified in the worksheet. Scores should ref characteristic cannot be evaluated due to site or weather concomment section. Where there are obvious changes in the characteristic cannot 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 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 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): 58 Commen	its: Perennial channel with abotting wetlands

particular mitigation ratio or requirement. Form subject to change – version 06/03. To Comment, please call 919-876-8441 x 26.

	LEGORICIONERONI RANCIC	
	Coasial Pedgeont Mountain	
	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points) 0 - 5	
1911 - 1911 1911 - 191	Evidence of past human alteration 0.6 0.5 0.5	
	(extensive alteration = 0; no alteration = max points)	4
	(no buffer = 0; contiguous, wide buffer = max points)	7
	Evidence of nutrient or chemical discharges 0 = 5 0 - 4 0 - 4 0 - 4 (extensive discharges = 0; no discharges = max points)	A
	Groundwater discharge 0 2 0 4 0 4	
HIVSICAL	(no discharge = 0; springs, seeps, wetlands, etc. = max points)	5
4	(no floodplain = 0; extensive floodplain = max points) $0-4$ $0-4$ $0-2$	
	Entrenchment / Boodplain access $0-5$ $0-4$ $0-2$ (decepty entrenched = 0; frequent flooding = max points)	
	Presence of adjacent wetlands 0.6 0.4 0.0	.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
	(no wetlands = 0; large adjacent wetlands = max points)
	(extensive channelization = 0; natural meander = max points) $0-5$ $0-4$ $0-3$	=
	Sediment input $0-5$ $0-4$ $0-4$ (extensive deposition=0; little or no sediment = max points)	2
	Size & diversity of channel bed substrate	
	(fine, homogenous = 0; large, diverse sizes = max points) Evidence of channel incision or widening	
) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1	(deeply incised = 0; stable bed & banks = max points) $0-5$ $0-4$ $0-5$	
11 12	Presence of major bank failures 0 = 5 0 - 5 0 - 5 0 - 5	3
	Root depth and density on banks 0-3 0-4 0-5	***************************************
	(no visible roots = 0, dense roots throughout = max points)	يسي المستور
	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points) 0-5 0-4 0-5	3
116	Presence of riffle-pool/ripple-pool complexes 0-3 0-5 0-6	_
	(no riffles/ripples or pools = 0; well-developed = max points) Habitat complexity 0-6 0-6 0-6	1
	(little or no habitat = 0; frequent, varied habitats = mux points)	4
	Canopy coverage over streambed 0 - 5 0 - 5 0 - 5 0 - 5	
	Substrate embeddedness $0-4$ $0-4$ $0-4$ $0-4$	<u></u>
	Presence of stream invertebrates (see mage 4)	j
	Cho evidence — 0, common, numerous types — max points)	
	Presence of amphibians $0-4$ $0-4$ $0-4$ $0-4$	7
	Presence of fish $0-4$ $0-4$ $0-4$ $0-4$	f
	A COMPANY OF THE PROPERTY OF T	f
	(no evidence = 0; abundant evidence max points) 0 6 0 = 5 0 = 5	
	Tatal Points Possible 100 100 100	
	TOTAL SCORE (also enter on first page)	58
* 71	haracteristics are not assessed in constal atrooms	

^{*} 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

NC DWQ Stream Identification Form Version 4.11

SNABIOZ

Date: 3/9/15	Project/Site:	naision / ACP	Latitude: 36°	02'43"N	
Evaluator: Todo Previnger	County: Nash	,	Longitude: 77°53'14"W		
Total Points: Stream is at least intermittent if \geq 19 or perennial if \geq 30*	Stream Determ	ination (circle one) ermittent Perennial	Other e.g. Quad Name:		
A. Geomorphology (Subtotal = 25.5	Absent	Weak	Moderate	Strong	
1ª. Continuity of channel bed and bank	0	1	2	(3)	
Sinuosity of channel along thalweg	0	1	2	<u></u>	
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1		3	
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	0	1	2	3	
8. Headcuts	0	D	2	3	
9. Grade control	0	0.5	1	1.5	
10. Natural valley	0	0.5	<u> </u>	1.5	
11. Second or greater order channel	N	o = 0	Yes:	Manager Charles	
^a artificial ditches are not rated; see discussions in manual					
B. Hydrology (Subtotal =					
12. Presence of Baseflow	0	1	2	3	
13. Iron oxidizing bacteria	(02	1	2	3	
14. Leaf litter	(1.5)	1	0.5	0	
15. Sediment on plants or debris	0	0.5	Ð	1.5	
16. Organic debris lines or piles	0	0.5	D .	1.5	
17. Soil-based evidence of high water table?	No = 0 Yes = 3			= 3)	
C. Biology (Subtotal = 8,5)					
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)	0	0	2	3	
21. Aquatic Mollusks	0	1	2	3	
22. Fish	0	Q Z	1	1.5	
23. Crayfish	0	0.5	1	1.5	
24. Amphibians	0	(D.)	1	1.5	
25. Algae	(0)	0.5	1	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 manu				
Notes: Perchaid stream with sabutting in					
Sketch: Prelityre SNAB NACO Prelityre SNAB NACO Prelityre SNAB OR SNAB NACO Prelityre	SUABIO3 F	CB J			
CB -150 -'	4 - 150 -	Ņ			



Waterbody SNAB102 facing west upstream



Waterbody SNAB102 facing north downstream



Waterbody SNAB102 facing northwest across

USACE AID#	DWQ #	Site #	(indicate on attached map)

SNAB103



STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for the stream reach under assessment:

1. Applicant's name: Dominion	2. Evaluator's name: Toos Preuninger
3. Date of evaluation: 3 9 15	4. Time of evaluation:
5. Name of stream: SNAB102 - UNT to Flat Rock	6. River basin: Tar
7. Approximate drainage area:	8. Stream order: 15th
9. Length of reach evaluated: ~ 300'	10. County: Nach
11. Site coordinates (if known): prefer in decimal degrees.	
Latitude (ex. 34.872312): 36°02'43"N	Longitude (ex. –77.556611):77°53'12"W
Method location determined (circle): PS, Topo Sheet Ortho (13. Location of reach under evaluation (note nearby roads and	landmarks and attach map identifying stream(s) location):
~ 2000 feet west of Deans Rd.	
14. Proposed channel work (if any):	
15. Recent weather conditions: No rain to last 48	hours, ~65°
16. Site conditions at time of visit: cloudy, 60	
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) NO	20. Does channel appear on USDA Soil Survey? YES NO
21. Estimated watershed land use: 15 % Residential	% Commercial% Industrial 3_5% Agricultural
	% Cleared / Logged% Other ()
22. Bankfull width: 3	23. Bank height (from bed to top of bank): O, 75
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 cor comment section. Where there are obvious changes in the chinto a forest), the stream may be divided into smaller reaches reach. The total score assigned to a stream reach must range highest quality.	ge 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 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 flow line as intermittent channel.	nts: Bronded welland system, located main
Evaluator's Signatura 1 m 7	Date 2/9/15
This channel evaluation form is intended to be used only	Date $\frac{3/9/15}{}$ 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 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 +	CORRECTOR SERVICE		XKORG.
Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0.5	1005-140 Correlation and Laboration	3
2 Evidence of past human afteration (extensive alteration = 0; no alteration = max points) Riparian zone	0-6 0-5	05	3
(no buffer = 0; contiguous, wide buffer = max points)	0 6 0 4	05	3
4 Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5 0-4	0.4	2
Groundwater discharge Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3 0-4	0-4	3
Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points) Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points) Entrenchment / floodplain access	0 4 0 4	0=2	i i
Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5 0-4	0.2	3
Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6 0-4	0-2	3
Channel sinuosity (extensive channelization = 0; natural meander = max points)	0_5 0_4	0-3	3
Sediment input (extensive deposition= 0; little or no sediment = max points)	0-4	0-4	2
Size & diversity of channel bed substrate (fine, homogenous = 0, large, diverse sizes = max points)	NAT (0-4	0-5	*
Evidence of channel incision or widening (deeply incised = 0; stable hed & banks = max points)	0.5 0.4	0-5	2
Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5 0-8	0.25	- 14
Presence of major bank failures	0 3 0-4	i ous	. 1
Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	. 0 5 . 0 4	0-5	
Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0.5	0-6.	
Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6 0-6	0-6	. 40
Canopy coverage over streambed (no shading vegetation = 0; continuous canopy - max points)	0-5 0-5	0-5	
Substrate embeddedness (deeply embedded = 0, loose structure = max)		0-4	. 1
Presence of stream invertebrates (see page 4)	0.5		<u> </u>
(no evidence = 0; common, numerous types = max points) Presence of amphibians	.0.4 0-4	0-4	
(no evidence = U; common, numerous types = max points) Presence of fish	0.4 0.4	0.4	
(no evidence = 0; common, numerous types = max points) Evidence of wildlife use			
[
Total Paints Possible	100 100		
TOTAL SCORE (also enter on f		errord of the second of the se	45

^{*} 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

NC DWQ Stream Identification Form Version 4.11

21. Aquatic Mollusks

22. Fish

23. Crayfish

25. Algae

26. Wetland

24. Amphibians

SHAR103

Date: 3/9/15 Latitude: 36°02'43"N Project/Site: Dominion | ACP Evaluator: TODO Previnger Longitude: 77°53'12"W County: Nash Total Points: Stream Determination (circle one) Other Stream is at least intermittent **Ephemeral Intermittent Perennial** e.g. Quad Name: 21.25 if ≥ 19 or perennial if ≥ 30* Strong A. Geomorphology (Subtotal = Absent Weak Moderate 1^{a.} Continuity of channel bed and bank 0 (1)2 3 2. Sinuosity of channel along thalweg (2) 0 1 3 3. In-channel structure: ex. riffle-pool, step-pool. 0 3 \odot 2 ripple-pool sequence **D** 4. Particle size of stream substrate 0 2 3 5. Active/relict floodplain 0 1 2 3 6. Depositional bars or benches 0 (1) 2 3 0 7. Recent alluvial deposits 1 2 3 8. Headcuts (ロ) 1 2 3 9. Grade control (D) 1.5 0 0.5 10. Natural valley 0 1 0.5 1.5 11. Second or greater order channel No = 0 Yes = 3artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = 4.5 12. Presence of Baseflow 0 1 (2) 3 <u>⊘</u> 13. Iron oxidizing bacteria 1 3 2 14. Leaf litter (1.5) 1 0.5 0 15. Sediment on plants or debris \bigcirc 0.5 1 1.5 16. Organic debris lines or piles (D) 0 0.5 1.5 17. Soil-based evidence of high water table? No = 0 Yes = 3 C. Biology (Subtotal = 7.75) 18. Fibrous roots in streambed (3) 2 1 0 19. Rooted upland plants in streambed (3)2 1 0 0 20. Macrobenthos (note diversity and abundance) 1 2 3

(O)

0

0

0

(0)

1

0.5

(0.5)

(0.5)

0.5

2

1

1

1

1

3

1.5

1.5

1.5

1.5

26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0
*perennial streams may also be identified using other methods.	See p. 35 of manual.
Notes: Braided wotland system - wasted ma	a flow line as intermittent channel
9	
Sketch: Mixed Pine Hard Wixed Wixed Pine II	WNDERO SNABIOS XDD T SNABIOS YNDERO TO SNABIOS N HARDWOOD LE 150 CB
	4.4



Waterbody SNAB103 facing east upstream



Waterbody SNAB103 facing west downstream



Waterbody SNAB103 facing north across

Open Waterbody Data Sheet

Open waterboo	iy Data Sileet								
Survey Descripti	on								
Project Name:		Waterbody N	lame:		Wate	erbody ID:		Date:	
Atlantic Coast Pip	eline	Unnamed	Pond		ON	AC001		3/9/2015	
State:	County:	<u> </u>	Company:		rew Men	nber Initials:	Photos:		
North Carolina	Nash		NRG	C	CR, AS		ONACO	01_001-003	
Tract Number(s):			Nearest Milepos	t:	Asso	ciated Wetland	ID(s):		
18-058-A004			338.5		Noi	ne			
Survey Type: (check one)	□Centerlin	e ⊠R	Re-Route	□Access Road	d	□Other:			
Physical Attribut	es								
Waterbody Type: (check one) ⊠Stoo	ck Pond 🛚 Natura	l Pond □ La	ke □ Reservoir	☐ Impoundmer	it 🗆 Oxt	oow □ Other:			
Hydrologic Regime:		<u>-</u>		-	0		- "		
	☐ Permanently		Semipermanentl	y Flooded 🛚 🖂	Seasona	lly Flooded □	Temporaril	y Flooded	
OHWM Height:	OHWM Indi (check all that a		☐ Clear li on bank	ne □Shel\	ring	□Wrested vegetation	□Scou	uring ⊠Water staining	
<u>NA</u> ft.	□Ben vegeta	t, matted, or mation	nissing □Wrack line	□Litter debris	and	□Abrupt plan community ch		aracteristic change	
Depth of Water:		Bank heig	ht (average):		В	ank slope (ave	rage):		
	<u>5_</u> ft.		<u>8</u> f	t.		-	60 degree	s	
Qualitative Attrib	utes								
Water Appearance: (check one)		Clear ⊠T	urbid □She on sur		ırface	□Algal □ mats	Other:		
Substrate: (check all that apply)	□ Bedrock □ B	oulder \square C	obble Gravel	⊠ Sand	⊠ Silt/ cla	ay 🗆 Organic	☐ Other:		
% of Substrate:	%	<u></u> %	%	% <u>70</u> %	<u>30</u> %	%		%	
Width of Riparian Zoi									
ft.	(check all that	apply)	⊠ Trees:	Σ	Sapling	s/Shrubs:	⊠ Herl	bs	
N/A⊠	Avg. DBH (approx.)	of Dominants	s: <u>4</u> _in.	_	<u>2</u> in.				
Dominant Bank Vege	tation (list):								
Loblolly pine, swe	et-gum, red ma	ple, wool gr	ass						
Aquatic Habitats (ex: s	submerged or emerged ac	quatic vegetation, o	overhanging banks/roots	, leaf packs, large sub	merged woo	d, riffles, deep pools,	etc.):		
Downed logs in th	e pond								
Aquatic Organisms C	Observed (list):								
Tadpoles, frogs, w	ater skimmers								
T&E Species Observe	ed (list):								
None									
Disturbances (ex: live:									
Pond appears to h	nave been artific	cially dug or	ut over twenty	years ago					
Waterbody is: (check one)	☐ Natural		Artificial, man-ma	de 🗆 Manip	ulated				
Waterbody Quality ^a : (check one)	☐ High		Moderate	□ Low					

^a **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.

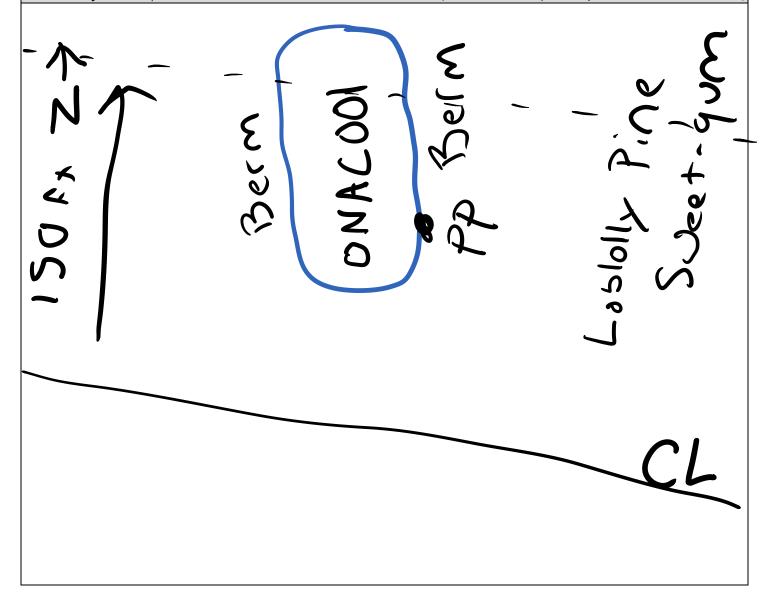
Moderate Quality: Altered by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or bank vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers 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:

The soil was not hydric. Pond may be dry during the growing season.

