e		<	sw10015
USACE AID#	DWQ #	Site #	(indicate on attached map)
		SESSMENT WORKSH	EET
Provide the following information  1. Applicant's name: Domini		2. Evaluator's name: KMU(	Phrey (ESI)
3. Date of evaluation: 7/28/		4. Time of evaluation: 9:00A	
		6. River basin: Newsc	<u> </u>
5. Name of stream: <u>UNT +0 JO</u> (ISIOOMEY977. Approximate drainage area:	Swamp) () ACKES	8. Stream order:	<del> </del>
9. Length of reach evaluated: 50	) <del>{</del> {	10. County: WISUA	
11. Site coordinates (if known):		12. Subdivision name (if any): $\Lambda$	I A
Latitude (ex. 34.872312): 35.77	9 70	Longitude (ex. $-77.556611$ ): $-78$	(,05507
Method location determined (circle): (13. Location of reach under evaluation)	GPS Topo Sheet Ortho (Aetion (note nearby roads and la	erial) Photo/GIS Other GIS Other_	g stream(s) location):
14. Proposed channel work (if any)			/
15. Recent weather conditions: R	ain within the	e Past 24 hours	>
16. Site conditions at time of visit:	undisturbed		
17. Identify any special waterway of Trout Waters Outstanding	classifications known:	lutrient Sensitive WatersWa	
18. Is there a pond or lake located to	apstream of the evaluation poi	nt? YES (NO) If yes, estimate th	e water surface area:
19. Does channel appear on USGS	quad map? YES (NO)	20. Does channel appear on USDA	
21. Estimated watershed land use:	1	% Commercial% Ind	dustrial 40% Agricultural
22. Bankfull width: 20 Pt.		% Cleared / Logged% Ot 23. Bank height (from bed to top of	of bank): 2.5 Pd.
24. Channel slope down center of s		,	te (4 to 10%)Steep (>10%)
25. Channel sinuosity:Straig	htOccasional bends	Frequent meanderVery	sinuousBraided channel
Instructions for completion of w location, terrain, vegetation, stream to each characteristic within the characteristics identified in the wo characteristic cannot be evaluated comment section. Where there are into a forest), the stream may be d	n classification, etc. Every che range shown for the ecore- orksheet. Scores should reflet due to site or weather conducted to by the charges in the charges in the charges.	naracteristic must be scored using to gion. Page 3 provides a brief of ect an overall assessment of the st itions, enter 0 in the scoring box factor of a stream under review (e.g.	the same ecoregion. Assign points description of how to review the ream reach under evaluation. If a and provide an explanation in the g., the stream flows from a pasture

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): 49	Comments:		
		· · · · · · · · · · · · · · · · · · ·	
Evaluator's Signature Klein Lee Hr	ne sh	Date 7/28/14	

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

		GHARACHERISUGS -	ECOREG Coastal	ION POINT	RANGE A	SCORE
130	1	Presence of flow / persistent pools in stream	0-5	0-4	0-5	3
4		(no flow or saturation = 0; strong flow = max points)				
	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	4
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0 – 5	0 – 4	0 – 4	3
V	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	\ .
SIC	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	1
PHYSICAL	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	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	2
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	* XX	0-4	0-5	
	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	2
LIT	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	2
ABI	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0 – 4	0-5	$\bigcirc$
STABILITY	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0 - 5	0-4	0-5	5
	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-5	0-6	\
TAT	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0 – 6	0-6	3
HABITAT	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0 – 5	0-5	0-5	5
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NATION OF THE PERSON OF THE PE	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	
OGY	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	
BIOLOGY	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0 – 4	0 – 4	0
B	23	Evidence of wildlife use  (no evidence = 0; abundant evidence = max points)	0-6	0-5	0 – 5	3
		Total Points Possible	100	- 4100	100	<b>建物港</b>
	Ç4	TOTAL SCORE (also enter on	irst page)			49

<sup>\*</sup> These characteristics are not assessed in coastal streams.

Swid015 Date: Project/Site: Longitude: -78, 05507 Evaluator: K, MURPHILEY-ESI County: Wilson Other Bancy **Total Points:** Stream Determination (circle one) Stream is at least intermittent if ≥ 19 or perennial if ≥ 30\* Ephemeral Intermittent Perennial e.g. Quad Name:

A. Geomorphology (Subtotal = $\Omega$ )	Absent	Weak	Moderate	Strong
1 <sup>a.</sup> Continuity of channel bed and bank	0	1	2	<b>3</b>
2. Sinuosity of channel along thalweg	0	1	(2)	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	Ð	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		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	<del>=</del> (0)	Yes	= 3

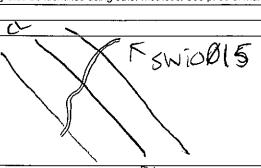
B. Hydrology (Subtotal = (Q)				
12. Presence of Baseflow	0	1 (	2	(3)
13. Iron oxidizing bacteria	0	0	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	. 0	0.5	1)	1.5
16. Organic debris lines or piles	0	0.5	(1)	1.5
17. Soil-based evidence of high water table?	N	lo = 0	Yes	€3)

C. Biology (Subtotal = <u>%、 25</u> )				
18. Fibrous roots in streambed	(3)	2	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	0	(1)	2	3
21. Aquatic Mollusks	(8)	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. See p. 35 of manual.

Notes:

Sketch:



OHWM! 8Ft WiGGh: 2084



Waterbody swio015 facing north upstream.



Waterbody swio015 facing south downstream.



Waterbody swio015 facing west across channel.

Swi0016

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

=
(C) (U)
12 41
111413
للتحا

### STREAM QUALITY ASSESSMENT WORKSHEET

Provide the following information for the stream reach under assessment:
1. Applicant's name: DOMINIZO  2. Evaluator's name: KIMUIPAIPY (EST)
3. Date of evaluation: 7/28/14  4. Time of evaluation: 10:30
5. Name of stream: UNT to Juniper Creek 6. River basin: Neusel
7. Approximate drainage area: 10 AC (4)
9. Length of reach evaluated: UDFE 10. County: WISO C
11. Site coordinates (if known): prefer in decimal degrees.
Latitude (ex. 34.872312); 35.77530 Longitude (ex77.556611); -78.05332
Method location determined (circle): GPS Topo Sheet Ortho (Aerial) Photo/GIS Other GIS Other
14. Proposed channel work (if any): TSD
15. Recent weather conditions: Rain within the POST 24 hours
16. Site conditions at time of visit: undisturbed
17. Identify any special waterway classifications known:Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource WatersNutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation point? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES NO 20. Does channel appear on USDA Soil Survey? YES NO
21. Estimated watershed land use: 60 % Residential% Commercial% Industrial 60 % Agricultural% Cleared / Logged% Other ()
22. Bankfull width: 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 bendsFrequent meanderVery sinuousBraided channel
Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality.
Total Score (from reverse): 37 Comments:
Evaluator's Signature <u>Hend Lunion</u> Date 7/28/14  This channel evaluation form is intended to be used only as a guide to assist landowners and environmental professionals in

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

7	u S.		ECOREGION POINT R		RANGE	
10	#.	CHARACTERISTICS		Piedmont	* Mountain	SCORE
11.	1	Presence of flow / persistent pools in stream	0-5	0 – 4	0-5	$\cap$
		(no flow or saturation = 0; strong flow = max points)				
	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	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	0
SIC	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	2
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0 – 4	0-2	C
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0 – 5	0 – 4	0-3	\
er vie	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0 – 4	0-4	7
· 神	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0 4	0-5	
<b>Y</b>	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	2
LIT	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0 – 5	0-5	0-5	<b>∠</b> .
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	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	l
TA1	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0 – 6	(
НАВІТАТ	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0 – 5	0-5	4
<b>T</b>	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	0
OGS	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0 – 4	0-4	0 – 4	O
BIOLOGY	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	0
143	23	Evidence of wildlife use (no evidence = 0: abundant evidence = max points)	0-6	0-5	0-5	4
是	調点す	Total Points Possible	100	100 \$	100 ·	
为 <b>办</b>	(19 <b>14)</b>	TV: Ne least the second (also enter on f	irst page) ar	THE PET		37

<sup>\*</sup> These characteristics are not assessed in coastal streams.

Date: 7/28/14	Project/Site: ACP	Latitude: 35,77530
Evaluator: K, MUVPG184 - ESI	County: WILSON	Longitude:-78,05332
Total Points: Stream is at least intermittent  20 if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle one) Ephemeral (Intermittent) Perennial	Other Boiley, NC e.g. Quad Name:

A. Geomorphology (Subtotal = $\frac{1}{5}$ )	Absent	Weak	Moderate	Strong
1ª. 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
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	<b>①</b> ·	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	N	0 = (0)	Yes	= 3

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

B. Hydrology (Subtotal =	В.	Hydrology	(Subtotal =	4.5
--------------------------	----	-----------	-------------	-----

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 = 0	Yes:	(3)

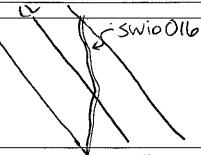
				<b>`</b>
C. Biology (Subtotal = 4 )			`	
18. Fibrous roots in streambed	3	2	(1)	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(0)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	(0)	0.5	1 1	1.5
24. Amphibians	(0)	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streamhed		FACW = 0.75: 0	)BI = 1.5 Other = 0	)

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

Notes:

Sketch:





OHWM: 4



Waterbody swio016 facing north upstream.



Waterbody swio016 facing south downstream.



Waterbody swio016 facing west across channel.

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





Provide the following information for the stream reach und	der assessment:
1. Applicant's name: Daninian	2. Evaluator's name: ESI_ JBenton
3. Date of evaluation: 7/1/14	4. Time of evaluation: 2:00
5. Name of stream: UNT to MillStone Creek	6. River basin: Neuse
7. Approximate drainage area:	8. Stream order:
9. Length of reach evaluated: 50 'f+	10. County: Wilson
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): N/A
Latitude (ex. 34.872312); 35.756087 N	Longitude (ex77.556611): 78.052730 W
	landmarks and attach map identifying stream(s) location):
Approximately 1,000 ft. South of USZ64	ralt within corridor
14. Proposed channel work (if any): TBD	
15. Recent weather conditions: no precipitation with	
16. Site conditions at time of visit: ditched channe	with offwm,
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 Oolf 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
₹0_% Forested	% Cleared / Logged% Other ()
22. Bankfull width:	23. Bank height (from bed to top of bank):   F+.
24. Channel slope down center of stream: _XFlat (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 co comment 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 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 ge between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 39 Commo	ents: Swio001 tract 19-011, 50 ft. reach  - ohw width, Sand, silt substrate, no flow
Evaluator's Signature Supplies	Date7/1/14
	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.

	<b>分</b>	A CONTRACTOR OF THE CONTRACTOR	ECOREG			CODE
	<b>冷雄。</b>	Handle and the resident providing the Company of State of the Company of the state	Coastal	Piedmont	Mountain	SCURE
	1	Presence of flow / persistent pools in stream	0-5	0-4	0 – 5	0
		(no flow or saturation = 0; strong flow = max points)				
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0 6	0 - 5	0 – 5	2
	3	Riparian zone	0-6	0-4	0-5	3
	4	(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	(-)-
AL	5	Groundwater discharge  (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	0
SIC	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0 – 4	0-4	0-2	2
PHYSICAL	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
TO STATE OF	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0 5	0 – 4	0-3	Ζ.
New .	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)	Z NA*	0 – 4	0 – 5	MA
K	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0 – 5	0 – 4	0-5	3
H	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
- G	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	1
ITA	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0 – 6	0-6	} '
HABITAT	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0 – 5	0 – 5	0-5	4
100	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0 – 4	0 – 4	NA
BIOLOGY	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 5	0-5	0
OG	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0 – 4	0
ĭOĭ	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
	23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	
		Total Points Possible	100	1005	100	
		TOTAL SCORE (also enter on a	irst page)			39

<sup>\*</sup> These characteristics are not assessed in coastal streams.

Date: 7/1/14	Project/Site:	4CP	Latitude: 35	.756087 N
Evaluator: ESI - KMarkham	County: Wilso	?n	Longitude: 78	.052730W
Total Points: Stream is at least intermittent $21, 5$ if $\geq 19$ or perennial if $\geq 30^*$		nation (circle one) rmittent Perennial	Other e.g. Quad Name:	Bailey
A. Geomorphology (Subtotal = 1 )	Absent	Weak	Moderate	Strong
1 <sup>a.</sup> Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	O	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	<b>①</b>	2	3
Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	0	0	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	0	1 -	(2)	3
8. Headcuts		1	2	3
9. Grade control	0	0.5	$\Omega$	1.5
10. Natural valley	0	0.5	(1)	1.5
11. Second or greater order channel	(1)	o = 0	Yes Yes	= 3
a artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = 5,5)				
		1	2	2
12. Presence of Baseflow	<u> </u>	1		3
13. Iron oxidizing bacteria	(0)	1	2	3
14. Leaf litter	1.5	<u>0</u>	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?  C. Biology (Subtotal = 5 )	I N	lo = 0	Yes	= 3
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 1	2	3
21. Aquatic Mollusks		1	2	3
22. Fish		0.5	1	1.5
23. Crayfish	<b>Q</b>	0.5	1	1.5
24. Amphibians	0	0.5	<u>.</u>	1.5
25. Algae	(0)	0.5	1	1.5
26. Wetland plants in streambed	<u> </u>	<u> </u>	BL = 1.5 (Other =	<u> </u>
*perennial streams may also be identified using other met	hods See n 35 of man		DL 1.0 (Othor	
Notes: SW1000   tract 19-01			bw, Ift b	h 2 GL Ohw
Sand, silt substrate, no Flo	· · · · · · · · · · · · · · · · · · ·	V - W - 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	, 50,	7113 2211- 132
Sketch:				
L-SWI	0007			
-SWIUWE I				



Waterbody swio001 facing north upstream.



Waterbody swio001 facing south downstream.



Waterbody swio001 facing west across bank.

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: ESI - JBnton
3. Date of evaluation: 7/1/14	4. Time of evaluation: 3:00 PM
5. Name of stream: UNT to Millstone Creck	6. River basin: Nevse
7. Approximate drainage area: 70 ac.	8. Stream order:
9. Length of reach evaluated: 50 f4.	10. County: wilson
11. Site coordinates (if known): prefer in decimal degrees.  Latitude (ex. 34.872312): 35.75555 N	12. Subdivision name (if any):
Method location determined (circle): GPS Topo Sheet Ortho (  13. Location of reach under evaluation (note nearby roads and Approx 1,200 ft South of US 26	landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): TBD	·
15. Recent weather conditions: no cash w/ih pas	+ 48 hrs
16. Site conditions at time of visit: Weak Flow, Stable	Channe,
17. Identify any special waterway classifications known:	
Trout WatersOutstanding Resource Waters	Nutrient Sensitive WatersWater Supply Watershed(l-IV)
18. Is there a pond or lake located upstream of the evaluation p	oint? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES (NO)	20. Does channel appear on USDA Soil Survey? (YES) NO
21. Estimated watershed land use:% Residential	% Commercial% Industrial% Agricultural
90 % Forested	% Cleared / Logged% Other ()
22. Bankfull width: 2ft.	23. Bank height (from bed to top of bank): 1 F4
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	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	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 stream 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): 60 Comme	nts: Swio002, tract 19-011, 1.5 ft ohw width.
2 in wd, sand, silt substrate	
Evaluator's Signature	Date 7/1/14
This channel evaluation form is intended to be used only	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