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





Open waterbody ONAC001 facing south



Open waterbody ONAC001 facing west



Open waterbody ONAC001 facing north

USACE AID#	DWQ #	Site #	_ (indicate on attached map

-	/	
ſı	WwW	ĺ
Н		l
Н		ı

STREAM QUALITY A	SSESSMENT WORKSHEET
Provide the following information for the stream reach unc	ler assessment:
1. Applicant's name: Dominion ACP	2. Evaluator's name: 1000 Previnger
3. Date of evaluation: 3 15 15	4. Time of evaluation: PM
5. Name of stream: SNAB104 - UNT to Flat Rock Bro	6. River basin: The
7. Approximate drainage area:	8. Stream order: \\ \frac{57}{}
9. Length of reach evaluated: ~ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	10. County: NASL
11. Site coordinates (if known): prefer in decimal degrees.	,
Latitude (ex. 34.872312): 36°02'06"N	Longitude (ex. –77.556611): 77°52'26"W
Method location determined (circle): GPS Topo Sheet Ortho (13. Location of reach under evaluation (note nearby roads and ~ 200 North of Red Oak Battleboro	landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any):	
15. Recent weather conditions: no rain in last 48 hours	rs - 55°
16. Site conditions at time of visit: cloudy, 65°	
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)NO	20. Does channel appear on USDA Soil Survey? YES (NO)
21. Estimated watershed land use: 15 % Residential	% Commercial% Industrial \\S% Agricultural
70% Forested	% Cleared / Logged% Other ()
22. Bankfull width: 3	23. Bank height (from bed to top of bank): 4
24. Channel slope down center of stream: Flat (0 to 2%)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity: <u>≺</u> 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 cor comment section. Where there are obvious changes in the chinto a forest), the stream may be divided into smaller reaches	the 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 notitions, 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): 27 Comme	nts: Dug dift h (spoil piles present) with 4' banks

Evaluator's Signature 1000 mg Date 3 10 15 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	Cnidal		- Minnelle	
Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-3		05	2
Evidence of past human alteration				
(extensive alteration = 0; no alteration = max points)	10-16	0-5	0-5	ł
Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	1		0-5	3
Evidence of nutrient or chemical discharges			4.4	
(extensive discharges = 0; no discharges = max points) Groundwater discharge				2
(no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0 - 2	111-4	I
Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)		g4	0.2	0
Entrenchment / Noodplain access			\$ (): .	0
(deeply entrenched = 0; frequent flooding = max points)				
(no wetlands = 0; large adjacent wetlands = max points)		0.4		
Channel sinussity (extensive channelization = 0; natural meander = max points)	0.5	0-4	0-3	1
Sediment input	0-5	n di	0-4	
(extensive deposition= 0; little or no sediment = max points)				ā
(fine, homogenous = 0; large, diverse sizes = max points)	NA*		(<u>)</u> _3**	1
12 Evidence of channel incision or widening				1
(deeply incised = 0; stable bed & banks = max points) Presence of major bank failures				
(severe crosion = 0; no crosion, stable banks = max points)		0-5	05	3
Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	1.4	0-5	O
impact by agriculture, livestock, or timber production	0-5	3 - 17 - 4t	0 - 5	3
(substantial impact =0; no evidence = max points) Presence of riffle-pool/ripple-pool complexes				
(no riffles/ripples or pools = 0; well-developed = max points)	0.3	0.5	: O 6 .	0
Habitat complexity [little or no habitat = 0; frequent, varied habitats = max points)	0-6	(i, 1)	. 0. 6	O
Canopy coverage over streambed				
(no shading vegetation = 0; continuous canopy = max points) Substrate embeddedness	0.43	0. 5.		4
(deeply embedded = 0; loose structure = max)		D-4		1
20 Presence of stream invertebrates (see page 4)		0-5	0.5	O
(no evidence = 0; common, numerous types = max points) Presence of amphibians (no evidence = 0; common, numerous types = max points)				
	01	0.4	0-4	D D
Presence of fish (no evidence = 0; common, numerous types = max points)	0.4	0 4	1.4	o
Evidence of wildlife use		0-5	0.5	1
(no evidence = 0; abundant evidence max points)				!
Total Paints Possible				
TOTAL SCORE (also enter on fi				27
* These characteristics are not assessed in coastal streams	9136915 <u>-925755</u> 5			Z T

^{*} 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

NC DWQ Stream Identification Form Version 4.11

SNABIOH

36°02'06"N Project/Site: Dominion ACP Date: Latitude: County: Nash Evaluator: TOOD Previous Longitude: 77°52'26"W Total Points: Stream Determination (circle one) Other Stream is at least intermittent Ephemeral Intermittent Perennial e.g. Quad Name: if ≥ 19 or perennial if ≥ 30* A. Geomorphology (Subtotal = 4,5) Absent Weak Moderate Strong 1ª. Continuity of channel bed and bank - Dun Dirch 0 2 2. Sinuosity of channel along thalweg 1 0 2 3 3. In-channel structure: ex. riffle-pool, step-pool. **(0)** 2 3 1 ripple-pool sequence 4. Particle size of stream substrate 1 0 2 3 5. Active/relict floodplain **(0)** 2 3 1 6. Depositional bars or benches (0) 1 2 3 7. Recent alluvial deposits 0 **(D)** 2 3 8. Headcuts 0 1 2 3 9. Grade control (1) 0 0.5 1.5 10. Natural valley 0.5) 0 1.5 11. Second or greater order channel No = 0> Yes = 3a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = 4,0 12. Presence of Baseflow 0 (2) 1 3 13. Iron oxidizing bacteria (O) 1 2 3 14. Leaf litter 1.5) 1 0.5 0 15. Sediment on plants or debris 0 (0.5) 1.5 1 16. Organic debris lines or piles 1 0 0.5 1.5 17. Soil-based evidence of high water table? No = 0 **/**Yes = 3 C. Biology (Subtotal = 18. Fibrous roots in streambed 2 1 0 19. Rooted upland plants in streambed $\widetilde{3}$ 2 1 0 <u>(0)</u> 20. Macrobenthos (note diversity and abundance) 1 2 3 0 21. Aquatic Mollusks 1 2 3 22. Fish 0 0.5 1 1.5 23. Crayfish 0 0.5 1 1.5 24. Amphibians (O) 0.5 1 1.5 25. Algae 0) 0.5 1.5 1 26. Wetland plants in streambed FACW = 0.75) OBL = 1.5 Other = 0 *perennial streams may also be identified using other methods. See p. 35 of manual. Notes: Dry Ditch /4' banks, spoil piles. Locco bed bank as it @ enfers wetland (WNACOOY) + becomes a braded system Mixel PirelHumg Sketch: WHACOOH Stream SNAB104 14 CB 1-150'-CR 150' -



Waterbody SNAB104 facing southeast upstream



Waterbody SNAB104 facing northwest downstream



Waterbody SNAB104 facing southwest across

USACE AID#	

D	W	\circ	#
$\boldsymbol{\mathcal{L}}$	**	v	TT

Site	#

(indicate on attached map)



STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information f)	_
1. Applicant's name: Dowinion	./ACP	2. Evaluator's name: Tobo Preuninger
3. Date of evaluation: 3 10 15		4. Time of evaluation: PM
5. Name of stream: SNABIOS - UN	VIT to Flat Rock B	6. River basin:
7. Approximate drainage area:		8. Stream order: 2nd
9. Length of reach evaluated: ^ 100	>	10. County: Nash
11. Site coordinates (if known): pre		12. Subdivision name (if any):
Latitude (ex. 34.872312):36°01'51	l"N	Longitude (ex. –77.556611): 77°52'36"W
Method location determined (circle): (G	PS) Topo Sheet Ortho	(Aerial) Photo/GIS Other GIS Other
~ 1500' south of Red C	Ak Baltleboro	ROAD
14. Proposed channel work (if any):_		
15. Recent weather conditions:	rain in last 48	hours
16. Site conditions at time of visit: <u>«</u>	150dy 750	
		Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding	Resource Waters	_ Nutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located ups	stream of the evaluation	point? (YES) NO If yes, estimate the water surface area: 20. Does channel appear on USDA Soil Survey? (YES) NO
19. Does channel appear on USGS qu	ad map? (E8 NO	20. Does channel appear on USDA Soil Survey? VES NO
21. Estimated watershed land use:	15 % Residential	% Commercial% Industrial% Agricultural
	<u>6</u> ≤% Forested	S % Cleared / Logged% Other (
22. Bankfull width: 4-8		23. Bank height (from bed to top of bank):
24. Channel slope down center of stre	eam: XFlat (0 to 2%)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:Straight	× Occasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream of to each characteristic within the racharacteristics identified in the work characteristic cannot be evaluated docomment section. Where there are of into a forest), the stream may be divireach. The total score assigned to a highest quality.	classification, etc. Every inge shown for the ecc sheet. Scores should reue to site or weather cobvious changes in the coded into smaller reaches stream reach must range	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 anditions, 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 a 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): Sy becomes a braided sys?	Comme ten as it enter	ents: Stream originates below a beaver pond - s a freshwater march (WNACODS). Recently acks
Evaluator's Signature Tolk This channel evaluation form is in	rended to be used only	Date 7) 10/15 as a guide to assist landowners and environmental professionals in
gathering the data required by the	ie United States Army	Corps of Engineers to make a preliminary assessment of stream 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	**************************************			-40(1)(10:
Talka Basis in bangga Afrika sa Majaya sa ara a 122 sa sa Kabupan Kabupa mpa masa sa kabupat kan da kabupat ka	(Tinan)	Element.	-Amerika	priwysty. The
Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	11-4	0-5	<u> </u>
				3
2 (extensive alteration = 0; no alteration = max points)	1, 0-6	0.57	(2.5)	4
Riparian zone	n a	04	1-5	7
(no buffer = 0; configuous, wide buffer - max points)				2
4 Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	F	04		3
(no discharge = 0; springs, seeps, wetlands, etc. = max points)	ruizir-Grad L	0-4) <u></u>	3
Presence of adjacent floodplain		0-4	0.2	:
(no floodplain = 0; extensive floodplain = max points) Entrenchment / floodplain access				<u> </u>
7 (deeply entrenched = 0; frequent flooding = max points)	0.5	04	0-2	3
Presence of adjacent wetlands				
(no wetands — if large adjucent wetlands - max noints)				3
Channel sinuosity (extensive channelization = 0; natural meander = max points)	0.5	0-4	()_3	a .
(extensive deposition 0; little or no sediment = max points)	0-5	0.4	<u> 10-4 - </u>	2
Size & diversity of channel bed substrate	N. C.	0-4	0-5	4
(fine, homogenous – U, arge, diverse sizes – max points)				2
Evidence of channel incision or widening (decepty incised = 0; stable hed & banks = max points)	0 5	p-4	05	
(severe erosion = 0; no erosion, stable banks = max points)			0-5	3
Root depth and density on banks	0_3	h in a	0.5	1
(no visible roots = 0; dense roots throughout = max points) Impact by agriculture, livestock, or timber production				1
(substantial impact –0; no evidence – max points)	- : (<u>) -</u> 5	i (1) (1) (1)	9.45	2
16 Presence of riffle-pool/ripple-pool complexes				_
(no rithes/rippies or pasts = 0, well-developed - max points)			0-6	2
Habitat complexity	. 0 6	0 6	06	3
(little or no habitat = 0; frequent, varied habitats = max points) Camopy coverage over streambed				-
(no shading vegetation – 0; continuous canopy = max points)		05	0-5	2
10 Substrate embeddedness	7,4		0-4	2
static (
20 Presence of stream invertebrates (see page 4) (no evidence – 0; common, numerous types = max points)	0.14	05		2
The state of the s	0-4	0 4	0 : 4	2
Presence of fish	0-4			Ĺ
ino evidence = 0, common, numerous types = max nomis).				-
(no evidence - 0; abundant evidence - max points)	0.6	0-5	0-5	2
Total Points Possible			oren (harringar) erringia (1961). La la	
		100	(u)	
TOTAL SCORE (also enter on fi				4
				F. 1

^{*} 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

SNABIOS NC DWQ Stream Identification Form Version 4.11 Latitude: 36°01'51"N Project/Site: Doning / ACP Date: Longitude: 77°52'36"W Evaluator: **Total Points:** Stream Determination (circle one) Other Stream is at least intermittent **Ephemeral Intermittent Perennial** e.g. Quad Name: if ≥ 19 or perennial if ≥ 30* A. Geomorphology (Subtotal = 1) Absent Weak Moderate Strong 1a. Continuity of channel bed and bank (2/ 0 3 2. Sinuosity of channel along thalweg 0 \mathcal{I} 2 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 3 1 5. Active/relict floodplain 0 1 (3) 6. Depositional bars or benches 0 2 1 3 7. Recent alluvial deposits 0 1 2 $\sqrt{3}$ 8. Headcuts (D) 1 2 3 7 9. Grade control 0 0.5 1.5 10. Natural valley 0 0.5 7 1.5 11. Second or greater order channel No = 0Yes = 3 a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = 12. Presence of Baseflow 0 1 (2)3 62 13. Iron oxidizing bacteria 1 3 2 14. Leaf litter 1.5 1 0.5 15. Sediment on plants or debris (1.5) 0 0.5 1 16. Organic debris lines or piles 0 1> 0.5 1.5 Yes = 3 17. Soil-based evidence of high water table? No = 0C. Biology (Subtotal = 18. Fibrous roots in streambed 2 1 0 19. Rooted upland plants in streambed 2 1 0 20. Macrobenthos (note diversity and abundance) <u>(1)</u> 0 2 3 21. Aquatic Mollusks (O) 2 1 3 22. Fish 0 (0.5)1 1.5 23. Crayfish **(0)** 0.5 1 1.5 24. Amphibians 0 (0.5) 1 1.5 (O. 25. Algae 1.5 0.5 26. Wetland plants in streambed FACW = 0.75; OBL = 1.5 Other = 0 *perennial streams may also be identified using other methods. See p. 35 of manual. Notes: Stream originates below a beaver sund, becomes a braided system as it enters freshmate bank. Whell rawon & deer tracks Sketch: CB



Waterbody SNAB105 facing southeast upstream



Waterbody SNAB105 facing northwest downstream



Waterbody SNAB105 facing southwest across

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	,	٧Y	•	,	TT

Site	#	

_ (indicate on attached map)



STREAM QUALITY ASSESSMENT WORKSHEET



SNACO \
Provide the following information for the stream reach under assessment:

1. Applicant's name: Dominion	2. Evaluator's name: NRG
3. Date of evaluation: 3/11/15	4. Time of evaluation: 8: 20 AM
5. Name of stream: Flat ROCK Branch	6. River basin: Tar Fiver basin
7. Approximate drainage area: 50 acres	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): 36°01' 48.878" N	Longitude (ex77.556611): 77° 52' 40.605" W
Method location determined (circle): GPS Topo Sheet Ortho (a 13. Location of reach under evaluation (note nearby roads and n/a	Aerial) Photo/GIS Other GIS Other
14. Proposed channel work (if any): None	
15. Recent weather conditions: No recent precip	itation
16. Site conditions at time of visit: Normal	
17. Identify any special waterway classifications known: \underline{N}	A Section 10 NA Tidal Waters NA Essential Fisheries Habitat
<u>NA</u> Trout Waters <u>NA</u> Outstanding Resource Waters <u>NA</u>	Nutrient Sensitive Waters <u>NA</u> Water 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
	% Commercial% Industrial% Agricultural
85 % Forested	15 % Cleared / Logged% Other () 23. Bank height (from bed to top of bank):9'
22. Bankfull width: 8	23. Bank height (from bed to top of bank): 4
	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 econ 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 ch 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 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 between 0 and 100, with a score of 100 representing a stream of the
alle melle	Show assert I have as
Total Score (from reverse): Commer Fecent Clear Cot. Although there is a	its: Stream assessed down stops of a
Seziment and runoff are entering th	
Evaluator's Signature Ole Reaga 1	Date 3/11/15
This channel evaluation form is intended to be used only a	as a guide to assist landowners and environmental professionals in 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 ECOREGION POIL			ΓRANGE	CCOPE
	π		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	5
	2	Evidence of past human alteration (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	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	5
AL	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	3
PHYSICAL	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	4
PH	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	5
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	5
	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
7	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	4
	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	4
	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
BITAT	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	3
HAB	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	NA
7	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	10
500	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
	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	rst page)	e de Obrasio		对及

^{*} 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

SNACOOI NC DWQ Stream Identification Form Version 4.11

NC DWQ Stream Identification Form	Version 4.11				
Date: 3/11/15	Project/Site: Atlantic Coast Project ne		Latitude: 36 °01 148.8781		
Evaluator: NRG	County: Nas	h	Longitude: 77°52'40.605" Other e.g. Quad Name:		
Total Points: 38.75 Stream is at least intermittent if \geq 19 or perennial if \geq 30*		nation (circle one) rmittent (Perennia)			
A. Geomorphology (Subtotal = 21.5	Absent	Weak	Moderate	Strong	
1ª. Continuity of channel bed and bank	0	1	2		
Sinuosity of channel along thalweg	0	1	2	<u> </u>	
In-channel structure: ex. riffle-pool, step-pool,				-	
ripple-pool sequence	0	0	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	3	3	
7. Recent alluvial deposits	0	1	2	3	
8. Headcuts	0	1	-0	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 = 0	(Yes = 3		
artificial ditches are not rated; see discussions in manual	***************************************	1		And the state of t	
B. Hydrology (Subtotal = $\frac{q}{}$)					
12. Presence of Baseflow	0	1	2	(3)	
13. Iron oxidizing bacteria	0	1	2	3	
14. Leaf litter	(1.5)	1	0.5	(8)	
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? No = 0					
C. Biology (Subtotal = 8.25)		l	**************************************		
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	(6)	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	1	1.5	
26. Wetland plants in streambed		FACW = 0.75) OBL	= 1.5 Other = 0)	
*perennial streams may also be identified using other method	s. See p. 35 of manual	l.		, , , , , , , , , , , , , , , , , , ,	
Notes:					
Sketch:	and the second	坐 /	Stream SNACOOL		
1 Hoorplain PFO			SNACOUT		
N' X	K / / /				
24	es marle	w -	/		
¥ 51.	es maple leet-bay	¥			
	Secretary Secret	The same of the sa			
r clearcut					



Waterbody SNAC001 facing north upstream



Waterbody SNAC001 facing west across



Waterbody SNAC001 facing south downstream

5NAG012

USACE AID#	DWQ #	Site #	(indicate on attached map)



STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for the stream reach und	ler assessment:
1. Applicant's name: Downbook	2. Evaluator's name: 50. pB
3. Date of evaluation: 8.71, 15	4. Time of evaluation: 12;00
5. Name of stream:_ Flat Rock Branch	6. River basin: TAR Primiles
7. Approximate drainage area: >100 ac.	8. Stream order:
9. Length of reach evaluated: /ou	10. County: Mash
11. Site coordinates (if known): prefer in decimal degrees. Latitude (ex. 34.872312): 76.0768	12. Subdivision name (if any): 177. 8820 Longitude (ex77.556611): 77. 8820
	1
Method location determined (circle): GPS Topo Sheet Ortho (13. Location of reach under evaluation (note nearby roads and	
14. Proposed channel work (if any):	
15. Recent weather conditions: Thundreston 2	nights pri-
16. Site conditions at time of visit:	
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: 7 CC
19. Does channel appear on USGS quad map? (YES) NO	20. Does channel appear on USDA Soil Survey? (ES) NO
	% Commercial% Industrial% Agricultural
	% Cleared / Logged% Other (
22. Bankfull width: 17	23. Bank height (from bed to top of bank): 1-2'
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
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the eco characteristics identified in the worksheet. Scores should recharacteristic cannot be evaluated due to site or weather concomment section. Where there are obvious changes in the chinto a forest), the stream may be divided into smaller reaches reach. The total score assigned to a stream reach must range highest quality.	the 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 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 latest the latest the latest the stream of the latest
Total Score (Irom reverse): (Commel	is: je. siran gented with will
Evaluator's Signature	Date 8, 21, 15
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
quality. The total score resulting from the completion of	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.