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

	## ## ##	GEADAGTEDISTICS	<b>ECOREG</b>	ION POINT	FIFTY OF SHEET	SCORE
***	14 <b>0</b> (3.7)	EHARACTERISTICS 1	Coastal	Piedmont	Mountain*	10 To
##\ ##	1	Presence of flow / persistent pools in stream	0 – 5	0 – 4	0-5	3
		(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	4
		Riparian zone	0-6	0-4	0-5	5
	3	(no buffer = 0; contiguous, wide buffer = max points)	0-0	0-4	<del>0-3</del>	
	4	Evidence of nutrient or chemical discharges	0-5	0-4	0 – 4	5
	<u> </u>	(extensive discharges = 0; no discharges = max points)				
PHYSICAL	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0 – 4	0-4	2
Q.		Presence of adjacent floodplain				7
S	6	(no floodplain = 0; extensive floodplain = max points)	0-4	0 - 4	0-2	3
	-	Entrenchment / floodplain access				
	7	(deeply entrenched = 0; frequent flooding = max points)	0 – 5	0 - 4	0-2	4
1		Presence of adjacent wetlands	0.6	0-4	0-2	11
100	8	(no wetlands = 0; large adjacent wetlands = max points)	0-6	<u> </u>	U-Z	4
	9	Channel sinuosity	0-5	0 4	0-3	2
1	9	(extensive channelization = 0; natural meander = max points)	0-3	U-4	V-3	
1	10	Sediment input	0 – 5	0 - 4	0-4	4
	10	(extensive deposition= 0; little or no sediment = max points)				
	11	Size & diversity of channel bed substrate	* NA*	0 - 4	0-5	N/A
68		(fine, homogenous = 0; large, diverse sizes = max points)	<b>洲</b> 鹭(2) 20 30 30 30 30 30 30 30 30 30 30 30 30 30			
1	12	Evidence of channel incision or widening	0-5	0 – 4	0-5	4
		(deeply incised = 0; stable bed & banks = max points)  Presence of major bank failures				<del>'</del>
STABILITY	13	(severe erosion = 0; no erosion, stable banks = max points)	0 – 5	0 - 5	0-5	4.
		Root depth and density on banks				
₹	14	(no visible roots = 0; dense roots throughout = max points)	0 – 3	0-4	0 5	2
		Impact by agriculture, livestock, or timber production	0-5	0-4	0.5	δ.
4	15	(substantial impact =0; no evidence = max points)	0-5	0-4	0-5	د ا
25	1	Presence of riffle-pool/ripple-pool complexes	0-3	0-5	0-6	2
	16	(no riffles/ripples or pools = 0; well-developed = max points)	0-3	0 3		
₹	17	Habitat complexity	0-6	0-6	0-6	4
		(little or no habitat = 0; frequent, varied habitats = max points)			-	!
HABITAT	18	Canopy coverage over streambed	0-5	0-5	0-5	3
-1		(no shading vegetation = 0; continuous canopy = max points)	Control of the second		<del> </del>	<del>  -</del>
i liga Viire	19	Substrate embeddedness	NA*	0-4	0-4	NA
33		(deeply embedded = 0; loose structure = max)  Presence of stream invertebrates (see page 4)	0.00 A	· · · · · · · · · · · · · · · · · · ·	<u> </u>	<del>-</del>
400	20	(no evidence = 0; common, numerous types = max points)	0-4	0 – 5	0-5	0
		Presence of amphibians	1		<u> </u>	
	21	(no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
	<u>'</u>	Presence of fish	0.4	0.4	0.4	0
	22	(no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0 – 4	
#BIOLOGY	, ,	Evidence of wildlife use	0-6	0 5	0-5	2
	23	(no evidence = 0; abundant evidence = max points)	0-0	0-5	0-3	<u> </u>
*	*****	Total Points Possible	100	100	2100	NAME OF THE PARTY
18	學學學	。 1987年 - 1988年 -		The part of the pa	THE TOTAL PARTY	A 4844 464
		TOTAL SCORE (also enter on	irst page)			60
1.4	<b>海</b> 森 野	<b>"我们是这个国际的人,我们就是这个人的人,我们就是这个人的人,我们就是这个人的人,我们就是这个人的人,我们就是这个人的人,我们就是这个人的人,我们就是这个人的</b>	4.50世纪16年,1860年1865	2010日本の日本の大学の	<b>分,時間時期已開始到了季報。</b>	9

<sup>\*</sup> These characteristics are not assessed in coastal streams.

Date: 7/1/14	Project/Site: ACP	Latitude: 35.7555 N.
Evaluator: EST - JBenton	County: Wilson	Longitude: 78,05358W
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle ene) Ephemeral Intermittent Perennial	Other e.g. Quad Name: Bailey

A. Geomorphology (Subtotal = 18.5)	Absent	Weak	Moderate	Strong
1 <sup>a.</sup> Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	1	(2)	3
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	<b>(</b>	1.5
10. Natural valley	0	0.5	1	(1.5)
11. Second or greater order channel	(No	=0)	Yes	= 3
<sup>a</sup> artificial ditches are not rated; see discussions in manual	-			
B. Hydrology (Subtotal = 7)				
12. Presence of Baseflow	0	<b>①</b>	2	3
13. Iron oxidizing bacteria	(0)	1	2	3

B. Hydrology (Subtotal =/)				
12. Presence of Baseflow	0	<b>(1)</b>	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	<b>①</b>	1.5
16. Organic debris lines or piles	0	0.5	0 _	1.5
17. Soil-based evidence of high water table?	l No	0 = 0	(Yes	= 3 \

<del>y</del>			<b>\</b> .	
C. Biology (Subtotal = 5.5)				
18. Fibrous roots in streambed	3	1 (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	<b>Q</b>	1	2	3
22. Fish	(9)	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	<b>8</b>	9.5	1	1.5
25. Algae	0	(0.5)	1	1.5
26 Wetland plants in streamhed	EACW = 0.75; OBI = 1.5, Other = 0			

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

Notes: SW10002, tract 19-011, 50 ft, reach evaluated, 2ft. bw. 1ft-6h 1.5ft.
Ohw width, 2 inch wd Sand, 5ilt substrate

Sketch:



- SWIDOOZ



Waterbody swio002 facing southeast upstream.



Waterbody swio002 facing northeast downstream.



Waterbody swio002 facing southwest across bank.

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

	ТжĬ	
I	1.	



Provide the following information for the stream reach und	er assessment:
1. Applicant's name: Dominion	2. Evaluator's name: K. Markham / J. Gay
3. Date of evaluation: 7 July 2014	4. Time of evaluation: [D:30
5. Name of stream: UNT to Marsh Greek	6. River basin: Newse
7. Approximate drainage area: 15 acres	8. Stream order:
9. Length of reach evaluated: 50 ft.	10. County: Wilson
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): $\sqrt{A}$
	Longitude (ex77.556611): - 78.06183
Method location determined (circle): GPS) Topo Sheet Ortho (A  13. Location of reach under evaluation (note nearby roads and I  500 ft West of Intersection Rock Ridge	Aerial) Photo/GIS Other GIS Otherandmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): Procline Crossing	
15. Recent weather conditions: Tropical Storm rains	4 days ago
16. Site conditions at time of visit: Undisturbed	
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	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
21. Estimated watershed land use:% Residential	% Commercial% Industrial% Agricultural
50% Forested	% Cleared / Logged% Other (
22. Bankfull width: 6 H.	23. Bank height (from bed to top of bank):
	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 to 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): 37 Commer	nts: SWI 0003
- 100 MA	
Evaluator's Signature EW. Nable	Date 7 July 2014

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.

445 j		The second of th	E ECOREG	ION POINT	RANGE	CCODE:
A 21	.群	CHARAGTERISTICS	Coastal	Piedmont	Mountain	SCORE
	1	Presence of flow / persistent pools in stream	0-5	0-4	0 – 5	3
	*	(no flow or saturation = 0; strong flow = max points)				
	2	Evidence of past human alteration	0-6	0-5	0-5	0
		(extensive alteration = 0; no alteration = max points)  Riparian zone				
	3	(no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0 – 5	4
		Evidence of nutrient or chemical discharges			2 4	2
	4	(extensive discharges = 0; no discharges = max points)	0-5	0-4	0 – 4	2
PHYSICAL	5	Groundwater discharge	0-3	0-4	0 – 4	2
N.	3	(no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4		<i>•</i>
X	6	Presence of adjacent floodplain	0-4	0-4	0-2	0
X		(no floodplain = 0; extensive floodplain = max points)				
	7	Entrenchment / floodplain access	0 – 5	0-4	0 - 2	0
	-	(deeply entrenched = 0; frequent flooding = max points)  Presence of adjacent wetlands				
i es viñ	8	(no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	0
		Channel sinuosity	2 5	0 1		
	9	(extensive channelization = 0; natural meander = max points)	0 – 5	0 – 4	0-3	0
- 1 H &	10	Sediment input	0 – 5	0 – 4	0-4	4.
1000	10	(extensive deposition= 0; little or no sediment = max points)		<del></del>		
W.	11	Size & diversity of channel bed substrate	NA*	0 – 4	0 – 5	
		(fine, homogenous = 0; large, diverse sizes = max points)				
1	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	0
STABILITY	<del>                                     </del>	Presence of major bank failures				5
	13	(severe erosion = 0; no erosion, stable banks = max points)	0-5	0 – 5	0 – 5	5
M	1.4	Root depth and density on banks	0-3	0 – 4	0-5	2
M	14	(no visible roots = 0; dense roots throughout = max points)	0-3	0-4	<del>U-3</del>	4
S	15	Impact by agriculture, livestock, or timber production	0-5	0-4	0-5	2
4	1	(substantial impact =0; no evidence = max points)		<u> </u>		
	16	Presence of riffle-pool/ripple-pool complexes	0-3	0 – 5	0-6	
H		(no riffles/ripples or pools = 0; well-developed = max points)  Habitat complexity	<del>                                     </del>		·	
I	17	(little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	3
HABITAT		Canopy coverage over streambed	1 0 5	0.5	0.5	<u> 4</u> .
₹	18	(no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0 – 5	1
		Substrate embeddedness	NA*	0 – 4	0 – 4	
BIOLOGY	13	(deeply embedded = 0; loose structure = max)	NOT THE REAL PROPERTY.	, , , , , , , , , , , , , , , , , , ,	<u> </u>	
- V	20	Presence of stream invertebrates (see page 4)	0 – 4	0 – 5	0 – 5	
		(no evidence = 0; common, numerous types = max points)		<del>                                     </del>		
S	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0-4	
ΙĬ		Presence of fish				8
2	22	(no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	U
B		Evidence of wildlife use	0.6	Λ 5	0-5	3
	23	(no evidence = 0; abundant evidence = max points)	0 – 6	0-5	0-3	\_2
	N TO	Total Points Possible	100	100.00	100	<b>AND</b> 2.1
1.03	W. 50	。 第1964年 - 1855年 - 1965年 - 1964年		THE BOOK AND THE PERSON NAMED IN		1947日 · 1940年
		TOTAL SCORE (also enter on	irst page)		****	37
	1	。我就是 <b>对他们也没有的的人,但是我们的人们的人们的人们</b> ,他们就是这个人们的人们的人们的人们的人们的人们的人们的人们的人们的人们的人们的人们的人们的人	<b>特性和研究。</b> 正在4個個影響	1898年1288至美洲沿岸	<b>电影和东西的影响。</b>	<u> </u>

<sup>\*</sup> These characteristics are not assessed in coastal streams.

Date: 7 July 2014	Project/Site: ACP	Latitude: 35,75231
Evaluator: K. Markham / J. Gay	County: Wilson	Longitude:_78,06183
Total Points:  Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle one) Ephemeral intermittent Perennial	Other Luca we e.g. Quad Name:

A. Geomorphology (Subtotal =)	Absent	Weak	Moderate	Strong
1 <sup>a.</sup> Continuity of channel bed and bank	0	1_	2	(3)
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	đ	2	3
Particle size of stream substrate	0	(1)	2	3
5. Active/relict floodplain	0	<u>A</u>	2	3
6. Depositional bars or benches	0	(1)	2	3
7. Recent alluvial deposits	ō	1).	2	3
8. Headcuts	(1)	1	. 2	3
9. Grade control	(2)	0.5	1	1.5
10. Natural valley	(7)	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. Hvdrology	(Subtotal =	8,5)	

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	Ö	(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	o = 0	Yes	₹3)

C. Biology (Subtotal =7)				
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	( <u>6</u> )	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 streamhed	FACW = 0.75: OBL = 1.5 Other (0)			

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

Notes:

Sketch:



r Swiog93



Waterbody swio003 facing north upstream.



Waterbody swio003 facing south downstream.



Waterbody swio003 facing west across bank.

Open Waterbody Data Sheet Survey Description Project Name: Waterbody Name: Waterbody ID: Southeastern Reliability Unnamed Pond OWIODE 7 July 2014 Company: Crew Member Initials: State: County: Photos: KWM NC Wilson Facing south. ESI Tract Number(s): Nearest Milepost: Associated Wetland ID(s): 19-022 360.6 WWIODE4 Survey Type: □Centerline □Re-Route □Access Road □Other: Physical Attributes Waterbody Type: (check one) Stock Pond □ Natural Pond □ Lake □ Reservoir □ Impoundment □ Oxbow □ Other: Hydrologic Regime: Permanently Flooded ☐ Semipermanently Flooded ☐ Seasonally Flooded □ Temporarily Flooded OHWM OHWM Indicator: (check all that apply) ☐ Clear line □Shelving □Wrested □ Scouring □Water Height: on bank vegetation staining AИ □Bent, matted, or missing □Wrack □Litter and community change vegetation debris Depth of Water: Bank slope (average): Bank height (average):  $70_{\rm degrees}$ N/A□ Qualitative Attributes Water Appearance: (check one) □No water □Clear XTurbid □Sheen □Surface □Other: □Algal on surface scum mats Substrate: ☐ Bedrock □ Boulder ☐ Cobble ☐ Gravel ✓ Sand ☐ Silt/ clay ☐ Organic ⊠(Other: sand/clay (check all that apply, could not safely % of Substrate: obtain sediment Width of Riparian Zone: Vegetative Layers: ▼Trees: (check all that apply) 区Saplings/Shrubs: Herbs  $S_{in.}$ Avg. DBH of Dominants: N/AIZ 🛷 (approx.) Dominant Bank Vegetation (list): ominant Bank Vegetation (list): Liquidambar styraciflua, Acer rubrum, Woodwardia areolata, Arundinaria gigantra, Aquatic Habitats (ex. submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools, etc.): Excavated pond, no submerged or emergent vegetation noted. Aquatic Organisms Observed (list): tross (Lithobates spi) T&E Species Observed (list): None Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes):

Spoil pile adjacent to pond. Waterbody is: (check one) ☐ Natural Artificial, man-made ☐ Manipulated Waterbody Quality a: (check one) ☐ High **XLow** 

#### Waterboody ID: のいto のめ (

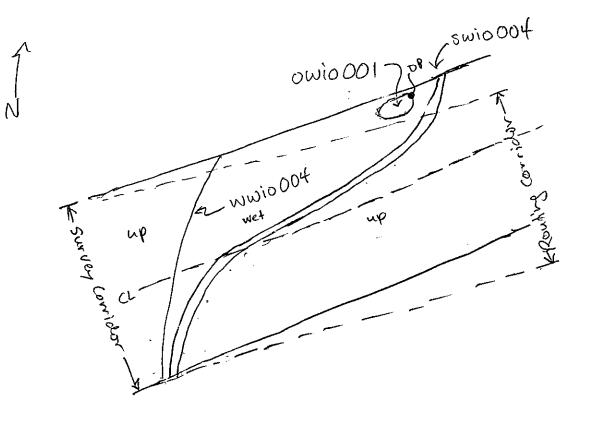
High Quality: Natural, natural bank vegetation around entire waterbody; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

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

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

Notes:

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



### Environmental Field Surveys Open Water Point Photo Page



Open Waterbody owio001 facing southwest.