SNAG012

STREAM QUALITY ASSESSMENT WORKSHEET

	GWAD A COMPLETE CO	ECOREGION POINT RANG			SCORE	
#	CHARACTERISTICS	Coastal Piedmont		Mountain	SCOVE	
1	Presence of flow / persistent pools in stream (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	34	
3	Riparian zone (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	U	
5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	3	
6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	早	
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	6	
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	4	
11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	NI	
12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	4	
13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	5	
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	05	4	
16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	3	
17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	5	
17 18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	14	
19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	VA	
20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	13	
21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	14	
21	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	3	
23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	14	
	Total Points Possible	100	100	100	1 1 No.	

^{*} These characteristics are not assessed in coastal streams.

NC DWO Stream Identification Form Version 4.11

NC DWQ Stream Identification Form	n Version 4.11		3/01	3012			
NC DWQ Stream Identification Form Version 4.11 Date: 8-21-15 Project/Site: ACP Latitude: 36, 0268 Evaluator: DDWEST County: NASH Longitude: 77, 8826							
Evaluator: DDWEST	County: N	County: NASH Longitude:					
Total Points: Stream is at least intermittent if \geq 19 or perennial if \geq 30*		Stream Determination (circle one) Ephemeral Intermittent Perennial e.g. Quad Name:					
0.7							
A. Geomorphology (Subtotal =)	Absent	Weak	Moderate	Strong			
1" Continuity of channel bed and bank	0	1	(2)	3			
Sinuosity of channel along thalweg	0	1	2	(3)			
 In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence 	0	1	2	3			
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			
7. Recent alluvial deposits	0	1	(2)	3			
8. Headcuts	0	1	(2)	3			
9. Grade control	0	0.5	1	(15)			
10. Natural valley	0 _	0.5	1	(1.5)			
11. Second or greater order channel	(N	0=0	Yes	= 3			
artificial ditches are not rated; see discussions in manual							
B. Hydrology (Subtotal = 10.5)				_			
12. Presence of Baseflow	0	1	2	(3)			
		<u>'</u>	$\frac{1}{2}$	3			
13. Iron oxidizing bacteria	0		0.5	0			
14. Leaf litter	1.5	0.5	1	1.5			
15. Sediment on plants or debris	0	0.5	(12)	1.5			
16. Organic debris lines or piles		0.5	Yes				
17. Soil-based evidence of high water table?	I N	0-0	103				
C. Biology (Subtotal = (1), 5)				T			
18. Fibrous roots in streambed	3	(2)	1	0			
19. Rooted upland plants in streambed	رقی ا	2	11	<u> </u>			
20. Macrobenthos (note diversity and abundance)	0		2	3			
21. Aquatic Mollusks	(0)		2	3			
22. Fish	0	(0.5)	1	1.5			
23. Crayfish	0	0.5		1.5			
24. Amphibians	0	0.5		1.5			
25. Algae	0	(0.5)	$\frac{1}{2}$	1.5			
26. Wetland plants in streambed		FACW = 0.75 OB	L = 1.5) Other =	0			
*perennial streams may also be identified using other meth	ods. See p. 35 of manu	al.					
Notes:							
Sketch:							
A33 WHAP							
	()		<u> </u>				

SNAG012



Waterbody *SNAG012* facing upstream



Waterbody SNAG012 facing downstream

SNAG012



Waterbody SNAG012 facing upline cross stream

Open Waterbody Data Sheet

Open waterboo	ay Data Silee	,					
Survey Descripti	ion						
Project Name:		Waterbody N	Name:		٧	Vaterbody ID:	Date:
Atlantic Coast Pip	eline	Unnamed	Pond		C	DNAC002	3/11/2015
State:	County:		Company:		Crew I	Member Initials:	Photos:
North Carolina	Nash		NRG		CR, A	AS	ONAC00 2 001-003
Tract Number(s):	I		Nearest Milepost	:	A	ssociated Wetland	ID(s):
18-071			340.2		١	WNAC006	
Survey Type: (check one)	□Centerlir	ne ⊠F	Re-Route	□Access Ro	ad	□Other:	
Physical Attribut	tes						
Waterbody Type: (check one) ⊠Sto	ock Pond Natura	al Pond 🗆 La	ke 🗆 Reservoir	☐ Impoundme	ent 🗆	Oxbow Other:	
Hydrologic Regime:		. []	. Carrier a mara a mandi	. -	7 0	anally Flandad	Tananasasih. Elaadad
ОНWМ			Semipermanently	/ Flooded L	Seaso	onally Flooded	Temporarily Flooded
Height:	(check all that a		☐ Clear lir on bank	ne □She	elving	□Wrested vegetation	□Scouring □Water staining
<u>NA</u> ft.	□Ber vegeta	nt, matted, or nation	nissing □Wrack line	□Litte debris		☐ Abrupt plant community cha	☐Soil characteristic change
Depth of Water:		Bank heig	ht (average):			Bank slope (aver	age):
<u>_3</u> N/A□	<u>.</u> ft.		<u>5</u> ft			-	80_ degrees
Qualitative Attrib	outes						
Water Appearance: (check one)		IClear □1	Turbid □Shed		Surface ım	□Algal □0 mats	Other:
Substrate: (check all that apply)	□ Bedrock □ E	Boulder □ C	obble	⊠ Sand	□ Silt	t/ clay 🛚 Organic	☐ Other:
% of Substrate:	%	%	%	% <u>100</u> %		%%	%
Width of Riparian Zo	vne: Vegetativ		⊠ Trees:		⊠ Sapl	lings/Shrubs:	⊠ Herbs
ft. N/A⊠	•	of Dominant	s: <u>12</u> in.		<u>_2</u> in.		
Dominant Bank Vege	(approx.)						
Loblolly Pine, Sw	, ,	r Oak, Gian	t Cane				
Aquatic Habitats (ex:	submerged or emerged a	quatic vegetation,	overhanging banks/roots,	leaf packs, large so	ubmerged	wood, riffles, deep pools, e	tc.):
Downed trees wit	hin pond						
Aquatic Organisms (Observed (list):						
Frog							
T&E Species Observ	ed (list):						
None							
Disturbances (ex: live	estock access, manure	in waterbody, w	aste discharge pipes):			
Manmade pond							
Waterbody is: (check one)	☐ Natural		Artificial, man-mad	de 🗆 Man	ipulated	d	
Waterbody Quality a (check one)	: □ High		Moderate	□ Low			

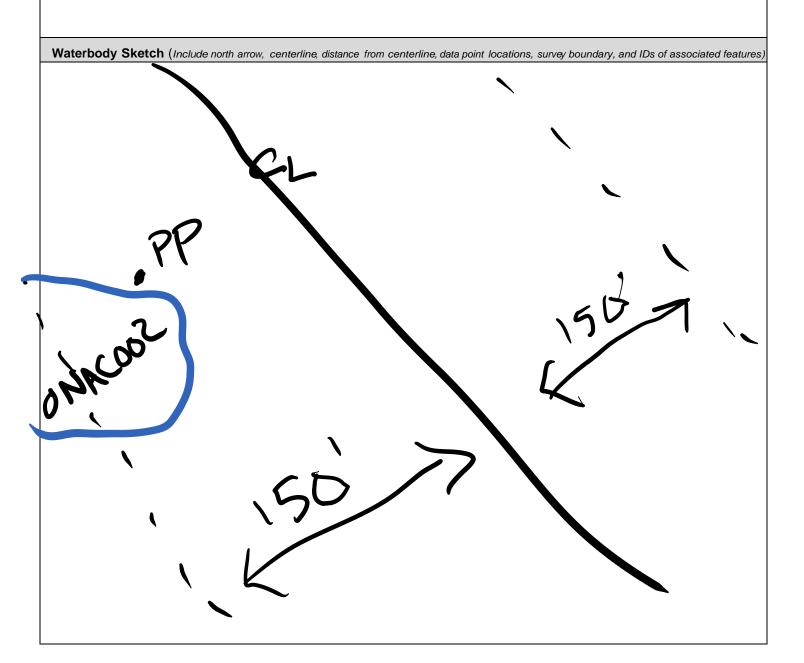
Waterbody	ID
ONAC002	2

^a **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.







Open waterbody ONAC002 facing north



Open waterbody ONAC002 facing west



Open waterbody ONAC002 facing south

USACE	AID#

DWO	#
~ · · · · ·	"

Site	#
SILC	#

(indicate on attached map)

STREAM QUALITY AS	SSESSMENT WORKSHEET
Provide the following information for the stream reach under	er assessment: SNAHOOS
1. Applicant's name: Dominion	2. Evaluator's name: DUEST
3. Date of evaluation:	4. Time of evaluation: 10 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
5. Name of stream: Unnamed to be tig Bir	6. River basin: TAR-Parrico
7. Approximate drainage area: > 100 cecs	8. Stream order:
9. Length of reach evaluated: 100 by	10. County: NASH
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
Latitude (ex. 34.872312): 36°00' 18. 737"	Longitude (ex77.556611): 77 54 37. 859
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 Other
14. Proposed channel work (if any): Work	
15. Recent weather conditions: Dry Few sh	ones
16. Site conditions at time of visit:	<u>.</u> Q
17. Identify any special waterway classifications known:	Section 10 Martidal Waters Dessential Fisheries Habitat Nutrient Sensitive Waters Water Supply Watershed (I-IV)
18. Is there a pond or lake located upstream of the evaluation po	
19. Does channel appear on USGS quad map? YES NO	20. Does channel appear on USDA Soil Survey? (YES) NO
	% Commercial% Industrial & % Agricultural
<i>1</i> , 2	% 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%)
	Frequent meander
location, terrain, vegetation, stream classification, etc. Every closeach 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 condition comment section. Where there are obvious changes in the chain into a forest), the stream may be divided into smaller reaches the reach. The total score assigned to a stream reach must range highest quality.	2): Begin by determining the most appropriate ecoregion based on haracteristic must be scored using the same ecoregion. Assign points egion. Page 3 provides a brief description of how to review the ect an overall assessment of the stream reach under evaluation. If a litions, enter 0 in the scoring box and provide an explanation in the racter of a stream under review (e.g., the stream flows from a pasture nat 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
11	
Evaluator's Signature	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.

STREAM QUALITY ASSESSMENT WORKSHEET

The presence of the Presence of pools in streams 0-3	#	CHARACTERISTICS	D(0(0)(42) (casta)	ION POINT	RANGE.	SCORE
(extensive alteration = 0, to alteration = max points)	11		0-5	0-4	passin—simes	4.
Technical Continuous	2	(extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	3
Catensive discharges = 0; no discharges = max points	3	(no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	
10		(extensive discharges = 0; no discharges = max points)	0 – 5	0-4	0-4	3
Receipt entrenched = 0; frequent (tooding = max points)	2 − −	(no discharge = 0; springs, seeps, wetlands, etc. = max points)				<u>l</u>
Receipty enterched = 0; frequent flooding = max points Receipty enterched = 0; frequent flooding = max points Receipty enterched = 0; large adjacent wetlands = max points State & (no wetlands = 0; natural meander = max points)		(no floodplain = 0; extensive floodplain = max points)				
Channel siquestry		(deeply entrenched = 0; frequent flooding = max points)				
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* 12 Evidence of channel incision or widening 0-5 0-4 0-5 3 13 Fresence of major bank failures (deeply incised = 0; stable bed & banks = max points) 0-5 0-5 0-5 3 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 3 16 Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points) 0-6 0-6 0-6 0 17 (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 0-5 19 Substrate embeddedness (deeply embedded = 0; loose structure = max) NA* 0-4 0-4 NA* 20 Presence of stream invertebrates (see page 4) 0-4 0-5 0-5 1 10 Covidence = 0; common, numerous types = max points) 0-4 0-4 0-4 0-4 21 (no evidence = 0; common, numerous types = max points) 0-4 0-4 0-4 0-4 22 Presence of fish (no evidence = 0; common, numerous types = max points) 0-6 0-6 0-5 0-5 3 23 (no evidence = 0; abundant evidence = max points) 0-6 0-6 0-5 0-5 3		(no wetlands = 0; large adjacent wetlands = max points) Channel sinuosity				
11 Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points) 12 Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points) 0-5 0-4 0-5 3 12 Presence of major bank failures (deeply incised = 0; stable bed & banks = max points) 0-5 0-5 0-5 3 13 Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points) 0-5 0-5 0-5 3 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 3 16 Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points) 0-6 0-6 0-6 3 16 Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points) 0-6 0-6 0-6 3 17 (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) (deeply embedded = 0; loose structure = max) 0-4 0-4 0-4 0-4 20 Presence of stream invertebrates (see page 4) 0-4 0-5 0-5 1 21 Presence of amphibians 0-4 0-4 0-4 0-4 22 Presence of fish (no evidence = 0; common, numerous types = max points) 0-4 0-4 0-4 0-4 22 Presence of common, numerous types = max points) 0-6 0-6 0-5 0-5 3 23 Evidence of wildlife use (no evidence = 0; common, numerous types = max points) 0-6 0-6 0-5 0-5 3		Sediment input				<u> </u>
12		Size & diversity of channel bed substrate				
13	12	Evidence of channel incision or widening				3
15		Presence of major bank failures	0-5	0-5	0-5	3
15		Root depth and density on banks	0-3	0-4	0-5	j
The control of the	15	Impact by agriculture, livestock, or timber production	0-5	0-4	0 5	3
19		(no riffles/ripples or pools = 0; well-developed = max points)	0 = 3	0-5	0-6	
19		(little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	3
19 (deeply embedded = 0; loose structure = max)	冒 18	(no shading vegetation = 0; continuous canopy = max points)	0 = 5	0=5	0 – 5	
20		(deeply embedded = 0; loose structure = max)				NK
23 Evidence of wildlife use 0-6 0-5 0-5 3 (no evidence = 0; abundant evidence = max points)		(no evidence = 0; common, numerous types = max points)				L
23 Evidence of wildlife use 0-6 0-5 0-5 3 (no evidence = 0; abundant evidence = max points)		(no evidence = 0; common, numerous types = max points)				
(no evidence = 0; abundant evidence = max points)		(no evidence = 0; common, numerous types = max points) Evidence of wildlife use				ピーク
2 Mai						
TOTAL SCORE (also enter on first page) 5				1:00	200	

^{*} These characteristics are not assessed in coastal streams.