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

	ľ
10.31	ľ
14811	ł
	Į



Provide the following information for the stream reach und	er assessment:
1. Applicant's name: Dominion	2. Evaluator's name: K. Markham / J. Gay
3. Date of evaluation: 7 July 2014	4. Time of evaluation: 1330
5. Name of stream: UNT to Warsh Swamp	6. River basin: Neuse
7. Approximate drainage area: 310ac.	8. Stream order:
9. Length of reach evaluated: 50 ft.	10. County: Wilson
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
Latitude (ex. 34.872312): 35, 74477	Longitude (ex77.556611): -78.07.259
Method location determined (circle): GPS Topo Sheet Ortho (A. Location of reach under evaluation (note nearby roads and landowne Rd.	
14. Proposed channel work (if any): Pipeline Crossing	
15. Recent weather conditions: Tropical Storm rains	4 days ago
16. Site conditions at time of visit: Undisturbed	
	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation p	oint? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? (YES) NO	20. Does channel appear on USDA Soil Survey? YES NO
21. Estimated watershed land use:% Residential	% Commercial% Industrial% Agricultural
50% Forested	% Cleared / Logged% Other (
22. Bankfull width: 6ft.	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 XOccasional 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 to between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 54 Commer	nts:
· · · · · · · · · · · · · · · · · · ·	
Evaluator's Signature	Date 7 July 2014
"Blain abancant acceleration Forms in intended to be considered."	aa a muuda ta agaigt landaumang and anuinanmantal —u-faccianals 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.

Ď.	*#*	CHAKAGIEKISII CS	ECOREG	ION POINT	RANGE	SCORE
機形	CONTRACTOR OF STREET	Presence of flow / persistent pools in stream				
	1 1	(no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	2
	2	Evidence of past human alteration	0-6	0-5	0 – 5	1
		(extensive alteration = 0; no alteration = max points)	0-0	V-3	0-3	1
	3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0-6	0 – 4	0-5	2
		Evidence of nutrient or chemical discharges	0.5		0 4	-
	4	(extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	2
PHYSICAL	5	Groundwater discharge	0-3	0-4	0-4	.3
Ş		(no discharge = 0; springs, seeps, wetlands, etc. = max points)	, J			<u> </u>
X	6	Presence of adjacent floodplain	0-4	0-4	0-2	
		(no floodplain = 0; extensive floodplain = max points)				
H	7	Entrenchment / floodplain access	0 – 5	0 - 4	0-2	4
		(deeply entrenched = 0; frequent flooding = max points)				
	8	Presence of adjacent wetlands	0-6	0 - 4	0-2	4 .
		(no wetlands = 0; large adjacent wetlands = max points)  Channel sinuosity				
100	9	(extensive channelization = 0; natural meander = max points)	0-5	0 – 4	0-3	
on the	<b></b>	Sediment input				11
*	10	(extensive deposition= 0; little or no sediment = max points)	0-5	0 – 4	0 - 4	4
		Size & diversity of channel bed substrate	A CONTRACTOR			
	11	(fine, homogenous = 0; large, diverse sizes = max points)	NA***	0-4	0 – 5	
2011	1	Evidence of channel incision or widening	0.5	0 4	0.5	4
>	12	(deeply incised = 0; stable bed & banks = max points)	0 – 5	0 – 4	0 – 5	4
STABILITY	13	Presence of major bank failures	0-5	0-5	0 – 5	J
	13	(severe erosion = 0; no erosion, stable banks = max points)				5
19	14	Root depth and density on banks	0-3	0 – 4	0-5	3
E		(no visible roots = 0; dense roots throughout = max points)			•	<u> </u>
S	15	Impact by agriculture, livestock, or timber production	0-5	0-4	0 – 5	1
		(substantial impact =0; no evidence = max points)				<u> </u>
1	16	Presence of riffle-pool/ripple-pool complexes	0-3	0 – 5	0-6	2
H	<u> </u>	(no riffles/ripples or pools = 0; well-developed = max points)			. <u>-</u>	
12	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	十
N H	*	Canopy coverage over streambed				1
HABITAT	18	(no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	4
		Substrate embeddedness	<b>"我们在在一个个的时候们</b>	2		
Heri.	19	(deeply embedded = 0; loose structure = max)	M. NAT	0-4	0-4	
1		Presence of stream invertebrates (see page 4)	0-4	0.5	0-5	
	20	(no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	
U	21	Presence of amphibians	0-4	0 – 4	0-4	
ĮŎ	21	(no evidence = 0; common, numerous types = max points)	0-4	U - <del>4</del>	0-4	
	22	Presence of fish	0-4	0-4	0-4	0
31		(no evidence = 0; common, numerous types = max points)	"		ļ , ,	<u> </u>
BIOLOGY	23	Evidence of wildlife use	0-6	0-5	0-5	3
tay k	SERVICE SERVICE	(no evidence = 0; abundant evidence = max points)			Maria de Maria de Reserva	<b>加速操作者来源之中的</b>
	恢复	Total Points Possible	100 位为	100	100	
C 23	A CONTRACTOR	。 第二章 1985年,1987年,1987年,1987年,1987年,1987年,1987年,1987年,1987年,1987年,1987年,1987年,1987年,1987年,1987年,1987年,1987年,1987年	TANK TANK TANK TANK	Language Control of the Control of t	<b>工作的现在分词</b>	
		TOTAL SCORE (also enter on t	irst page) 🙀	鄉鄉議司	Mariane les l'étants	54
中代中華	<b>対行の共活が</b>	THE REPORT OF THE PROPERTY OF	(1987年) 中国的中央中央中央中央中央中央中央中央中央中央中央中央中央中央中央中央中央中央中	्रकात । इक्टब्रह्म सम्बद्धाः प्रशासनीति	· · · · · · · · · · · · · · · · · · ·	'

<sup>\*</sup> These characteristics are not assessed in coastal streams.

Date: 7 July 2014	Project/Site: ACP	Latitude: 35,74477
Evaluator: K. Markham / J. Gay	County: Wilson	Longitude: , 78 . <b>07</b> 259
Total Points:  Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle-one) Ephemeral Intermittent Perennial	Other Lucumone.g. Quad Name:

if ≥ 19 or perennial if ≥ 30*	Ephemeral inter	mittent Perenni	e.g. Quad Ivame:	
A. Geomorphology (Subtotal = 16.5)	Absent	Weak	Moderate	Strong
1 <sup>a.</sup> Continuity of channel bed and bank	0 .	- 1	2	(3)
2. Sinuosity of channel along thalweg	0	1	(2)	3
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	<b>(2)</b>	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	9	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 =(しょう)	-			-
12. Presence of Baseflow	0	1_	2	(3)
13. Iron oxidizing bacteria	0	(1)	2	3
14. Leaf litter	1.5	(1)	0.5	0
15. Sediment on plants or debris	0	0.5	(1)	1.5
16. Organic debris lines or piles	0	0.5	1	(1.5)
17. Soil-based evidence of high water table?	N	o = 0	Yes = 31)	
C. Biology (Subtotal = 7 )				
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	769	1	2	3
22. Fish	<b>E</b>	0.5	1	1.5

(0)

0

0.5

(0.5)

0.5

FACW = 0.75; OBL = 1.5) Other = 0

1.5

1.5

1.5

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

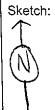
Notes:

23. Crayfish

25. Algae

24. Amphibians

26. Wetland plants in streambed



T<sub>SWi0004</sub>



Waterbody swio004 facing northeast upstream.



Waterbody swio004 facing southwest downstream.



Waterbody swio004 facing west across bank.