SNAHOOS NC DWQ Stream Identification Form Version 4.11 Project/Site: SERP 8-4-2014 Latitude: 36°00' 18.739" Date: Longitude: 77°54'37-859" Evaluator: DDWEST County: NASH Other UNT to Pig Basket Creek **Total Points:** Stream Determination (circle one) Stream is at least intermittent Ephemeral Intermittent Perennial e.g. Quad Name: if ≥ 19 or perennial if ≥ 30* A. Geomorphology (Subtotal = Absent Weak Moderate Strong 1^a Continuity of channel bed and bank (2 [`] 0 3 2. Sinuosity of channel along thalweg (3) 0 1 2 3. In-channel structure: ex. riffle-pool, step-pool, 0 1 3 ripple-pool sequence 4. Particle size of stream substrate 0 3 5. Active/relict floodplain 0 3 6. Depositional bars or benches 0 3 7. Recent alluvial deposits 0 1 3 8. Headcuts 0 1 ์ 3 ๊ 9. Grade control 0 0.5 1.5 10. Natural valley 0 0.5 1.5 √√0 = 0 11. Second or greater order channel Yes = 3 a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = 12. Presence of Baseflow 13. Iron oxidizing bacteria (2) 0 1 3 14. Leaf litter 1.5 0.5 0 15. Sediment on plants or debris 0 0.5 1.5 16. Organic debris lines or piles 0 0.5 **`**1 1.5 17. Soil-based evidence of high water table? No = 0Yes = 3C. Biology (Subtotal = 18. Fibrous roots in streambed 0 2 19. Rooted upland plants in streambed 2 1 0 20. Macrobenthos (note diversity and abundance) 1 2 3 21. Aquatic Mollusks 0 2 3 22. Fish 0) 0.5 1 1.5 23. Crayfish 0 0.5 1 1.5 24. Amphibians 0 0.5 1.5 1) 25. Algae D.5 1.5 26. Wetland plants in streambed EACW = 0.75; OBL = 1.5 Other = 0 *perennial streams may also be identified using other methods. See p. 35 of manual Notes: S snah008



Waterbody snah008 facing east upstream



Waterbody snah008 facing west downstream



Waterbody snah008 facing upline cross stream

Open Waterbody Data Sheet

ONAHOOH

Survey Description		1. 2.1.			***************************************			
Project Name:	-	Waterbody N			W	aterbody ID:		Date:
Southeastern Reliabilit	ty	VNNO	nea			nah004		8-4
State: Cour			Company:	C			Photos:	
NCIN	HEAL		DDMES		20	, MB	-	2
Tract Number(s):			Nearest Milepost:			ssociated Wetland	ID(s):	
(8.084)	,		338			NONS	-	
Survey Type: (check one)	⊠Centerline	: OR	le-Route 🗆	Access Road	d	□Other:		
Physical Attributes							·	
Waterbody Type: (check one) Stock Po	nd 🗆 Natural	Pond 🗆 La	ke □ Reservoir □ I	mpoundmen	nt 🗆 (Oxbow □ Other:		
Hydrologic Regime:	Permanently I	Flooded \square	Semipermanently Flo	ooded 🗆	Seaso	nally Flooded	Temporari	ly Flooded
онwм	OHWM Indic	ator:	•					
Height: NA	(check all that ap	piy)	⊠ Clear line on bank	□Shelv	/ing	□Wrested vegetation	□Sco	uring □Water staining
	□Bent, vegetat		issing □Wrack line	□Litter debris	and	□Abrupt plant comṁù li ity cha		naracteristic change
Depth of Water:	···	Bank heig	nt (average):			Bank slope (avera	ige):	
N/A□ 2 - Ce ft.			<u> </u>			and the second	<u>4о</u> _{de}	grees
Qualitative Attributes					***************************************			
Water Appearance:								
[Ureck Orie)	water 🗆 C	Clear 🔀	urbid □Sheen on surface		ırface 1	□Algal □C mats	Other:	
Substrate: Be	edrock 🗆 Bo	ulder 🗆 Co				, ,	☐ Other:	
% of Substrate:	%	%	%%	50 %	50	_%%	%	
Width of Riparian Zone:	Vegetative	Layers:					-	
ft.	(check all that a	pply)	☐ Trees:	Ε] Sapli	ngs/Shrubs:	Herbs	
N/A	Avg. DBH (of Dominants	in.	_		in.	i	n.
Dominant Bank Vegetation		m. 700	laun					
	, , ,	ucco	recor					
Aquatic Habitats (ex: submer	ged or emerged aqu	uatic vegetation, o	verhanging banks/roots, leaf p	oacks, large subi	merged v	wood, riffles, deep pools, et	c.) :	
(1)	Manic	wed)	pends	in	100	rel:		
Aquatic Organisms Obser	ved (list): (c	EOPOYO	9, ball fr	035, E	216	AM		
T&E Species Observed (lis	<i>t</i>)::							
, , , , , , , , , , , , , , , , , , , ,	W2	3005						
Disturbances (ex: livestock a	access, manure in	n waterbody, w	aste discharge pipes):	· · · · · · · · · · · · · · · · · · ·	ο·	20.0		
Waterbody is:		,00		·une		1 hours		
(check one)	□ Natural	Artificia	al, man-made 🔲 N	Manipulated				
Waterbody Quality ^a : (check one)	☐ High	☐ Moderate	Low					

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.

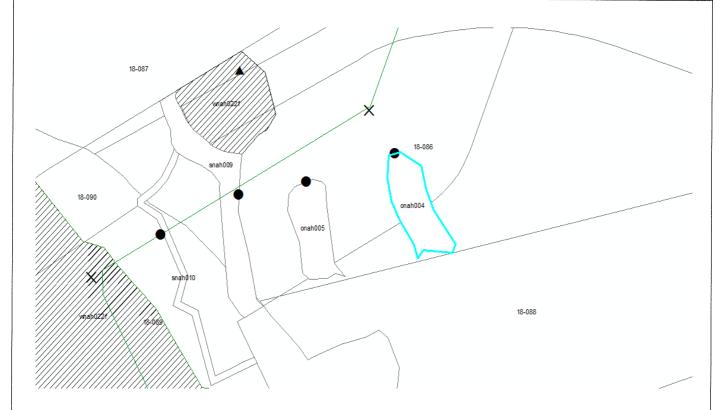
Moderate Quality: Altered by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or bank vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers 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:

Man-made excavated pond in yord Mowed around.

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



onah004



Open water onah004 facing north



Open water onah004 facing west

Open Waterbo	dy Data Shee					ON.	AHC	005
Survey Descrip	tion		-			- 1		
Project Name:		Waterbody N	ame:		Waterbody ID:		Date:	
Southeastern Re	eliability	UNION				_	Date:	-11
State:	County:		~~~~		onah00	_		
otate.	_	4	Company:	1 _	Member Initials:	Photos:	~7	
\mathcal{N}	NAS		DDWES	1 7	D, MB		_	
Tract Number(s):	1.6		Nearest Milepost:		Associated Wetland	l ID(s):	***************************************	
	8-09	6	338		No	3U		
Survey Type: (check one)	X Centerlir	ne □R	e-Route □A	ccess Road	☐Other:			
Physical Attribu	ıtes	:			***************************************			
Waterbody Type: (check one)	ock Pond Natura	al Pond □ Lak	te □ Reservoir □ In	npoundment [Oxbow Dother:			
Hydrologic Regime		Flooded	Semipermanently Flor	oded 🗀 Sea	sonally Flooded	Temporari	ily Flooded	
онwм	OHWM Ind				oondry 1 looded	remporan	ily i looded	oded Water staining
Height:	ft. (check all that a	ipply)	Clear line on bank	□Shelving	□Wrested vegetation	□Sco	_	
	□Ben vegeta		ssing □Wrack line	□Litter and debris	□Abrupt plan community ch		naracteristic	change:
Depth of Water:		Bank heigh	t (average):		Bank slope (ave	rage):	· · · · · · · · · · · · · · · · · · ·	
<u>2-</u> N/A□	Ce ft.		ft.			117	grees	
Qualitative Attri	butes		· ·					a Kyuna yan
Water Appearance: (check one)	□No water □	Clear XI	ırbid □Sheen on surface	□Surface scum	e □Algal □ mats	Other:		
Substrate: (check all that apply)	☐ Bedrock ☐ B	oulder 🗆 Co	/		ilt/ clay □ Organic	☐ Other:		
% of Substrate:	%	%	_% % 4	<u> </u>	<u> </u>	%	,	
Width of Riparian Zo	one: Vegetative	: Layers:					,	*******
	(check all that	apply)	☐ Trees:	□ Sa	plings/Shrubs:	Herbs		
<u>ft</u> .	Ava DBH	of Dominants:						
N/A□	(approx.)	oi Dominants:	in.		in.	i	n.	
Dominant Bank Veg		1						
	Mowed	العثا ا	^					
Aquatic Habitats (ex. MCLM	submerged or emerged ac	quatic vegelation, ov	erhanging banks/roots, leaf pa	cks, large submerge	d wood, riffles, deep pools, e	etc.)#		
Aquatic Organisms	Observed/dist):	\sim	7					
Aquatic Organisms		Hougs,	bream					
T&E Species Observ /	VEDIUE							Α,
Disturbances (ex: live	estock access, manure			0 -				
		1000	Surrous	relley	12000			
Waterbody is: (check one)	□ Natural	Artificial	, man-made 🔲 Ma	anipulated				
Waterbody Quality ^a (check one)	: □ High	☐ Moderate	Low					

Waterbody ID:

ANAHOUS

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.

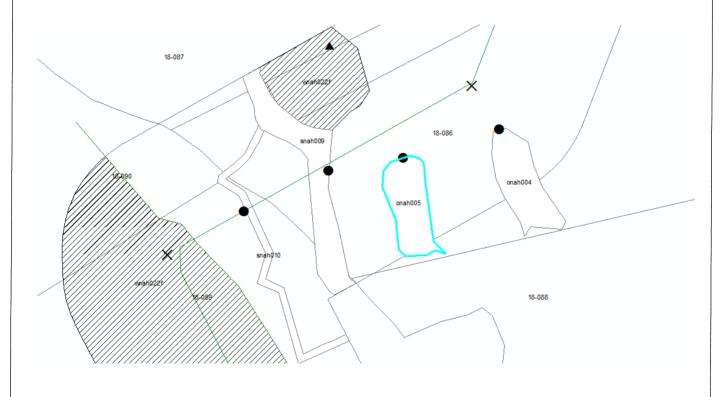
Moderate Quality: Altered by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or bank vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate odor; minor barriers 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:

Man-made excavated pend in yourd maintained lawn surrounding.

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



onah005



Open water onah005 facing north



Open water onah005 facing west

SNAHOOG

(indicate on attached m

USACE AID#	DWQ #	Site #	(indicate on attached map)



STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for the stream reach under assessment:
1. Applicant's name: Dominion 2. Evaluator's name: DOWEST
3. Date of evaluation: 4. Time of evaluation:
5. Name of stream: Systemer basin: TAR- Parm LICO
7. Approximate drainage area: > 1020000 CN. Stream order: \St
9. Length of reach evaluated: 1000 ft 10. County: NASH
11. Site coordinates (if known): prefer in decimal degrees. 12. Subdivision name (if any):
Latitude (ex. 34.872312): 3859 58.469 Longitude (ex77.556611): 77 54 41.132
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): NOVE
15. Recent weather conditions: Dry - few showers
16. Site conditions at time of visit:
17. Identify any special waterway classifications known: Wasection 10 Waters Waters Wasential Fisheries Habita Trout Waters Water Supply Watershed Waters Water Supply Watershed Waters Water Supply Watershed
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% Agricultural
40 % Forested% Cleared / Logged% Other (
22. Bankfull width: 25 23. Bank height (from bed to top of bank): 30
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 bendsYFrequent meanderVery sinuousBraided channel
Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based of 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 characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If 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): 65 Comments: 12 Bashof Creek
Evaluator's Signature Date 8-4-14
Evaluator's Signature Date D 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

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

	4	CHARACTERISTICS	1110(0)(114)	9 (0)2 E (0) E	HEAVOD.	-X(0(0))(IF.
			i i Elakh -	- Pigilatone	- Mountain	
	ı	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	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0/=-6	0-4	0\$	2.
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	3
<u>-</u>	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0 3	0 – 4	0-4	<u> </u>
	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	3 3 2
	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	3
	B	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	3
	9	Channel sinussity (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	
	Ш	Size & diversity of channel bed substrate (fine, homogenous = 0; large; diverse sizes = max points)	NA*	0-4	0-5	MA
ب خ	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0 – 5	04	0 – 5	3 3 2
	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	3
3	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	05	L
9.	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	
IMBINI	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	5
4	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	05	0-5	4
	ij	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	<i>M</i>
اعدر	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	3
HOLESCO	21	Presence of amphibians (по 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	2
	23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	
		Total Points Possible	100	103	100	مرايا
		TOTAL SCORE (also enter on f	itst page)			45

^{*} These characteristics are not assessed in coastal streams.

SNAHOOG

	Version 4.11			
Date: 8-4(-14	Project/Site: 52	SKP	Latitude: 35	39'58.46
Evaluator: DOWEST	County: NA	5#	Longitude: 7	7°54'41
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		nation (circle one) mittent Perennial	Other Pig Ba e.g. Quad Name:	
			·	
A. Geomorphology (Subtotal = $2(.5)$)	Absent	Weak	Moderate	Strong
1 ^{a.} 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	1	2	(3)
ripple-pool sequence				
4. Particle size of stream substrate	0	1	\mathcal{Q}	3
i. Active/relict floodplain	0	1	(2)	3
6. Depositional bars or benches	0	1	2	<u>(3)</u>
7. Recent alluvial deposits	0	1	(2)	3
3. Headcuts	0	1	-(2)	3
9. Grade control	0	0.5		(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		and the second s		
B. Hydrology (Subtotal = 155)				
2. Presence of Baseflow	0	1	2	(.3)
3. Iron oxidizing bacteria	0	1	2	63
4. Leaf litter	1.5	1	(0.5)	0
5. Sediment on plants or debris	0	0.5	(12	1.5
6. Organic debris lines or piles	1 0 1	0.5	71	1.5
17. Soil-based evidence of high water table?	No	= 0	(Yes	the same of the sa
C. Biology (Subtotal = 12.75)		L		
18. Fibrous roots in streambed	3	2	1	0
9. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	0	1	(2)	3
21. Aquatic Mollusks	1 0	(D)	2	3
22. Fish		0.5	$\bar{\overline{(1)}}$	1.5
23. Crayfish	0	0.5	$\overline{(1)}$	1.5
24. Amphibians	0	0.5	(1)	1.5
25. Algae	0	0.5	(1)	1.5
-o. / nguo		FACW = 0.75) OBI	= 15 Other = (1
26. Wetland plants in streamhed		(1 / 10 VV = 0.7 0 J) ODE	1.0 00101	
26. Wetland plants in streambed *perennial streams may also be identified using other methods.	See n. 35 of manual			



Waterbody snah009 facing north upstream



Waterbody snah009 facing south downstream



Waterbody snah009 facing upline cross stream

SNAHOLO

USACE AID#	DWO #	Cita #	(indicate an attached man)
O CITO DI TITO	D 17 Q II	Site #	(indicate on attached map)

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16			ч	٠.	ı
1 1	,	•	-	ı	
1 8		. 4			
1 E				•	1

STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for the stream reach under	er assessment:
1. Applicant's name: Dominion	2. Evaluator's name: DD WEST
3. Date of evaluation: 8-4-14	4. Time of evaluation: 12, 42
5. Name of stream: UNICHALIDARIB TO PROS	ERiver basin: VAR - PHM LICO
7. Approximate drainage area: $\frac{1}{2}$	8. Stream order:
9. Length of reach evaluated: 100++	10. County: NAS W
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
Latitude (ex. 34.872312); 35°59′57. 713°	Longitude (ex77.556611): 77°54′42.624′′
Method location determined (circle): GPS Topo Sheet Ortho (A	erial) Photo/GIS Other GIS Other
13. Location of reach under evaluation (note nearby roads and la	andmarks and attach map identifying stream(s) location):
I Day S	
14. Proposed channel work (if any):	
	Sicaneles
16. Site conditions at time of visit:	671/2 417/2
17. Identify any special waterway classifications known:	Section 10 Photal Waters MEssential Fisheries Habitat Nutrient Sensitive Waters Mater Supply Watershed (I-IV)
18. Is there a pond or lake located upstream of the evaluation po	int? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? (XES) NO	20. Does channel appear on USDA Soil Survey? (YES) NO
21. Estimated watershed land use:% Residential	% Commercial% Industrial% Agricultural
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 \(\sum \) Occasional bends _	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every c to each characteristic within the range shown for the ecore characteristics identified in the worksheet. Scores should reflicharacteristic cannot be evaluated due to site or weather concomment section. Where there are obvious changes in the chainto 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 egion. Page 3 provides a brief description of how to review the ect an overall assessment of the stream reach under evaluation. If a litions, enter 0 in the scoring box and provide an explanation in the racter of a stream under review (e.g., the stream flows from a pasture nat 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): Comment	s: Intermitant channel that
1.	J. C.
0.5	
Evaluator's Signature	Date 2 -4 - 14
This channel evaluation form is intended to be used only as	s a guide to assist landowners and environmental professionals in
gathering the data required by the United States Army C	Corps of Engineers to make a preliminary assessment of stream
	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.