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

P. 21



Provide the following information for the stream reach und	
1. Applicant's name: Dominion	2. Evaluator's name: K. Markham, J. Gay
3. Date of evaluation: 8 July 2014	4. Time of evaluation: 0920
5. Name of stream: UNT to Marsh Swamp	6. River basin: Neuse
7. Approximate drainage area: 370ac.	8. Stream order: 2
9. Length of reach evaluated: 50 Ft.	10. County: <u>พหิรชา</u>
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): \(\frac{\lambda}{A}\)
Latitude (ex. 34.872312): 35.74401	Longitude (ex77.556611): 78.07489
Method location determined (circle): GPS Topo Sheet Ortho ( 13. Location of reach under evaluation (note nearby roads and 500 ft with earn of Old Raleign Rd crossing	landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): Proposed channel work (if any):	<u>q</u>
15. Recent weather conditions: Tropical storm va	ing 5 days ago
16. Site conditions at time of visit: undisturbed	
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? (ES) 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: 10% Residential	% Commercial% Industrial% Agricultural
4.5% Parastad	% Cleared / Logged% Other ()
	23. Bank height (from bed to top of bank): 2.5 Ct.
	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:Straight \( \sum_{\text{Occasional bends}} \)	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 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.	characteristic must be scored using the same ecoregion. Assign points pregion. Page 3 provides a brief description of how to review the effect an overall assessment of the stream reach under evaluation. If a nditions, enter 0 in the scoring box and provide an explanation in the 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): 68 Comme	ints: OHWM: 5 ft.
Evaluator's Signature W. Mable	Date 8 July 2014

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.

		CEADA CUEDISTICS		ION POINT	RANGEM	SCOPE
		CHARACTERISTICS	Coastal*	Piedmont	Mountain 🔻	
	1	Presence of flow / persistent pools in stream	0-5	0-4	0-5	5
		(no flow or saturation = 0; strong flow = max points)				
	2	Evidence of past human alteration	0-6	0-5	0-5	5
		(extensive alteration = 0; no alteration = max points)				
	3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0-6	0 – 4	0 - 5	6
		Evidence of nutrient or chemical discharges				
	4	(extensive discharges = 0; no discharges = max points)	0-5	0-4	0 – 4	3
45		Groundwater discharge				
$\mathbf{Z}$	5	(no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	3.
12		Presence of adjacent floodplain	0-4	0-4	0-2	4
	6	(no floodplain = 0; extensive floodplain = max points)	0-4	V – 4	0-2	4
PHYSICA	7	Entrenchment / floodplain access	0-5	0-4	0-2	3.
		(deeply entrenched = 0; frequent flooding = max points)	0 3	0 4	<del></del>	
11	8	Presence of adjacent wetlands	0-6	0-4	0-2	6
		(no wetlands = 0; large adjacent wetlands = max points)				$\cup \mathcal{U}$
	9	Channel sinuosity	0 5	0 – 4	0 - 3	3
		(extensive channelization = 0; natural meander = max points)  Sediment input				
	10	(extensive deposition= 0; little or no sediment = max points)	0 – 5	0 - 4	0 – 4	3 .
		Size & diversity of channel bed substrate	A PROPERTY OF		_	
	11	(fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0 – 5	
	10	Evidence of channel incision or widening		0 4	^ -	3
STABILITY	12	(deeply incised = 0; stable bed & banks = max points)	0 – 5	0-4	0 – 5	
Ĭ	13	Presence of major bank failures	0-5	0 – 5	0-5	4
H	1.5	(severe erosion = 0; no erosion, stable banks = max points)	<b>U</b> -5	0-3	<u> </u>	7
P	14	Root depth and density on banks	0-3	0 – 4	0 – 5	2
H		(no visible roots = 0; dense roots throughout = max points)		· .		
	15	Impact by agriculture, livestock, or timber production	0 – 5	0 – 4	0 - 5	3
100		(substantial impact =0; no evidence = max points)				-
	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
H	<u> </u>	Habitat complexity				
T.	17	(little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	5
HABITAL		Canopy coverage over streambed				4
M	18	(no shading vegetation = 0; continuous canopy = max points)	0 – 5	0 – 5	0 – 5	+
	10	Substrate embeddedness	NAT W	0 – 4	0 4	_
<b>李斯</b>	19	(deeply embedded = 0; loose structure = max)	THE INATION	0-4	0-4	
الولاية عماليون	20	Presence of stream invertebrates (see page 4)	0-4	0 – 5	0-5	1
Z		(no evidence = 0; common, numerous types = max points)	0 - 4	0 :- J	U = 3	1
Q,	21	Presence of amphibians	0-4	0-4	0-4	1
	<u> </u>	(no evidence = 0; common, numerous types = max points)	,	_ ,		l
[5]	22	Presence of fish	0-4	0-4	0-4	
* BIOLOGY		(no evidence = 0; common, numerous types = max points)  Evidence of wildlife use				<del>                                     </del>
	23	(no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	1
11/2			3621124		ed year and I was	
		Total Points Possible	100 w	100	P 100	
14	N. W.	TOTAL SCOPE C	M THE PERSON NAMED IN	A CONTRACT		68
HUES	<b>李</b>	TOTAL SCORE (also enter on i	iter hase)		MVI STATE	1 00

<sup>\*</sup> These characteristics are not assessed in coastal streams.

50010005

Date: 8 July 2014	Project/Site: ACP	Latitude: 35,74402
Evaluator: K. Markham	County: Wilson	Longitude:-78.07486
Total Points:  Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*  35	Stream Determination (circle one Ephemeral Intermittent Perennia	

A. Geomorphology (Subtotal = (6)	Absent	Weak	Moderate	Strong
1 <sup>a.</sup> 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
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	(6)	0.5	1	1.5
10. Natural valley	Ŏ	0.5	1	1.5
11. Second or greater order channel	No.	No = 0 Yes = 3		<del>=</del> 3

B. Hydrology (Subtotal = "(',') )	B. Hydrold	ogv (Subtotal =	9.5 )
-----------------------------------	------------	-----------------	-------

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 = 3)	

C. Biology	(Subtotal =	8	7

18. Fibrous roots in streambed		2	4		
	1 2		1	0	
<ol><li>Rooted upland plants in streambed</li></ol>	(3)	2	1	0	
20. Macrobenthos (note diversity and abundance)	0	1	2	3	
21. Aquatic Mollusks	<u> </u>	1 1	2	3	
22. Fish	(h)	0.5	1	1.5	
23. Crayfish	(0)	0.5	1	1.5	
24. Amphibians	0	Q <u>3</u>	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 manual.

Notes: OHWM 5A width

Marflies, damselflies



WW10005 upline

Xwwioows downline



Waterbody swio005 facing north upstream.



Waterbody swio005 facing south downstream.



Waterbody swio005 facing west across bank.

	<del></del>		
USACE AID#	DWQ #	Site #	_ (indicate on attached map)

	_	_
Г	9	
₩,	187	1

Provide the following information for the stream reach unc	der assessment:
1. Applicant's name: Dominion	2. Evaluator's name: T. Gay, K. Molden
3. Date of evaluation: 8 July 2014	4. Time of evaluation: 1030
5. Name of stream: UNT Marsh Swamp	6. River basin: Neuse
7. Approximate drainage area: 20 ac	8. Stream order:
9. Length of reach evaluated: 50° ft.	10. County: Wilson
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): NA
Latitude (ex. 34.872312): 35, 74157	Longitude (ex77.556611): -78.07691
Method location determined (circle): GPS Topo Sheet Orthod  13. Location of reach under evaluation (note nearby roads and  400 Feet NW (upstream) OU Ra	landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): TBD	0
15. Recent weather conditions: Tropical Storm ra	infall 5 days ago
16. Site conditions at time of visit: Aq Piz 12, Addive,	
•	Section 10Tidal WatersEssential Fisheries Habitat
	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation	point? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES NO	20. Does channel appear on USDA Soil Survey? YES NO
21. Estimated watershed land use:% Residential	% Commercial% Industrial [% Agricultural
— % Forested	% Cleared / Logged% Other ()
Top of Bank 22. Bankfull width: 6 Feet	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:Occasional 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 co comment section. Where there are obvious changes in the cinto 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 a 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 at 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): 19  A Rams Flat in a Sambean field	ents: Excavorted Feature through
OHWM width: 5ft,	
Evaluator's Signature	Date 8 July 2014

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.