SNAHOIO STREAM QUALITY ASSESSMENT WORKSHEET

# CHARACTERISTICS			H(02/150)150		HOORE
		Coastal	- Bidinati	it) (ii) intain:	melwyjieu
1	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0-2	0-5	3
2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	<u>3</u>
3	Riparian zone (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	3
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	2
7	Entrenchment / Noodplain 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	2 2 2
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	7-
[1]	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0 – 5	少出
12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	1
12 13 14	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0 – 5	0-5	
14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0 – 4	0-5	ļ
15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	(1)=.5	()	05	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	
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	
19	Substrate embeddedness (deeply embedded = 0, loose structure = max)	NA*	0-4	0-4	L)YA
29	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0 – 5	0-5	۵
21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	04	0-4	0-4	
21 22	Presence of fish (no evidence = 0; common, numerous types = max points)	04	04	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	

^{*} These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11

SIUNHOID

	Weak 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Moderate 2 2 2 2 2 2 1 1 Yes =	Strong 3 3 3 3 3 3 1.5 1.5
Sent 0 0 0 0 0 0 0 0 0	Weak 1 1 1 1 0.5 0.5	e.g. Quad Name: Moderate 2 2 2 2 2 2 2 1 1	Strong 3 3 3 3 3 3 3 1.5 1.5
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 2 2 2 2 2 2 2 2 2 1 1	3 3 3 3 3 3 3 3 1.5
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	2 2 2 2 2 2 2 2 2 2 1 1	3 3 3 3 3 3 3 3 1.5
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.5	2 2 2 (2) 2 (2) 2 2 1	3 3 3 3 3 3 3 1.5
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	0.5	2 2 2 2 2 2 2 1 1	3 3 3 3 3 3 1.5
0 0 0 0 0 0 0 0 No = 0	0.5	2) 2 2 2 1 1	3 3 3 3 1.5
0 0 0 0 0 0 0 No = 0	0.5	2 2 2 1 1	3 3 3 1.5 1.5
0 0 0 0 0 No = 0	0.5	2 2 2 1 1	3 3 1.5 1.5
0 0 0 No = 0	0.5	2 1 1	3 1.5 1.5
0 0 No = 0	0.5	2 1 1	3 1.5 1.5
0 No = 0	0.5	1 1	1.5 1.5
0 No = 0	0.5	1	1.5
0		Yes =	
	4		
0	1	(2)	3
	(1)	2	3
.5	1	(0.5)	0
0	(0.5)	1	1.5
	(0.5)	11	1.5
No = 0		Yes =	: 3
			0
			0
			3
			3
			1.5
			1.5
			1.5
		•	1.5
	ACW = 0.75; OB	L = 1.5 Other = 0	
of manual.		·····	
	3 3 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	No = 0 3	No = 0 Yes = 3



Waterbody snah010 facing north upstream



Waterbody snah010 facing south downstream



Waterbody snah010 facing east cross stream

USACE AID#	DWQ #		Site # (in	dicate on attached map)
STI	REAM QUALITY A	SSESSMENT W	ORKSHEET	3NAHU
Provide the following information	tion for the stream reach un	der assessment:		
· k	÷ 0	2. Evaluator's name:	DOWS	ST
STREAM QUALITY ASSESSMENT WORKSHEET Provide the following information for the stream reach under assessment:				
. Name of stream: Pici Bre	repet Crook	6. River basin:	OR-PEML	-100
		1	2	
. Length of reach evaluated:	1008+	10. County: \(\sum_{\text{\tin}}\text{\tin}\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tint{\text{\tint{\text{\tint{\tint{\text{\ti}\text{\text{\text{\tinit}\\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tetx{\text{\text{\text{\text{\text{\ti}}\tittt{\text{\text{\text{\ti}}\text{\texi}\text{\text{\text{\text{\text{\texi}\text{\text{\texi}\text{\text{\text{\text{\texi}\text{\text{\texi}\text{\text{\texit{\text{\texi}\texit{\texi}\text{\texitit}}\text{\texit{\text{\tex	ASH	
1. Site coordinates (if known):	prefer in decimal degrees.			·
. 2		Longitude (ex77.55661	n: 77°54°	39.576"
		landmarks and attach ma	p identifying stream	s) location):
		dom sers		
	1 0.	c		
7. Identify any special waterwa	y classifications known:	Nutrient Sensitive Water	rs Mwater Supp	ly Watershed MH (I-IV)
1. Estimated watershed faild us				Agricultural
2. Bankfull width:) To rolested		·	
	of stream: X Flat (0 to 2%)		-	
-				
nstructions for completion of ocation, terrain, vegetation, street or each characteristic within the haracteristics identified in the haracteristic cannot be evaluated.	f worksheet (located on pag cam classification, etc. Every the range shown for the eco worksheet. Scores should re ed due to site or weather con	characteristic must be so region. Page 3 provide flect an overall assessmenditions, enter 0 in the so	ning the most appro ored using the same es a brief description of the stream rea coring box and prov	priate ecoregion based of ecoregion. Assign point on of how to review the ch under evaluation. If vide an explanation in the

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):

Evaluator's Signature (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.



STREAM QUALITY ASSESSMENT WORKSHEET

#	CHARACTERISTICS	Ceastal	SION POINT Piedmont	Mountain	SCI
	Presence of flow / persistent pools in stream	0-5	0-4	0-5	زے
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(no flow or saturation = 0; strong flow = max points)	,	2-1	2 - 2	
	Evidence of past human alteration	0-6	0-5	0-5	3
	(extensive alteration = 0; no alteration = max points)	L.		7 7	
	Riparian zone	0-6	0.4	0-5	رے ا
	(no buffer = 0; contiguous, wide buffer = max points)				
	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	7
	Groundwater discharge				<u> </u>
	(no discharge = 0, springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	2
	Presence of adjacent floodplain				سا
	(no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	5
	Entrenchment / floodplain access				}
7	(deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	3
4	Presence of adjacent wetlands	0-6	0-4	0-2	Ł.
	(no wetlands = 0; large adjacent wetlands = max points)		U-4	U-2	<u> </u>
	Channel sinuosity	0-5	0-4	0-3	
	(extensive channelization = 0; natural meander - max points)			12 .7	4
	Sediment input	0-5	0-4	0-4	2
	(extensive deposition= 0; little or no sediment = max points)				*
	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	l NA*	0-4	05	NJ!
	Evidence of channel incision or widening				p
	(deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	3
	Presence of major bank failures				
1.4	(severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	2
	Root depth and density on banks	0-3	0-4	0-5	2
	(no visible roots = 0; dense roots throughout = max points)	v-3	U-4	ν−υ	#
	Impact by agriculture, livestock, or timber production	0-5	0-4	0-5	يــــــــــــــــــــــــــــــــــــ
	(substantial impact =0; no evidence = max points)			Ψ -	Ī
	Presence of riffle-pool/ripple-pool complexes	0-3	0=5	06	2
	(no riffles/ripples or pools = 0; well-developed = max points)				
	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	
	Canopy coverage over streambed				
14	(no shading vegetation = 0; continuous canopy = max points)	0-5	0=5	0-5	Ĺ.
	Substrate embeddedness				
13	(deeply embedded = 0; loose structure = max)	1774	0:-4	0-4	M
24	Presence of stream invertebrates (see page 4)				, //
	(no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	2
1	Presence of amphibians	0-4	()—:	()=4)	2
	(no evidence = 0; common, numerous types = max points)			Y 7	
11	Presence of fish	0-4	0-4	0-4	Ð
	(no evidence = 0; common, numerous types = max points)				L L
11	Evidence of wildlife use	0-6	0-5	0-5	
	(no evidence = 0; abundant evidence = max points)				
	Total Points Possible	100	i int	· (i)i	
		irst page)			رحرد

^{*} These characteristics are not assessed in coastal streams.

SNAH012 NC DWQ Stream Identification Form Version 4.11 Project/Site: SERP Date: Latitude: 7 **Evaluator:** County: Longitude: Other Pig Basket Creek **Total Points:** Stream Determination (circle one) Stream is at least intermittent Ephemeral Intermittent Rerennial) e.g. Quad Name: if \geq 19 or perennial if \geq 30* A. Geomorphology (Subtotal = **Absent** Weak Moderate Strong 1^a Continuity of channel bed and bank 0 1 3 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 4. Particle size of stream substrate 0 2 3 5. Active/relict floodplain 0 2 3 6. Depositional bars or benches 0 3 7. Recent alluvial deposits 0 1 **7**2 3 8. Headcuts 0 1 3 9. Grade control 0.5 0 1.5 10. Natural valley 0 (0.5)1.5 11. Second or greater order channel Yes = 3a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = 7 12. Presence of Baseflow 0 1 3 13. Iron oxidizing bacteria 0 3 14. Leaf litter 1.5 1 0.5 0 15. Sediment on plants or debris 0 1.5 0.5 16. Organic debris lines or piles 0 1 1.5 17. Soil-based evidence of high water table? No = 0Yes = 3C. Biology (Subtotal = 18. Fibrous roots in streambed 0 19. Rooted upland plants in streambed 0 20. Macrobenthos (note diversity and abundance) 2 3 21. Aquatic Mollusks 0 3 22. Fish 0 0.5 1.5 23. Crayfish 0 0.5 1.5 24. Amphibians 0 0.5 1.5 25. Algae 0 0.5 1.5 26. Wetland plants in streambed FACW = 0.75 OBL = 1.5) Other = 0 *perennial streams may also be identified using other methods. See p. 35 of manual. Sketch:



Waterbody snah012 facing north upstream



Waterbody snah012 facing south downstream



Waterbody snah012 facing east cross stream

USACE AID#	

DWO	#

	SNA	HO	15
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	_	-			
Site	#	(indicate on	attached	map)	١





Provide the following information for the stream reach under assessment: 1. Applicant's name: 2. Evaluator's name: 3. Date of evaluation: 4. Time of evaluation: 5. Name of stream: 570704 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): 7 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: 16. Site conditions at time of visit: 17. Identify any special waterway classifications known: Mection 10 Widal Waters Month Waters Mater Supply Watershed Waters Waters Water Supply Watershed Water Supply Watershed 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 36% Agricultural % 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 Very sinuous 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 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 ECOREGION POINT RANGE		ΓRANGE	E SCORE	
	#	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	5
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	3 5 3 3
	3	Riparian zone (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
3AL	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0 – 3	0-4	0 – 4	3
PHYSICAL	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	3
PH.	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	5
	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	MA
7	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	3
STABILITY	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0 – 5	3
TAB	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
<u></u>	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
ITA	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0 – 6	0 – 6	14
HABITAT	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	NA
<u>ا</u> بح	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0 – 5	2
90,	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	2
	23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0 – 6	0-5	0 – 5	5
	100	Total Points Possible	100	100	100	
		TOTAL SCORE (also enter on fi	rst page)			68

^{*} These characteristics are not assessed in coastal streams.

Date: 8 - 8 - 7 4	Project/Site: 52	ERP	Latitude:	59'04.6
Evaluator: DDWEST	County:	ASH	Longitude: 7	1843
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* L13	Stream Determir Ephemeral Inter	nation (circle one) mittent Perennial	Other Stony e.g. Quad Name:	
A. Geomorphology (Subtotal = 15)	Absent	Weak	Modoroto	Strong
1 ^a Continuity of channel bed and bank	Absent 0	1 1	Moderate	Strong
Sinuosity of channel along thalweg	0	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	$\mathcal{C}_{\mathcal{C}_{\mathcal{C}_{\mathcal{C}_{\mathcal{C}}}}}$	
6. Depositional bars or benches	0	1	423	(3)
7. Recent alluvial deposits	0	1_	2	(3)
B. Headcuts	0	(1)	2	3
9. Grade control	0	0.5	(1)	1.5
10. Natural valley	0	0.5	\mathcal{T}	1.5
11. Second or greater order channel	No	= 0	Yes:	= 3
artificial ditches are not rated; see discussions in manual				
3. Hydrology (Subtotal = 10,5)				
2. Presence of Baseflow	0	1	2	(3)
3. Iron oxidizing bacteria	0	1	2	(3)
4. Leaf litter	(1.5-)	1	0.5	0
5. Sediment on plants or debris		0.5	1	(1.5)
6. Organic debris lines or piles	0	0.5	1	(1.5)
17. Soil-based evidence of high water table?	No	= 0	Yes :	
C. Biology (Subtotal = (5)				
18. Fibrous roots in streambed	$\frac{1}{3}$	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	0	0.5		1.5
4. Amphibians	0	0.5	(1)	1.5
5. Algae	0	0.5	-(1)	1.5
6. Wetland plants in streambed		FACW = 0.75; (OBL	. = 1.5 Other = 0)
	See n. 35 of manual		Annual Printers	
perennial streams may also be identified using other methods.	. See p. 55 oi manuar			



Waterbody snah015 facing west upstream



Waterbody snah015 facing east downstream



Waterbody snah015 facing upline cross stream

SNAHO16

PMI 1110 1110 1110 1110 1110 1110 1110 11				2001111214
USACE AID#	DWQ #		Site #	_ (indicate on attached map)
ST	REAM QUALITY A	SSESSMENT WO		
Provide the following informa	ition for the stream reach und	ler assessment:	SNA	HOTE
1. Applicant's name:	ominion	2. Evaluator's name:	DAW	EST
3. Date of evaluation: 8-	5-14	4. Time of evaluation:_	12:5	
5. Name of stream: UNNA	emed tribto Ston	16. River basin:	IR-PA	MLICO
7. Approximate drainage area:_	>50 Acros		<u>5+</u>	
9. Length of reach evaluated:	100 77	10. County:	ASH	
11. Site coordinates (if known): Latitude (ex. 34.872312); 35°58'		12. Subdivision name (i	A	341'57.577"
Method location determined (circle) / 02:32:
13. Location of reach under eva	lluation (note nearby roads and	landmarks and attach map	GIS Other o identifying st	tream(s) location):
				, , ,
14. Proposed channel work (if a	any): NOWE			
15. Recent weather conditions:	Dry- Few	showers		
16. Site conditions at time of vis				
17. Identify any special waterwa	ay classifications known:	Section 10 PAd	al Waters	☑ <u>@</u> Essential Fisherics Habitat Supply Watershed ☑ ¥(I-IV)
18. Is there a pond or lake locate	ed upstream of the evaluation r	oint? VES NO If wes	estimate the v	vater surface areas
19. Does channel appear on US		20. Does channel appea		
21. Estimated watershed land us	10	% Commercial		
	<i>a</i> •O∧	% Cleared / Logged		_
22. Bankfull width:	4	23. Bank height (from b		/
24. Channel slope down center of	of stream: Flat (0 to 2%)			
25. Channel sinuosity:Stra	↑	Frequent meander		
Instructions for completion of location, terrain, vegetation, strate each characteristic within the characteristics identified in the characteristic cannot be evaluated comment section. Where there into a forest), the stream may be reach. The total score assigned highest quality.	eam classification, etc. Every the range shown for the econ worksheet. Scores should refeted due to site or weather con are obvious changes in the che divided into smaller reaches	e 2): Begin by determinicharacteristic must be scoregion. Page 3 provides flect an overall assessment ditions, enter 0 in the scaracter of a stream under that display more continuity.	ing the most a ored using the s a brief desc at of the stream oring box and review (e.g., t ity, and a sepa	appropriate ecoregion based or same ecoregion. Assign points cription of how to review the m reach under evaluation. If a provide an explanation in the the stream flows from a pasture rate form used to evaluate each
Total Score (from reverse):	H Commer	nts.		0 6 .
hillside form		Soope 1354	ind s	to al acon
		-		
Evaluator's Signature	Ahma-		Date	5-5-14

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.

#	CHADACTEDICTICS	ECOREGION POINT RANGE		E	
#	CHARACTERISTICS	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	4
2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0 – 6	0-5	0 – 5	3
3	Riparian zone (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	2
5	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	1
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	1
9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	ĺ
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
12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0 – 5	0-4	0-5	Ч
13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0 – 5	0-5	0 – 5	4
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	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	l
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	4
19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0 – 4	NR
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	0
23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	13
	Total Points Possible	100	100	100	

^{*} These characteristics are not assessed in coastal streams.

SNAHDIG

NC DWQ Stream Identification For	m Version 4.11	2/1		4	
Date: 8-5-12	Project/Site: 5	ERP	Latitude?5	58' 45.5%"	
Evaluator: DDWZST	County:	出け	Longitude: 7	17°54′52.52	
Total Points: Stream is at least intermittent if ≥ 19 or perennial if $\geq 30^*$	Stream Determi Ephemeral Inte	ination (circle one) ermittent (Perennia)	Other UNT t	o Stony Creek	
A. Geomorphology (Subtotal = 13, 5)	Abcont				
1ª. Continuity of channel bed and bank	Absent 0	Weak	Moderate	Strong	
Sinuosity of channel along thalweg			2	3	
3. In-channel structure: ex. riffle-pool, step-pool,	0		2	3	
ripple-pool sequence	0	T_1) Γ	2	3	
4. Particle size of stream substrate	0				
5. Active/relict floodplain	0		(2)	3	
6. Depositional bars or benches	0		2	3	
7. Recent alluvial deposits		$-\frac{2}{3}$	2	3	
Headcuts	0		Q	3	
9. Grade control	_ 0	1	-(2)	3	
10. Natural valley	0	0.5	$\underline{C1}$	1.5	
11. Second or greater order channel	0 1	0.5	1	(1.5)	
a crificial displacement and a state of the	(No)=0)	Yes	= 3	
a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal =		•			
12. Presence of Baseflow	1 o 1	1	2		
13. Iron oxidizing bacteria			2	$\frac{3}{3}$	
14. Leaf litter		-	2	(3)	
15. Sediment on plants or debris	1.5		0.5	0	
16. Organic debris lines or piles	0	0.5	(1)	1.5	
17. Soil-based evidence of high water table?	0 1	0.5	(1)	1.5	
	No	= 0	Yes :	= 3)	
C. Biology (Subtotal =)					
18. Fibrous roots in streambed	3	(2) T	1	0	
19. Rooted upland plants in streambed	(3)	2	1	0	
20. Macrobenthos (note diversity and abundance)	0	<i>(</i> 1)	2	3	
21. Aquatic Mollusks	(b)	1	2	3	
22. Fish	(0)	0.5	1	1.5	
23. Crayfish		0.5	18 D	7.5	
24. Amphibians	0	0.5	1	4.5	
25. Algae	0	0.5	$\frac{1}{1}$		
26. Wetland plants in streambed			= 1 5 0 th o = 0	1.5	
*perennial streams may also be identified using other methods. See p. 35 of manual.					
Notes: ,					
snah016					
	`				



Waterbody snah016 facing east upstream



Waterbody snah016 facing west downstream



Waterbody snah016 facing upline cross stream

	SNAH017
USACE AID# DWQ #	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:	2. Evaluator's name: DOUEST
3. Date of evaluation:	4, Time of evaluation: 2153
5. Name of stream: un named trib to Store	6. River basin: TAR-PAMLICO
7. Approximate drainage area: > 100 pcres	8. Stream order:
9. Length of reach evaluated:	10. County: NASH
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
Latitude (ex. 34.872312): 35 55 50 . 86/	Longitude (ex77.556611): 77°54′49. 263″
Method location determined (circle): GPS Topo Sheet Ortho (A	Aerial) Photo/GIS Other GIS Other
13. Location of reach under evaluation (note nearby roads and	andmarks and attach map identifying stream(s) location):
14 Proposed shows I will be a first of DDM 15	
14. Proposed channel work (if any):	
16. Site conditions at time of visit:	howers
	Section 10 Maridal Waters Whesential Fisheries Habitat
	Nutrient Sensitive Waters Waters Supply Watershed (I-IV)
18. Is there a pond or lake located upstream of the evaluation po	oint? 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 NO
21. Estimated watershed land use: % Residential	% Commercial% Industrial @#Agricultural
50 6 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:StraightOccasional bends _	Frequent meander
to each characteristic within the range shown for the ecore characteristics identified in the worksheet. Scores should refl characteristic cannot be evaluated due to site or weather conc comment section. Where there are obvious changes in the cha 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 egion. Page 3 provides a brief description of how to review the ect an overall assessment of the stream reach under evaluation. If a litions, enter 0 in the scoring box and provide an explanation in the racter of a stream under review (e.g., the stream flows from a pasture nat 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

Evaluator's Signature

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	#	CHARACTERISTICS	ECOREC	GION POINT	RANGE	acone
			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 4
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	4
	3	Riparian zone (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
AL	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	100
PHYSICAL	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	
PH	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	1
	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	1
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	PA
LX	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	2
HLT	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	2
STABILITY	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	l
S	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0 – 5	0-4	0-5	3
T	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
HABITAT	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	<i>'\</i>
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	NX
Y	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	
BIOLOGY	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	2
BIO	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	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)
		TOTAL SCORE (also enter on fir	st page)	100	Self-time Contract	47
* T	haca ch	aracteristics are not assessed in coastal streams.				

^{*} These characteristics are not assessed in coastal streams.

SNAHO17 NC DWQ Stream Identification Form Version 4.11 Latitude: 35°58'30,861" Date: Project/Site: < S R Evaluator; Longitude: 77°54′49,763′ County: **Total Points:** Stream Determination (circle one) Other UNT to Stony Creek Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* Ephemeral Intermittent Perennial e.g. Quad Name: A. Geomorphology (Subtotal = **Absent** Weak Moderate Strong 1^a Continuity) of channel bed and bank 0 1 (2 2. Sinuosity of channel along thalweg 0 1 3 3. In-channel structure: ex. riffle-pool, step-pool, 0 1 2 3 ripple-pool sequence 4. Particle size of stream substrate 0 3 5. Active/relict floodplain 0 1 2 3 6. Depositional bars or benches 0 1 3 7. Recent alluvial deposits 0 8. Headcuts 0 1 3 9. Grade control 0 0.5 1.5

11. Second or greater order channel

a artificial ditches are not rated; see discussions in manual

B. Hydrology	(Subtotal = 1	. >)

10. Natural valley

17. Soil-based evidence of high water table?	No = 0		Yes =	3 >
16. Organic debris lines or piles	0	0.5	(1)	1.5
15. Sediment on plants or debris	0	(0.5)	1	1.5
14. Leaf litter	1.5		0.5	0
13. Iron oxidizing bacteria	0	11	(2)	3
12. Presence of Baseflow	0	1	(2)	3

0

0.5

 $N_0 = 0$

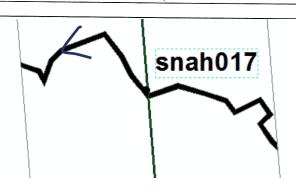
1.5

Yes = 3

C Biology (California IO 37)				
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	(1)	2	3
21. Aquatic Mollusks	0	(1)	2	3
22. Fish	(6)	0.5	1	1.5
23. Crayfish	0	0.5	(1)	1.5
24. Amphibians	0	0.5	71	1.5
25. Algae	0	0.5	715	1.5
26. Wetland plants in streambed			BL = 1.5 Other = 0	
				•

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

Notes:





Waterbody snah017 facing east upstream



Waterbody snah017 facing west downstream



Waterbody snah017 facing upline cross stream

USACE AID#	
USAUE AID#	

DWO#)WO#
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Site #____ (indicate on attached map)





Provide the following information for the stream reach u	inder assessment:
1. Applicant's name: Vominion	2. Evaluator's name. J. GAY
3. Date of evaluation: S August Zory	4. Time of evaluation: 1300
5. Name of stream: NNT TO Stony Creek	6 River basin:
7. Approximate drainage area: unknown	8 Stream order: \ 5t
9. Length of reach evaluated: 50	10. County: NAS+
11. Site coordinates (if known): prefer in decimal degrees	12 Subdivision name (if) n/2
Latitude (ex. 34.872312): 35°58'07.644	Longitude (ex =77.556611): 77.° <5° 16.46.7
on Sheet Ortho	d landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any):_Non €	
15. Recent weather conditions: LARGE RAIN EVEN	T in Pact bla 1.
16. Site conditions at time of visit: Normal	Nove'
	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	
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 Sail Sail Sail Sail Sail Sail Sail Sail
21 Parlings 1	" TES (NO)
	% Commercial% Industrial% Agricultural% Cleared / Logged% Other (
22 D 10 H 111	23. Bank height (from bed to top of bank): 3
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 econ characteristics identified in the worksheet. Scores should recharacteristic cannot be evaluated due to site or weather comment section. Where there are obvious changes in the chainto 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 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 paracter 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): Commen	nts:
Evaluator's Signature This channel evaluation form is intended to be used only a	Date 6 August 2019 us a guide to assist landowners and environmental professionals in
quality. The total score resulting from the completion of	Corps of Engineers to make a preliminary assessment of stream f 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.

SNAGOOS

1		CHARACTERISTICS	Coastal	Piedaonie	. Yournain.	- SCO)k
Total Person Tota		Presence of flow / persistent pools in stream				
Evidence of past human atteration 0		(no flow or saturation = 0; strong flow = max points)	0-5	1)4	0 5	4
Cextensive absertation = 0, no absertation = max points)		Evidence of past human alteration		†		
3 Ripartian zone		(extensive alteration = 0: no alteration = may points)	0-6	0 = 5	05	T.
Severe S		Ringrian zone				
Evidence of nutrient or chemical discharges 0.0000 0.0000 0.000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000		(no buffer = 0: remtiration with Later	0-6	1 1 4	n_k	I
Cextensive discharges = 0; not discharges = max points)		Fridence of exterior to the true				
Second		(ovtension Firstern C. W. Continue of the Cont	l n_s	i n	rı "t	
		(extensive discharges = 0; no discharges = max points)		ν – τ	U.— 1	
Second Comment Comment		Groundwater discharge	л э	, ,		-11
Second Common Com			l "-J	1) — 14	11-4	1.0
Second Comment Comment	, 6	Presence of adjacent floodplain				
Second Comment Comment		(no floodplain = 0; extensive floodplain = max points)	U-4	0-4	0-2	
Second Comment Comment		Entrenchment / floodplain access	**************************************			
Presence of adjacent wetlands = max points 0-6 0-4 0-2 /		(deeply entrenched = 0; frequent flooding = max points)	0 - 5	0-4	0-2	7
Chaunel sinuosity Chaunel sinuosity Chaunel sinuosity Chaunel sinuosity O = 5		Presence of adjacent wetlands		<u> </u>		
Chaunel sinuosity		(no wetlands = 0: large adjacent wetlands = may points)	0-6	04	0-2	ď
(extensive channelization = 0; natural meander = max points)		Channel sinuscity				1
10 Sediment input (extensive depositions 0; little or no sediment = max points) 0-5 0-4 0-4 Z		(extensive channelization = 0; natural manufactures)	0 5	1 1 4	7	3
Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)		Operation of trade the same in the politics)				.mari ¹¹
Size & diversity of channel bied substrate (fine, homogenous = 0; large, diverse sizes = max points)		(extensive dampsitions to link and the	05	n a	7	
12 Evidence of channel incision or widening 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 4 14 Root depth and density on banks 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 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 3 17 (little or no habitat = 0; frequent, varied habitats = max points) 0-6 0-6 0-6 4 18 Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points) 0-5 0-5 3 19 Substrate embeddediness (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 0-4 0-4 21 (no evidence = 0; common, numerous types = max points) 0-4 0-4 0-4 22 Presence of fish (no evidence = 0; common, numerous types = max points) 0-6 0-5 0-5 3 23 Evidence of wildlife use (no evidence = 0; common, numerous types = max points) 0-6 0-5 0-5 3 23 Total Points Possible 100		(extensive deposition—b; little of no segiment = max points)	-			dinne
12 Evidence of channel incision or widening (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 9 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 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 3 17 (little or no habitat = 0; frequent, varied habitats = max points) 0-6 0-6 0-6 9 18 Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points) 0-5 0-5 3 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 0-4 0-4 1 21 Presence of fish (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) 0-6 0-5 0-5 3 23 Total Points Possible 100 100 100 100		Size & diversity of channel bed substrate	X12.0			
12 Evidence of channel incision or widening 0-5 0-4 0-5 3 13 Presence of major bank failures (severe erosion = 0; no crosion, stable banks = max points) 0-5 0-5 0-5 9 14 Root depth and density on banks 0-3 0-4 0-5 3 15 Root depth and density on banks 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 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 3 17 (little or no habitat = 0; frequent, varied habitats = max points) 0-6 0-6 0-6 9 18 Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points) 0-5 0-5 3 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 1 21 Presence of sinhibians 0-4 0-4 0-4 2 22 Presence of sinhibians 0-4 0-4 0-4 2 23 Presence of sinhibians 0-6 0-6 0-5 0-5 3 Total Points Possible 100 100 100		(line, nomogenous = 0; large, diverse sizes = max points)	117	12-4	U-3	N#
(deeply incised = 0; stable bed & banks = max points)	12	Evidence of channel incision or widening				Minimulio Contraction Contract
13		(deeply incised = 0; stable bed & banks = max points)	V-3	0-4	9-5	1
15 Substantial impact = 0; no evidence = max points 0-5 0-4 0-5 0		Presence of major bank failures				
15		(severe erosion = 0; no erosion, stable banks = max points).	0-5	0-5-1	0-5	4
15 Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points) 0-5 0-4 0-5 0		Root depth and density on banks				
15 Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points) 0-5 0-4 0-5 0		(no visible roots = 0: dense mots throughout a may points)	0-3	0-4	0-5	7,
16		Impact by periorityre liverteel, or timber and a				
16		fenherantial impact will no avidence and the production	05	() 2	n_*	A
17		Processor of them IV.			Y Y	<u> </u>
Habitat complexity Habitat Habitat complexity Habitat Habi		r researce of riffic-poor ripple-pool complexes	л э	n e	n e	###
Canopy coverage over streambed 0-6 0-5 0-5 0-5 0-5 0-5 0-5 0-5 0-5 0-5 0-5 0-6 0-6 0-6 0-6 0-6 0-6 0-6 0-6 0-6 0-6 0-6 0-6 0-6 0-6 0-6 0-5 0-6 0-5 0-5 0-6 0-5 0-5 0-5 0-6 0-5 0-5 0-5 0-5 0-6 0-5 0-5 0-5 0-6 0-5 0-5 0-5 0-5 0-6 0-5 0		the times ripples or pools = 0; well-developed = max points)		V-2	44 52	
18		Habitat complexity	rı z	gv - 2		, !
18		(little or no habitat = 0; frequent, varied habitats = max points)	n d	υ − υ	U—ti	7
19		Canopy coverage over streamhed				
19		(no shading vegetation = 0; continuous canopy = max points)	U == 3	05	II.—#	3
Comparison Com		Substrate embeddedness				
20		(deeply embedded = 0; loose structure = max)	NA*	0 = 4	7 - 4	h. a
21 Presence of amphibians 0-4 0-5 0-5 21 Presence of amphibians 0-4 0-4 0-4 22 Presence of fish 0-4 0-4 0-4 23 Evidence of wildlife use 0-6 0-5 0-5 24 Total Points Possible 100 100 100 25 Total Points Possible 100 100 100 26 Total Points Possible 100 100 100 27 Total Points Possible 100 100 100 28 Total Points Possible 100 100 100 20 Total Points Possible 100 100 100 20 Total Points Possible 100 100 100 21 Total Points Possible 100 100 100 22 Total Points Possible 100 100 100 23 Total Points Possible 100 100 100 24 Total Points Possible 100 100 25 Total Points Possible 100 100 26 Total Points Possible 100 100 27 Total Points Possible 100 100 27 Total Points Possible 100 100 28 Total Points Possible 100 100 29 Total Points Possible 100 100 20 Total Points Possible 100 2		Presence of stream invertebrates (see more 4)				· · · · · · · · · · · · · · · · · · ·
21 Presence of amphibians 0-4 0-4 0-4 22 Presence of fish (no evidence = 0; common, numerous types = max points) 0-4 0-4 0-4 23 Evidence of wildlife use (no evidence = 0; abundant evidence = max points) 0-6 0-5 0-5 3 Total Points Possible 100		(no evidence = 0; common numerous turns = may as into	0-4	0-5	0 5	1.
1		Presence of emphibles:				*
22 Presence of fish 0-4 0-4 2		(no evidence = 0: common animaria trans	04		7.4	1
22 (no evidence = 0; common, numerous types = max points)		y			7	,j'
23 Evidence of wildlife use 0 = 0; abundant evidence = max points) 0 = 6 0 = 5 0 = 5 Total Points Possible 100 100 100	72		ii4	ii a	n a	
23 (no evidence = 0; abundant evidence = max points)		tuo evidence – u, common, numerous types = max points)			V-4	4
Total Points Possible 100 100 100	23		n e	, <u>,</u> , , , ,		Ť.
		(no evidence = 0; abundant evidence = max points)	V == D	ע – ט	1,15	
		Total Patete Pareit.				
TOTAL SCORE .		rom rumis russible	100	- 100	100	

NC DWQ Stream Identification Form Version 4.11 SNAG 008 Date: Project/Site: SERP st 2014 Latitude: 35°58'03.694 Evaluator: WEST County: Longitude: 17 7°55 76.467 **Total Points:** Other UNT to Stony Creek Stream Determination (circle one) Ephemeral Intermittent Perennial Stream is at least intermittent 305 if ≥ 19 or perennial if ≥ 30* e.g. Quad Name: A. Geomorphology (Subtotal = 13.5 **Absent** Weak 1^a Continuity of channel bed and bank Moderate Strong 0 (2) 3 2. Sinuosity of channel along thalweg 0 1 3 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) 3 6. Depositional bars or benches 0 (J) 2 3 7. Recent alluvial deposits 0 71) 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 No € 0 Yes = 3^a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = 12. Presence of Baseflow 0 2 3 13. Iron oxidizing bacteria 0 1) 2 3 14. Leaf litter 1.5 7. 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?	No = 0 Yes = 3)		= 3)	
C. Biology (Subtotal = \(\frac{\gamma}{\gamma}\)	· · · · · · · · · · · · · · · · · · ·		103	, - 3)
18. Fibrous roots in streambed	3	ঠি	<u> </u>	
19. Rooted upland plants in streambed	3		1	0
20. Macrobenthos (note diversity and abundance)	0	<u> </u>	1	
21. Aquatic Mollusks		<u> </u>	2	3
22. Fish	0	1	2	3
23. Crayfish		0.5		1.5
24. Amphibians	0	(0.5)	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	0 1	0.5	1	1.5
		FACW = 0.75; C	DBL = 1.5 Other =	Ö
*perennial streams may also be identified using other method Notes:	s. See p. 35 of manua	l.		
110163.				

Sk snag008 snag008 snag008 snag008 snag007



snag008 facing upstream



snag008 facing downstream



snag008 side shot

NC Division of Water Quality –Methodology for Identification of Intermittent and Perennial Streams and Their Origins v. 4.11 のリールナー

Date: 8/5/14	Project/Site: 5	Err	SNAGC Latitude: 35°	58' 03 387
Evaluator: Di West	County: Nash Longitude 77055		045'04973	
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle one) Other Ephemeral Intermittent Perennial e.g. Quad Name:			
A. Geomorphology (Subtotal =)	Absent	Weak	Moderate	Strong
1 ^a Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	6	1		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	(6)	1	2	3
6. Depositional bars or benches		(1)	2	3
7. Recent alluvial deposits	0	*************************************	2	3
8. Headcuts	0		2	3
9. Grade control	0	(6.5)	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel		=(0)	Yes:	
artificial ditches are not rated; see discussions in manual			103	- 3
B. Hydrology (Subtotal = $\%.9$)				
12. Presence of Baseflow	0	1	(2)	3
13. Iron oxidizing bacteria	0	à +	2	
14. Leaf litter	1.5	7		3
15. Sediment on plants or debris	0	(0.5)	0.5	0
16. Organic debris lines or piles	0	0.5		1.5
17. Soil-based evidence of high water table?		= 0		1.5
C. Biology (Subtotal =)			163	(3)
18. Fibrous roots in streambed	3	2	4	
19. Rooted upland plants in streambed	3	2	1	0
20. Macrobenthos (note diversity and abundance)	0	6	2	0
21. Aquatic Mollusks	(6)	1		3
22. Fish		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 .	1.5
26. Wetland plants in streambed		FACW = 0.75; OBL	A	1.5
*perennial streams may also be identified using other method	ds See n 35 of manual	1 ACVV = 0.75, OBL	. – 1.5 Other = 0	
Notes:	us. dee p. 33 of mailual			
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USACE AID#	DWO #					
COTTOE THOM	DWU#		Site #	(indicate on a	ttachad	lana
	 	***************************************	D10 11	(marcare on a	macheu	map)

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1 Emiles	177
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8 (Sostientennos)	පෙන්ව ව



Provide the following information for the stream reach un	nder assessment:
1. Applicant's name: Downbook	2. Evaluator's name: DSB
3. Date of evaluation: 8-5-14	4. Time of evaluation: 1325
5. Name of stream: UNT to Story Creek	6. River basin: Tar
7. Approximate drainage area:	8. Stream order: 15th
9. Length of reach evaluated: 1001	10. County: Nosh
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
Latitude (ex. 34.872312): 35° 58' 03. 387"	Longitude (ex77.556611): 777°55'69,523
Method location determined (circle): GPS Topo Sheet Ortho 13. Location of reach under evaluation (note nearby roads and	(Aerial) Photo/GIS Other GIS Other
restreme at por seach of	SNHG008
14. Proposed channel work (if any):	
15. Recent weather conditions: Past 48 hvs.	
16. Site conditions at time of visit: Norman (
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive Waters Water 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% Agricultural
% 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%) Steen (>10%)
25. Channel sinuosity: Straight Occasional 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 chainto a forest), the stream may be divided into smaller reaches	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 fleet an overall assessment of the stream reach under evaluation. If a additions, enter 0 in the scoring box and provide an explanation in the taracter 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): 33 Commen	nts: Rated Int. on PWA Form
Evaluator's Signature This channel evaluation	Date_8/5/14
quality. The total score resulting from the completion of	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.