		A CONTROL OF THE CONT	ECOREG	IONEOINT	RANGE	SCOPE
		AT THE RESIDENCE OF THE PROPERTY AND ADDRESS OF THE PROPERTY O	Coastal**	Piedmont	Mountain	SCORE
***	1	Presence of flow / persistent pools in stream	0-5	0-4	0-5	1
		(no flow or saturation = 0; strong flow = max points)  Evidence of past human alteration	į			
	2	(extensive alteration = 0; no alteration = max points)	0-6	0-5	0 – 5	$\cup$
	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	0
PHYSICAL	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0 – 4	0 – 4	)
VSIC	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0 – 4	0-2	0
PH	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0 – 4	0-2	
121	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0 – 4	0-2	_ O ,
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0 – 3	0
<b>静</b>	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0 – 5	0-4	0 – 4	<u>U</u>
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	≬ NA*	0 – 4	0-5	NA
Y.	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
STABILITY	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0 – 4	0-5	<i>*</i>
S	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0 – 5	0-4	0 – 5	D
	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
IIAÛ	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	1.
HABITAT	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0 – 5	0-5	0
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA L	0 – 4	0 – 4	NA
* BIOLOGY	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0 – 5	0
00	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0-4	2
IOI	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	4
		Total Points Possible	00100	73,100	100	(1 * 1 * 1 * 1 * 1 * 1 * 1 * 1 * 1 * 1 *
		TOTAL SCORE (also enterons	irst page)		PART AN	19

<sup>\*</sup> These characteristics are not assessed in coastal streams.

1.5

1.5

1.5

NC DWQ Stream Identification Form Version 4.11

Date: 851/ 2014	Project/Site: ACP	Latitude: 35, 74157
Evaluator: J.GAV	County: Wilson	Longitude: 78, 07691
Total Points: Stream is at least intermittent  20,5	Stream Determination (circle one) Ephemeral (ntermittent) Perennial	Other Lucama e.g. Quad Name:

A. Geomorphology (Subtotal =)	Absent	Weak	Moderate	Strong
1 <sup>a</sup> Continuity of channel bed and bank	. 0	1	(2)	3
Sinuosity of channel along thalweg	<b>(</b> )	1	2	3
<ol> <li>In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence</li> </ol>	0	O.	2	3
4. Particle size of stream substrate	0	<b>O</b> .	2	3
5. Active/relict floodplain	(9	1	2	3
6. Depositional bars or benches	Ó	<i>O</i> .	2	3
7. Recent alluvial deposits	0	1	(2)	3
8. Headcuts	Ø	1	2	3
9. Grade control	(h)	0.5	1	1.5
10. Natural valley	(0)	0.5	1	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 = 6.5 )	0	Ó	2	3
13. Iron oxidizing bacteria		1	2	3
14. Leaf litter	1.5	R	0.5	0
15. Sediment on plants or debris	0	0.5	<del>  /3</del> /3	1.5
16. Organic debris lines or piles	0	(0,3		1.5
17. Soil-based evidence of high water table?		lo = 0	Yes	s = 3
C. Biology (Subtotal =	1		'	
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)	(4)	1	2	3
Od Asuska Malluska	70)	1	2	
21. Aquatic Mollusks	{ 0}	'		3

0

(0)

0.5

0.5

FACW = 0.75; OBL = 1.5 Other = 0

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

Notes: Constructed feature through Rains soil soy Bean Field Second Feature is a swale, Not a strain

Sketch: SW10006

23. Crayfish

25. Algae

24. Amphibians

26. Wetland plants in streambed



Waterbody swio006 facing northwest upstream.



Waterbody swio006 facing southeast downstream.



Waterbody swio006 facing northeast across bank.



Swale confluencing with Waterbody swio006 facing northwest. Non-stream, non-wetland.

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

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ليت	
Provide the following information for the stream reach unc	ler assessment:
1. Applicant's name: Dominion	
3. Date of evaluation: 8 July 2014	4. Time of evaluation: 1400
5. Name of stream: Marsh Swamp	6. River basin: Newse
7. Approximate drainage area: 720 ac	8. Stream order: 2
9. Length of reach evaluated: 50 ft.	10. County: Wilson
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): NA
Latitude (ex. 34.872312): 35,73868	Longitude (ex77.556611): - 78.07859
Method location determined (circle): GPS Topo Sheet Ortho ( 13. Location of reach under evaluation (note nearby roads and 300 ft. upstram from Old Paleigh F	Aerial) Photo/GIS Other GIS Otherlandmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): Pipeline crossing	4
15. Recent weather conditions: Tropical storm ro	ins 5 days ago
16. Site conditions at time of visit: Undisturbed	
	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? (ES) NO If yes, estimate the water surface area: 5 ac
19. Does channel appear on USGS quad map? YES NO	20. Does channel appear on USDA Soil Survey? YES NO
	% Commercial% Industrial% Agricultural
45% Forested	% Cleared / Logged% Other ()
22. Bankfull width: 9 ft.	23. Bank height (from bed to top of bank): 1.5 ft.
\ /	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the ecc characteristics identified in the worksheet. Scores should re characteristic cannot be evaluated due to site or weather co comment section. Where there are obvious changes in the clinto a forest), the stream may be divided into smaller reaches reach. The total score assigned to a stream reach must rang highest quality.	the 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 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): 86 Comme and Elliptic ickring complexes): American	ints: Native Freshweter mussels present (Elliptio complanata cel noted
Evaluator's Signature While Interest only This channel evaluation form is intended to be used only	Date & July 2014
This channel evaluation form is intended to be used only	as a guide to assist landowners and environmental professionals in

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

1. H	***** #	CHARACTERISTICS	ECOREG	ION POINT	RANGE	SCORE
	37.26.14.4		Coastal	· Piedmont	Mountain	在域域的
	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	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0 – 5	0-4	0-4	4
V.	5	Groundwater discharge  (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0 – 4	3
$\mathbf{SIC}$	6	Presence of adjacent floodplain  (no floodplain = 0; extensive floodplain = max points)	0-4	0 – 4	0-2	4
PHYSICAL	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	6
	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	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	5
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	3
LS	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	3
HABITAT	17	Habitat complexity  (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	6
ABI	18	Canopy coverage over streambed  (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	4
国际		Substrate embeddedness  (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	
2 1 1		Presence of stream invertebrates (see page 4)  (no evidence = 0; common, numerous types = max points)	0-4	0-5	0 – 5	4
7.5 (	21	Presence of amphibians  (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	1
OLC	22	Presence of fish	0-4	0-4	0-4	1
BIOLOGY	23	(no evidence = 0; common, numerous types = max points)  Evidence of wildlife use	0-6	0 – 5	0-5	6
		(no evidence = 0; abundant evidence = max points)  Total Points Possible:	100	1 100	100	
	M.	TOTAL SCORE (also enter on	irst page)		Mark Mark At 1 2 4 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	86

<sup>\*</sup> These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11

Sw10 007

Date: 8 July 2014	Project/Site: ACP	Latitude: 35,73868
Evaluator: K. Markham	County: Wilson	Longitude:_78,07859
Total Points: Stream is at least intermittent if $\geq 19$ or perennial if $\geq 30^*$	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other LULOMO

155		10.7		1
A. Geomorphology (Subtotal = 25,5)	Absent	Weak	Moderate	Strong
1 <sup>a.</sup> Continuity of channel bed and bank	0	11	. 2	(3)
Sinuosity of channel along thalweg	0	11	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	1.5
10. Natural valley	0	0.5	1	(1.5)
11. Second or greater order channel	No	o = 0	Yes	= 3
<sup>a</sup> artificial ditches are not rated; see discussions in manual				$\overline{}$
B. Hydrology (Subtotal = 11.5)				
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 $\neq 3$			
C. Biology (Subtotal = 13 )		-		
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	(65)	1 7	1.5

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	1	2	3
21. Aquatic Mollusks	0	1	2	<u> </u>
22. Fish	0	(0.5)	1	1.5
23. Crayfish	(1)	0.5	1	1.5
24. Amphibians	0	<b>Q.5</b> )	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed		FACW = 0.75; (	DBL = 1.5 Other	(= 0)

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

Notes: Corbicula (Asiatic clam) present - low numbers, Elliptio icterina complex (Freshwet mussel) present

Elliptic complanata complex present

Caddisfly larvae present homerous, American eel seen

Sketch:

www.copl6 upline

WW100016 downline



Waterbody swio007 facing west upstream.