#	CHARACTERISTICS	ECOREGION POINT RANGE			CCORE
''		Coastal	Piedmont	Mountain	SCOR
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	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	1
3	Riparian zone (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	3
5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	1
6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	0
7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0-4	0-2	j
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	
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	1
13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	3
14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	ı
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	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	y
19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	2
20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	1
21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	1
22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	6
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	

^{*} These characteristics are not assessed in coastal streams.

snag008 int



snag008 int facing upstream



snag008 int facing downstream

snag008 int



snag008 int side shot

USACE AID#		
OSACE AID#_	DWC) #

Site #____ (indicate on attached map)





Provide the following information for the stream reach un	ider assessment:			
1. Applicant's name: Dominion	2. Evaluator's name: J. GAY			
3. Date of evaluation: 5 August 2014	4. Time of evaluation: 1245			
5. Name of stream: UNT TO Stony Creek 6. River basin: TAR 7. Approximate drainage area: 8. Stream order: 15th				
				. Length of reach evaluated: 50
1. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): n/a			
atitude (ex. 34.872312): 35° 58′ 02 991 "	Longitude (ex =77.556611): 77 58 /6.722"			
Method location determined (circle): GPS Topo Sheet Orthogonal State of the American Control of the American Control of the Control of the American Control of the Control	(Apriol) Photo/CIC Out Org			
4. Proposed channel work (if any):				
5. Recent weather conditions: LARGE RAIN EU	JENT in Oust 48 hours			
6. Site conditions at time of visit: NORMAL				
	Section 10Tidal WatersEssential Fisheries Habitat			
Trout WatersOutstanding Resource Waters	Nutrient Sensitive WatersWater Supply Watershed(I-IV)			
3. Is there a pond or lake located upstream of the evaluation r	point? YES NO If yes, estimate the water surface area:			
Does channel appear on USGS quad map? YES NO	20. Does channel appear on USDA Soil Survey? YES NO			
1. Estimated watershed land use: % Residential	% Commercial% Industrial% Agricultural			
% Forested	% Cleared / Logged % Other /			
Bankfull width:	% Cleared / Logged % Other (
Channel slope down center of stream:Flat (0 to 2%)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)			
. Channel sinuosity:StraightOccasional bends	Frequent meander Very sinuous Braided channel			
each characteristic within the range shown for the econaracteristics identified in the worksheet. Scores should reflaracteristic cannot be evaluated due to site or weather comment section. Where there are obvious changes in the characterist), the stream may be divided into smaller reaches to	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 elect 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			
tal Score (from reverse): 4 Commen	ts:			
aluator's Signature	Date & August Zana			
aluator's Signatureis channel evaluation form is intended to be used only as thering the data required by the United States Army Cality. The total score resulting from the completion of ticular mitigation ratio or requirement. Form subject to continuous control of the	orps of Engineers to make a prelim			

STREAM QUALITY ASSESSMENT WORKSHEET SILEGOO 7

#		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	4
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	1
	3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	3
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	3
SAL	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	3
PHYSICAL	6	Presence of adjacent floodplain (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	
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	
	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)	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	3
STABILITY	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	3
TAI	14	Root depth and density on banks (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	2
HABITAT	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	3
HA	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0 – 5	0-5	0-5	3.
1	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	NA
<u>اي</u>	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	1
BIOLUGY	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	1
BIC -	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	/
	23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	3
	100	Total Points Possible	100	100	100	
		TOTAL SCORE (also enter on fir	st page)			40

^{*} These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11 Date: Project/Site: SERD Evaluator: County: NASH **Total Points:** Stream Determination (circle one) Other UNT to Stony Creek Stream is at least intermittent if ≥ 19 or perennial if ≥ 30* Ephemeral Intermittent Perennial e.g. Quad Name: A. Geomorphology (Subtotal = **Absent** Weak Moderate Strong 1^a Continuity of channel bed and bank 0 3 2. Sinuosity of channel along thalweg 0 1 2 3 3. In-channel structure: ex. riffle-pool, step-pool, 0 (1) ripple-pool sequence 2 3 4. Particle size of stream substrate

Particle size of stream substrate	0	1	2	1
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	70	1	2	3
7. Recent alluvial deposits		1	2	3
8. Headcuts	0		2	3
9. Grade control	0	0.5	1 1	1.5
10. Natural valley	(0)	0.5	1	1.5
11. Second or greater order channel		0 = 0	Yes	
^a artificial ditches are not rated; see discussions in manual			162	- 3
B. Hydrology (Subtotal = 1/1)		the space of the state of the s		
12. Presence of Baseflow	0	1	2	
13. Iron oxidizing bacteria	0	1	parting.	3
14. Leaf litter	1.5	(1)	()2)	3
15. Sediment on plants or debris	0	0.5	0.5	0
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	<u>-</u> <u>-</u>	0.9	1 7/20	1.5
C. Biology (Subtotal = 35)		<u> </u>	Yes	= 3)
18. Fibrous roots in streambed	3	(3)		
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	1 3 1	<u> </u>	1	0
21. Aquatic Mollusks			2	3
22. Fish		0.5	2	3
23. Crayfish	(0)	0.5	1	1.5
24. Amphibians	 	0,5	<u> </u>	1.5
25. Algae		0.5	1	1.5
26. Wetland plants in streambed			DBL = 1.5 Other = 0	1.5
*perennial streams may also be identified using other methods	. See p. 35 of manua	1 ACVV - 0.75; C	70L - 1.5 Other = (<i>)</i>
Notes:	. occ p. oo or manua	11.		
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snag006	1			
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snag007 facing upstream



snag007 facing downstream



snag007 side shot

			~ PEDCO 0
USACE AID#			
OBACL AID#	DWO#	Sita #	Chadlester a street to a
	- · · · · · · · · · · · · · · · · · · ·	Site #	(indicate on attached map)
			· · · · · · · · · · · · · · · · · · ·



Provide the following information for the stream reach un	nder assessment:
1. Applicant's name: Dominion	2. Evaluator's name: J. GA/
3. Date of evaluation: S August Zul4	4. Time of evaluation: 1400
5. Name of stream: UN TO Stony Creek	
7. Approximate drainage area: unknown	8. Stream order:
9. Length of reach evaluated: 50	10. County: \
11. Site coordinates (if known): prefer in decimal degrees.	
Latitude (ex. 34.872312): 35° 58' 01. 439"	
Method location determined (circle): GPS Topo Sheet Ortho	(Aerial) Photo/GIS Other GIS Otherd landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any):	
15. Recent weather conditions: LARGE RAIN E	UPNT in PAST 48 hours
16. Site conditions at time of visit:	1,000 9,000
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	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 % A conjusting 1
40 _% Forested	% Commercial% Industrial% Agricultural% Cleared / Logged% Other (
22. Bankfull width: 10	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 meander Very sinuous Braided 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 chinto 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 notitions, 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 the between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 67 Commen	nts:
Evaluator's Signature This channel evaluation for 5 is first than he are the second to the second t	Date_ 5 Avgust 2014 as a guide to assist landowners and environmental professionals in
quality. The total score resulting from the completion of	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.

#	CHARACTERISTICS		4(0)&E40)I§	inite a state in the state in t	
		Coastal	Piedmont	Mountain	SCORE
	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)	0-5	0 – 4	0-5	
[72]	Evidence of past human alteration (extensive alteration = 0; no alteration = max points) Riparian zone	0-6	0 – 5	0-5	-4
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	G-4	5
PHYSICAL 2 6 2	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0 4	0-4	
	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0 – 4	0-2	
量_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	
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 = 2	4
11	Size & diversity of channel hed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0 4	0-5	//-
	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0 = 5	0-4	0-5	4
	Presence of major bank failures (severe crosion = 0; no crosion, stable banks = max points)	0-5	0-5	0-5	
ALITHER 13 14 14	Root depth and density on banks (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	á
16 	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0 – 3	0-5	0-6	4
17 17 18 18	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0 – 6	0-6	0-6	1
	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	05	4
10)	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0 - 4	N#
20 E	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	1.
21 22 22 22 22 22 22 22 22 22 22 22 22 2	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	,
Ō 22 ဩ	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	0-3	0-5	5
	Total Points Possible	1.00	100	100	
	TOTAL SCORE (also enter on fin	હાં (ગાલું)			47

^{*} 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: 5 August 2014	Project/Site: SERF		Latitude: 35°58 01.439"			
Evaluator: DDWE57	County: NASH		Longitude: 77955 19.922" Other UNT to Stony Cree			
Total Points:	Stream Determination (circle one)					
Stream is at least intermittent if ≥ 19 or perennial if $\geq 30^*$	Ephemeral Inter	mittent Perennial	i	e.g. Quad Name;		
		The second secon				
A. Geomorphology (Subtotal = / 6.5)	Absent	Weak	Moderate	Strong		
1 ^{a.} Continuity of channel bed and bank	0	1	(2)	3		
2. Sinuosity of channel along thalweg	0	1	2)	3		
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	<u></u>	3		
Particle size of stream substrate						
5. Active/relict floodplain	0	<u> </u>	2	3		
5. Depositional bars or benches	0	1	<u></u>	3		
7. Recent alluvial deposits		1	2	3		
B. Headcuts		1	2	3		
9. Grade control	0		2	3		
0. Natural valley	0	(0.5)	1	1.5		
	<u>(6)</u>	0.5	1	1.5		
Second or greater order channel Artificial ditches are not retailed.	No	=0	Yes =	3		
artificial ditches are not rated; see discussions in manual						
3. Hydrology (Subtotal = 11.5)						
2. Presence of Baseflow	0	1	2	3		
3. Iron oxidizing bacteria	0	1	2	3		
4. Leaf litter	1.5	a	0.5	0		
5. Sediment on plants or debris	0	0.5	1`	1.5		
6. Organic debris lines or piles	0	0.5	(1)	1.5		
7. Soil-based evidence of high water table?	No	= 0	Yes =			
C. Biology_(Subtotal = <u>♀</u> (♣)						
8. Fibrous roots in streambed	3	2	1	0		
9. Rooted upland plants in streambed	(3)	2	1	0		
Macrobenthos (note diversity and abundance)	0		2	3		
1. Aquatic Mollusks	(0)	1	2	3		
2. Fish	0	(Q)s	1	1.5		
3. Crayfish	0	0.6	1	1.5		
4 A 1:11:	0	0.5	1			
4. Amphibians			····	1.5		
4. Amphibians 5. Algae	0	0.5	1	1 -		
	0	0.\$ FACW = 0.75; OBL	1	1.5		



snag006 facing upstream



snag006 facing downstream



snag006 side shot

DWQ#_

Site #_

__ (indicate on attached map)

H-H



Provide the following information for the stream reach un	nder gssessment
1. Applicant's name: Dominion	
3. Date of evaluation: 5 August 2014	4. Time of evaluation: /(200)
5. Name of stream: v NT to Stony Creek	6. River basin: Tar River Busin
7. Approximate drainage area:	8. Stream order: 15
9. Length of reach evaluated: 100 Feet	10. County: Nast
11. Site coordinates (if known): prefer in decimal degrees	12 Subdivision was 70
Latitude (ex. 34.872312): 35° 57′ 52 .546"	Longitude (ex. 77 556611): 77° 55° 47 4 98°
Method location determined (circle): GPS Topo Sheet Ortho	(Aerial) Photo/GIS Other GIS Otherd landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): None	
15. Recent weather conditions: Lacae Base Exerts	Click I wheel considers
15. Recent weather conditions: Large Rain Events 16. Site conditions at time of visit: Normal	12 hours earner
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Section 10 I idal Waters Essential Fisheries Habitat Nutrient Sensitive Waters Water 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:(I-IV)
19. Does channel appear on USGS quad man? YES (NO)	20. Does channel appear on USDA Soil Survey? YES (NO)
21. Estimated watershed land use: % Residential	% Commercial% Industrial% Agricultural
% Forested	% Commercial% Industrial% Agricultural
22. Bankfull width: 4 feet	% 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	
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the econ 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 chainto a forest), the stream may be divided into smaller reachest.	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 a between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 82 Commen	its: Braided Conveyances form
Evaluator's Signature ////25	Date SAugust 2014 s a guide to assist landowners and environmental professionals in
This channel evaluation form is intended to be used only a	s a guide to assist landowners and environmental professionals in
quality. The total score resulting from the completion of	Corps of Engineers to make a preliminary assessment of stream f 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.

SNAG 005 STREAM QUALITY ASSESSMENT WORKSHEET

7	#	CHARACTERISTICS	ECORE	GION POIN	TDANCE	
			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	4
	2	(extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	4
	3	Riparian zone (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	4
PHYSICAL	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points) Presence of adjacent floodplain	0-3	0-4	0-4	3
HYS	6	(no floodplain = 0; extensive floodplain = max points) Entrenchment / floodplain access	0-4	0-4	0-2	4
P	N (S)	(deeply entrenched = 0; frequent flooding = max points) Presence of adjacent wetlands	0-5	0-4	0-2	5
	9	(no wetlands = 0; large adjacent wetlands = max points) Channel sinuosity	0-6	0-4	0-2	6
	10	(extensive channelization = 0; natural meander = max points) Sediment input	0-5	0-4	0-3	5
	11	(extensive deposition= 0; little or no sediment = max points) Size & diversity of channel bed substrate	0-5	0-4	0-4	4
	12	(fine, homogenous = 0; large, diverse sizes = max points) Evidence of channel incision or widening	NA*	0-4	0-5	NA
ITY	13	(deeply incised = 0; stable bed & banks = max points) Presence of major bank failures	0-5	0-4	0-5	5
STABILITY	10000	(severe erosion = 0; no erosion, stable banks = max points) Root depth and density on banks	0-5	0-5	0-5	5
STA	14	(no visible roots = 0; dense roots throughout = max points) Impact by agriculture, livestock, or timber production	0-3	0-4	0-5	2
	15	(substantial impact =0; no evidence = max points) Presence of riffle-pool/ripple-pool complexes	0-5	0-4	0-5	5
AT	16	(no riffles/ripples or pools = 0; well-developed = max points) Habitat complexity	0-3	0-5	0-6	2
HABITAT	17	(little or no habitat = 0; frequent, varied habitats = max points) Canopy coverage over streambed	0-6	0-6	0-6	4
HA	18	(no shading vegetation = 0; continuous canopy = max points) Substrate embeddedness	0-5	0-5	0-5	5
	19	(deeply embedded = 0; loose structure = max) Presence of stream invertebrates (see page 4)	NA*	0-4	0-4	NA
GY	20	(no evidence = 0; common, numerous types = max points) Presence of amphibians	0-4	0-5	0-5	2
BIOLOGY	21	(no evidence = 0; common, numerous types = max points) Presence of fish	0-4	0-4	0-4	Z
BIC	22	(no evidence = 0; common, numerous types = max points) Evidence of wildlife use	0-4	0-4	0-4	0
	23	(no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	5
		Total Points Possible	100	100	100	
le ro-	22.15	TOTAL SCORE (also enter on firs	t page)			82
* Th	iese ch	aracteristics are not assessed in coastal streams.				0 —

Date: 5 August 2014	Project/Site: S	EZP	Snag 005 Latitude: 36°57′52.8°		
Evaluator: DD WEST	County: NAS H Longitud		Longitude: ⊋	ide: 77°55′ 47. 48	
Total Points: Stream is at least intermittent if \geq 19 or perennial if \geq 30*	Stream Determi	nation (circle one) rmittent Perennial		o Stony Cree	
A. Geomorphology (Subtotal = 12 5)	Absent	Weak	Madaut		
1 ^{a.} Continuity of channel bed and bank	0 O	- I STEEL STEEL STEEL	Moderate	Strong	
Sinuosity of channel along thalweg	0	1	(2)	3	
3. In-channel structure: ex. riffle-pool, step-pool			3	3	
ripple-pool sequence	0	()	2	3	
Particle size of stream substrate	0	1	(P)		
Active/relict floodplain	0	1	2	3	
6. Depositional bars or benches	0				
7. Recent alluvial deposits	6	1	2	3	
8. Headcuts	0	0	2	3	
9. Grade control	0	0.5	7	3	
10. Natural valley	0	0.5		1,5	
Second or greater order channel artificial ditches are not rated; see discussions in manual	No		1 Yes =	1.5	
B. Hydrology (Subtotal = 9.5) 12. Presence of Baseflow 13. Iron oxidizing bacteria	0	1	2	(3)	
14. Leaf litter	0	(1)	2	3	
15. Sediment on plants or debris	1.5	1	0.5	0	
16. Organic debris lines or piles	0	0.5	(1)	1.5	
17. Soil-based evidence of high water table?	0	0.5	0	1.5	
C. Biology (Subtotal =)	No :	= 0	Yes =	3	
18. Fibrous roots in streambed					
19. Rooted upland plants in streambed	3)	2	1	0	
20. Macroboothoo (note the control of the control o	(3)	2,	1	0	
Macrobenthos (note diversity and abundance) Aquatic Mollusks	0	a	2	3	
22. Fish	(0)	1	2	3	
	(0)	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	1	1.5	
26. Wetland plants in streambed		FACW = 0.75; OBL =) 1.5	
*perennial streams may also be identified using other methods Notes:	s. See p. 35 of manual.	8	no other - o		
	snag005				



snag005 facing upstream



snag005 facing downstream



snag005 side shot

SNAGOD

			014 4010 11
USACE AID#	D1110 //		to be decimally the company of the c
CONCL AID#	DWO#	Site #	(indicate on attached map)
		DIC II	(mulcate on attached map)

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1	Ľ	•		2	١,	•	1



	200 200 MENT WORKSHEET
Provide the following information for the stream reach un	der assessment:
1. Applicant's name: Dominion	2. Evaluator's name: DUEST
3. Date of evaluation:	4. Time of evaluation:
5. Name of stream: unnamed trib to stone	Pro-River basin: TAR-PHMLICO
7. Approximate drainage area: 750 acros	8. Stream order:
9. Length of reach evaluated: 100fd	10. County: NASH
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): Na
Latitude (ex. 34.872312): 35 67 36.446"	Longitude (ex77.556611): 77° 56′ 25.733"
Method location determined (circle): GPS Topo Sheet Ortho	(Acrial) 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):	
	Showers
16. Site conditions at time of visit:	3000040
	Section 10 A Cidal Waters A Essential Fisheries Habitat
WATrout Waters i Manufactuning Resource Waters	Section 10 A Lidal Waters Bessential Fisheries Habitat Mutrient Sensitive Waters Water Supply Watershed A (1-IV)
18. Is there a pond or lake located upstream of the evaluation p	water Supply Watershed (I-IV)
19. Does channel appear on USGS quad man? VES NO	20. Does channel appear on USDA Soil Survey? YES
	% Commercial% Industrial% Agricultural
	% Cleared / Logged % Other (
22. Bankfull width:	
	23. Bank height (from bed to top of bank):
25. Channel sinuosity: Straight Occasional bends	
Instructions for completion of worksheet (located on page	e 2): Begin by determining the most appropriate ecoregion based on
rocation, 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 econ	region. Page 3 provides a brief description of how to review the
characteristic cannot be evaluated due to site or weather con	flect an overall assessment of the stream reach under evaluation. If a iditions, enter 0 in the scoring box and provide an explanation in the
comment section. Where there are obvious changes in the ch	aracter 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
highest quality.	be between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse):	nts:
- All	
Evaluator's Signature This channel evaluation form is intended to be used only a	Date 8-5-(4
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
quanty. The total score resulting from the completion of	I this form is subject to USACE approval and does not imply a
Particular minigation ratio or requirement. Form subject to	change – version 06/03. To Comment, please call 919-876-8441 x 26.

#	CHARACTERISTICS	- Cossist :	HONTPOIN Piedmont		scor
	Presence of flow / persistent pools in stream			Mountain	
1	(no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	13
1	Evidence of past human alteration		0 5		
	(extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	2
	Riparian zone	0-6	0_4		一 一
	(no buffer = 0; contiguous, wide buffer = max points)	U-U	U-4	0-5	4
	Evidence of nutrient or chemical discharges	0-5	r) 4	0-4	
	(extensive discharges = 0; no discharges = max points)		Y - 7	V-4	نے ا
	Groundwater discharge	03	0-4	0.4	1 1
	(no discharge = 0; springs, seeps, wetlands, etc. = max points) Presence of adjacent floodplain			· · · · · · · · · · · · · · · · · · ·	- 1
	(no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	72
	Entrenchment / floodplain access				_ F
7	(deeply entrenched = 0; frequent flooding - max points)	0-5	04	0-2	7
	Presence of adjacent wetlands				
8.	(no wetlands = 0, large adjacent wetlands = max points)	0-6	0-4	0-2	-2
- 4	Channel sinuosity				h
	(extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	Ľ
	Sediment input				-7.
	(extensive deposition= 0; little or no sediment = max points)	05	0-4	() 4	سننظ
	Size & diversity of channel bed substrate	N/A*	0-4	Ŋ _ 5	1. Tha
	(fine, homogenous = 0; large, diverse sizes = max points)		v—4	9-3	ME
12	Evidence of channel incision or widening	0-5	0-4	0-5	الما
	(deeply incised = 0; stable bed & banks = max points)			2 - 2	
	Presence of major bank failures (severe crosion = 0; no crosion, stable banks = max points)	0-5	0-5	0-5	2
	Root depth and density on banks				<u> </u>
14	(no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	2
	Impact by agriculture, livestock, or timber production				<u> </u>
15	(substantial impact =0; no evidence = max points)	0-5	0-4	0-5	1
	Presence of riffle-pool/ripple-pool complexes				
	(no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	Ĺ
17	Habitat complexity				
	(little or no habitat = 0; frequent, varied habitats = max points)	D=6	0-6	0.6	. 1
11	Canopy coverage over streambed				
	(no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	
	Substrate embeddedness	NA*	0-4	(i)—a)	<i>፤ ነገ</i> ላ
	(deeply embedded = 0, loose structure = max)		7.7	-4	NP
70	Presence of stream invertebrates (see page 4)	0-4	0-5	05	D
	(no evidence = 0; common, numerous types = max points) Presence of amphibians				<u> </u>
	(no evidence = 0; common, numerous types = max points)	0 4	0-4	0-4	مسئ
	Presence of fish				#*************************************
22	(no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	O
	Evidence of wildlife use				
	(no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	
	Total Points Possible	1(0)0	TO THE	· · · · · · · · · · · · · · · · · · ·	
	TOTAL SCORE. (also enter on fin				ا ترمی

^{*} These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11 5NA0 011 Date: 🚧 Project/Site: Latitude: 35°57 ' 30, 440" **Evaluator:** Longitude: 77° 46 ' 25.733 County: 人了 **Total Points:** Other UNT to Stony Creek Stream Determination (circle-one) Stream is at least intermittent Ephemeral Intermittent Gerennial if ≥ 19 or perennial if ≥ 30* e.g. Quad Name: A. Geomorphology (Subtotal = **Absent** Weak Moderate Strong 1^a Continuity of channel bed and bank 0 (2)3 2. Sinuosity of channel along thalweg 0 1 2 3 3. In-channel structure: ex. riffle-pool, step-pool, 0 2 ripple-pool sequence 3 4. Particle size of stream substrate 0 3 5. Active/relict floodplain 0 2 3 6. Depositional bars or benches 0 1 3 7. Recent alluvial deposits 0 3 8. Headcuts 0 3 9. Grade control 0 1.5 10. Natural valley 0 0.5 1.5 11. Second or greater order channel .No = Ø Yes = 3^a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = 12. Presence of Baseflow 1 3 13. Iron oxidizing bacteria 0 2 3 14. Leaf litter 1 1.5 0 15. Sediment on plants or debris 0 (0:5) 1.5 16. Organic debris lines or piles 0 0.5 1 1.5 17. Soil-based evidence of high water table? No = 0Yes = 3 C. Biology (Subtotal = 18. Fibrous roots in streambed 2 0 19. Rooted upland plants in streambed **(3**) 0 20. Macrobenthos (note diversity and abundance) 1) 2 3 21. Aquatic Mollusks 2 3 22. Fish 0 0.5 1.5 23. Crayfish 0 0.5 1.5 24. Amphibians 0 0.5 1.5 25. Algae 1.5 1) 26. Wetland plants in streambed #ACW = 0.75;)OBL = 1.5 Other = 0 *perennial streams may also be identified using other methods. See p. 35 of manual. snag011



snag011 facing upstream



snag011 facing downstream



snag011 side shot

5NAG 009

USACE AID#	DWQ #	Site #	(indicate on attached map)





Provide the following information for the stream reach und	er assessment:
1. Applicant's name: Dominion	2. Evaluator's name: V.GAY
3. Date of evaluation: 5 Aug. 57 2014	4. Time of evaluation: 1745
5. Name of stream: UNT to Stony Creek NY Creek	6. River basin:
7. Approximate drainage area:	8. Stream order:
9. Length of reach evaluated: 50	10. County: NAS H
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):n/a
Latitude (ex. 34.872312): 35°50′ 30. 546 1′	Longitude (ex77.556611): 77° 56′ 72.098″
Method location determined (circle): GPS Topo Sheet Ortho (A 13. Location of reach under evaluation (note nearby roads and l	Aerial) Photo/GIS Other GIS Other
14. Proposed channel work (if any):none	
15. Recent weather conditions: HEANY RAIN	in Past 48 hours
16. Site conditions at time of visit: NORMAL	
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	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
	% Commercial% Industrial Agricultural
	% 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: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 con comment section. Where there are obvious changes in the chainto a forest), the stream may be divided into smaller reaches the 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 elect 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): Commen	its:
Evaluator's Signature	Date 5 August 2014
This channel evaluation form is intended to be used only a 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
	f 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.

		- Dictorage	HONTHOTIN	i Range	
	CHARACTERISTICS	Coastal	Piedmont	- Vointain	soota.
	Presence of flow / persistent pools in stream (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	
3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0 – 6	0 – 4	0 – 5	ja Ja
4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0 – 5	04	0.4	Ġ
₹ 5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	
PHYSICAL 6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	<u> </u>
# 7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0 4	0-2	4
3	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0:-4	0-2	Ġ
9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	05	0-4	0 - 3	4
	Sediment input (extensive deposition= 0; little or no sediment = max points)	0 – 5	0-4	()_3,	4
11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	
12 ح	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0 – 5	(0:-4).	0-5	
	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	
STABILITY The state of the sta	Root depth and density on banks (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	
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 17 18 18	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	
18	Canopy coverage over streambed (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	N ^A
-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 22 22 22 22 22 22 22 22 22 22 22 22 2	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	Z
	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	
23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0 5	0-5	
	Total Points Possible	100	100	100	
	TOTAL SCORE (also enter on f	តែ (១រដូម)			[5 ^t

^{*} 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: 5 August Zory	Project/Site: 5	ERP	Latitude: 35	°57' 30,546	
Evaluator: DWESI	County: NAS		Longitude: 179° 56' 77.0 One) Other UNT to Stony Creek		
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		nation (circle one) mittent Perennia			
A. Geomorphology (Subtotal = 18)	Absent	Weak	Moderate	Strong	
1 ^a 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	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	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	No	= 0	Yes	= 3	
artificial ditches are not rated; see discussions in manual	The state of the s				
B. Hydrology (Subtotal = $\frac{9.5}{}$)					
12. Presence of Baseflow	0	1	2	3	
13. Iron oxidizing bacteria	0	A)	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	0.5	<u> </u>	1.5	
17. Soil-based evidence of high water table?		= 0	(Yes	The state of the s	
C. Biology (Subtotal =	140		103	- J	
18. Fibrous roots in streambed	(3)	2	1	T 0	
19. Rooted upland plants in streambed	3	2	1		
		2	1	0	
20. Macrobenthos (note diversity and abundance)	0	1	<u>(2)</u> (2)	3	
21. Aquatic Mollusks	0	1		3	
22. Fish	0	0.5		1.5	
23. Crayfish	0	0.5	1	1.5	
24. Amphibians	0	0.5		1.5	
25. Algae	0	(0.5)	1	1.5	
26. Wetland plants in streambed			BL = 1.5 Other = 1	0	
*perennial streams may also be identified using other meth	nods. See p. 35 of manual		<u> </u>		
Notes:	NIIII	/ \ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
	snag011		>		
	nag003f snag009				
		/			



snag009 facing upstream



snag009 facing downstream



snag009 side shot

USACE AID#	DWQ #	Site #	(indicate on attached map)
			- · · · · · · · · · · · · · · · · · · ·





Provide the following information for the stream reach und	ler assessment:
1. Applicant's name: <u>Dominior</u>	2. Evaluator's name: SAY
3. Date of evaluation: 5 August 2014	4. Time of evaluation: 1700
5. Name of stream: UNT P STONY Creek	6. River basin:
7. Approximate drainage area: unknown	8. Stream order:
9. Length of reach evaluated: 100	10. County: NAS H
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
Latitude (ex. 34.872312): 35° 57' 76 · 758"	Longitude (ex77.556611): 177° 56' 28. 398"
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): none	
15. Recent weather conditions: HEAVY RAIN IN	PAST 48 HOURT
16. Site conditions at time of visit: NORMAL	
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 p	
	20. Does channel appear on USDA Soil Survey? YES (NO)
	% Commercial% Industrial% Agricultural
% Forested	% Cleared / Logged % Other (
22. Bankfull width: 5	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%)
	Frequent meanderVery sinuousBraided channel
Instructions for completion of worksheet (located on page 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 chainto a forest), the stream may be divided into smaller reaches to	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 elect 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): Commen	ts:
71/	
Evaluator's Signature	Date 5 August Zaly
This channel evaluation form is intended to be used only a	is a guide to assist landowners and environmental professionals in
gathering the data required by the United States Army quality. The total score resulting from the completion o	Corps of Engineers to make a preliminary assessment of stream f 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.

Ħ	CHARACTERISTICS	B(0(0)R40(c 	T() \ P(0) L\cdot\cdot\cdot\cdot\cdot\cdot\cdot\cdot	Lik4MGS. Vionnein	- 361
	Presence of flow / persistent pools in stream				
I	(no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	4.
2	Evidence of past human alteration				
4	(extensive alteration = 0; no alteration = max points)	Ú == 6	0-5	0-5	Ó
3	Riparian zone	0-6	<i>j</i> y. 1		6
	(no buffer = 0; contiguous, wide buffer = max points)	U-6	04	0-5	l tj
4	Evidence of nutrient or chemical discharges	0-5	0-4	() sa e §	,j
	(extensive discharges = 0; no discharges = max points)	y	ν-4	9-17	4
	Groundwater discharge	D3	0.4	0-4	j
	(no discharge = 0; springs, seeps, wetlands, etc. = max points)				
	Presence of adjacent floodplain	0-4	0-4	0-2	4
	(no floodplain = 0; extensive floodplain = max points) Entrenchment / floodplain access				
	(deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	
	Presence of adjacent wetlands				
Ä.	(no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	G
9	Channel sinuosity				
	(extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	3
m	Sediment input	A 2			I
	(extensive deposition= 0; little or no sediment = max points)	0-5	04	0-4	4
	Size & diversity of channel bed substrate	NA*	D = d	0-5	· /7
	(fine, homogenous = 0; large, diverse sizes = max points)	2,2752		v−u	rJ4
	Evidence of channel incision or widening	05	0.23	05	4
	(deeply incised = 0; stable bed & banks = max points)				*4
	Presence of major bank failures	05	0-5	0-5	
	(severe erosion = 0; no erosion, stable banks = max points) Root depth and density on banks				
	(no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	4
	Impact by agriculture, livestock, or timber production				
15	(substantial impact =0; no evidence = max points)	0-5	0-4	0-5	5
	Presence of riffle-pool/ripple-pool complexes				
16	(no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	<u> </u>
17	Habitat complexity				
	(little or no habitat = 0; frequent, varied habitats = max points)	0-6	9-6	0-6	1
13	Canopy coverage over streambed	0-5	0-5	()5	
	(no shading vegetation = 0; continuous canopy = max points)	v - 3	u3	V 3	5
	Substrate embeddedness	NA*	0-4	0-4	· L
	(deeply embedded = 0; loose structure = max)		ν .	2 3	
20	Presence of stream invertebrates (see page 4)	04	0-5	0-5	
	(no evidence = 0; common, numerous types = max points) Presence of amphibians				
L	(no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	ļ
	Presence of fish				#
22	(no evidence = 0; common, numerous types = max points)	04	0-4	0-4	O
	Evidence of wildlife use				
23	(no evidence = 0; abundant evidence = max points)	0-6	0 - 5	0-5	4
	Total Points Possible	100	100	100	
					aj

^{*} 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: 5 August 2014	Project/Site: S	ERP	Latitude: 350	Latitude: 35°57′26. 758″ Longitude: 77°56′28.398″ Other UNT to Stony Creek e.g. Quad Name:		
Evaluator: DD WEST	County:	1	Longitude: 7			
Total Points: Stream is at least intermittent if ≥ 19 or perennial if $\geq 30^*$	Stream Determin	nation (circle one rmittent Perennia	Other UNT t			
A. Geomorphology (Subtotal = 12.5)	Absent	Weak	Moderate	Strong		
1 ^{a.} 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	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)	(3)	2	3		
7. Recent alluvial deposits	0	<u></u>	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		= 0	Yes:	L		
^a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal =						
12. Presence of Baseflow	0	1	(2)	3		
13. Iron oxidizing bacteria	0	<u>.</u>	2:			
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			
17. Soil-based evidence of high water table?		= 0	Yes	1.5 - ਕੇ		
C. Biology (Subtotal = 8,5)			103			
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	0		
21. Aquatic Mollusks		1	2	3		
22. Fish	0	0.5	1	3		
23. Crayfish	0	0.5	~	1.5		
24. Amphibians	0		1	1.5		
25. Algae		0.5	1	1.5		
26. Wetland plants in streambed			DBL = 1.5 Other = 0	1.5		
*perennial streams may also be identified using other methods	Soop 35 of manual	FACW - 0.75, C	DBL = 1.5 Other = 0	~~~~		
Notes:	s. See p. 55 of manual.					



snag010 facing upstream



snag010 facing downstream



snag010 side shot