Waterbody swio007 facing east downstream.



Waterbody swio007 facing south across bank.

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

TEN
14 21



Provide the following information for the stream reach unde	
1. Applicant's name: Dominion	2. Evaluator's name: K. Markham J. Gay
3. Date of evaluation: 9 July 2014	4. Time of evaluation: 1400
5. Name of stream: UNT to Marsh Swamp	6. River basin: Newse
7. Approximate drainage area: 160 ac.	8. Stream order: 15t
9. Length of reach evaluated: 50 件.	10. County: Wilson
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): $N/A$
Latitude (ex. 34.872312): 35.73 [18	Longitude (ex77.556611): - 78.08505
Method location determined (circle): GPS Topo Sheet Ortho (A 13. Location of reach under evaluation (note nearby roads and la	erial) Photo/GIS Other GIS Otherandmarks and attach map identifying stream(s) location):
near intersection of Bayken	a old Raleigh Rd
14. Proposed channel work (if any): Type line Crossing	
15. Recent weather conditions: Tropical storm rain	s lo days ago.
16. Site conditions at time of visit: Undisturbed	
	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters1	Nutrient Sensitive WatersWater 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? (YES) NO	20. Does channel appear on USDA Soil Survey? YES NO
	% Commercial% Industrial% Agricultural
니 <u>5</u> % Forested <b>22.</b> Bankfull width: 나 다	% Cleared / Logged% Other (
22. Bankfull width:	23. Bank height (from bed to top of bank):
	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 reflect 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 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 hat display more continuity, and a separate form used to evaluate each between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 7 Commen	ts: upstream reach of swio 008 and swio 013
· · · · · · · · · · · · · · · · · · ·	
Evaluator's Signature Lew Noble	Date 9 July 2014
	s 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.

北坡	大學作		ECOREG	ION POINT	RANGE	k Nati
	#	CHARACTERISTICS TO THE STATE OF	Coastalle		* Mountain*	SCORE
	1	Presence of flow / persistent pools in stream	0 – 5	0-4	0 – 5	7
	1	(no flow or saturation = 0; strong flow = max points)	0-3	. 0-4	<u> </u>	
	2	Evidence of past human alteration	0-6	0-5	0 – 5	5
想		(extensive alteration = 0; no alteration = max points)				
9	3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0 – 6	0 – 4	0 - 5	6
		Evidence of nutrient or chemical discharges				
	4	(extensive discharges = 0; no discharges = max points)	0 – 5	0 – 4	0 – 4	4
5	5	Groundwater discharge	0 – 3	0-4	0 – 4	3
	٠,	(no discharge = 0; springs, seeps, wetlands, etc. = max points)	V – 3	<del></del>	U-4	)
K	6	Presence of adjacent floodplain	0 – 4	0 – 4	0-2	3
		(no floodplain = 0; extensive floodplain = max points)	_			
	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0 – 5	0 – 4	0-2	4
*PHYSICA		Presence of adjacent wetlands				,
	8	(no wetlands = 0; large adjacent wetlands = max points)	0 – 6	0-4	0 – 2	6
**		Channel sinuosity	0.5	0 4	0 2	15
	9	(extensive channelization = 0; natural meander = max points)	0 – 5	0 – 4	0-3	5
1	10	Sediment input	0-5	0 – 4	0-4	3
	10	(extensive deposition= 0; little or no sediment = max points)		•	· · · · · · · · · · · · · · · · · · ·	
	11	Size & diversity of channel bed substrate	NA NA	0 4	0 – 5	
200 A		(fine, homogenous = 0; large, diverse sizes = max points)  Evidence of channel incision or widening	10000000000000000000000000000000000000			
	12	(deeply incised = 0; stable bed & banks = max points)	0 – 5	0 – 4	0-5	4
*STABILITY		Presence of major bank failures		0.5		11
	13	(severe erosion = 0; no erosion, stable banks = max points)	0-5	0 – 5	0-5	4
9	14	Root depth and density on banks	0-3	0 – 4	0-5	3
T	17	(no visible roots = 0; dense roots throughout = max points)	0-3	04	0.3	
S	15	Impact by agriculture, livestock, or timber production	0-5	0 – 4	0-5	4
		(substantial impact =0; no evidence = max points)				1
	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0 / 3	0-5	0-6	3
HABITAT		Habitat complexity				2
	17	(little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	3
	18	Canopy coverage over streambed	0-5	0-5	0-5	<u> </u>
HA H	18	(no shading vegetation = 0; continuous canopy = max points)	0-3	0-3	0-3	5
	19	Substrate embeddedness	NATION	0-4	0-4	
1000		(deeply embedded = 0; loose structure = max)	of the Resident	ļ ,		
BIOLOGY	20	Presence of stream invertebrates (see page 4)	0-4	0 – 5	0-5	
X		(no evidence = 0; common, numerous types = max points)  Presence of amphibians				<del>                                     </del>
0	21	(no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	
		Presence of fish	1 2 1	<u> </u>	<u> </u>	
E	22	(no evidence = 0; common, numerous types = max points)	0-4	0 – 4	0-4	<u> </u>
	23	Evidence of wildlife use	0-6	0-5	0-5	3
	L 23	(no evidence = 0; abundant evidence = max points)	V - 0	0-3	V-J	
		A CONTROL POSTING	100	100	100	
1		The state of the s			THE RESERVE	A CONTRACTOR OF THE PARTY OF TH
		TOTAL SCORE (also enterion f	itst page)			71
77.5		harmateristics are not assessed in acceptal attention	CONTRACTOR STATE	2. (1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	and	<u>"</u>

<sup>\*</sup> These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11

SW10.889 Latitude: 36,73118

Date: 9 July 2014	Project/Site: ACP	Latitude: 35,73118
Evaluator: K. Markham, J. Gay	County: Wilson	Longitude: 78,08505
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*  38.5	Stream Determination (circle one) Ephemeral Intermittent Ferennial)	Other Lucamo e.g. Quad Name:

A. Geomorphology (Subtotal = 22.5 )	Absent	Weak	Moderate	Strong
1 <sup>a.</sup> Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	2	(3)
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	(D)	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	Ne	) = 0	Yes	-3

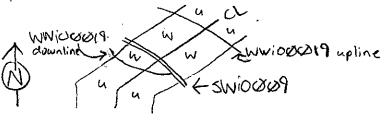
B. Hydrology (Subtotal = <u> </u>				
12. Presence of Baseflow	0	1	(2)	3
13. Iron oxidizing bacteria	0	1	(2)	3
14. Leaf litter	1.5	1 -	(0.5)	0
15. Sediment on plants or debris	0	0.5	①	1.5
16. Organic debris lines or piles	0	0.5	(1)	1.5
17. Soil-based evidence of high water table?	No	o = 0	Yes	<b></b>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

Tr. Con based evidence of high water table:	,	10 – U	1 63	てる)
C. Biology (Subtotal = 65)	,			<del>`-'</del> -
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; O	BL = 1.5 Other =	(S)

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

Notes: Tropical Storm rains 6 days also. This reach with saturated bed and santiered pools; upstream reach of surlo 008 and swio03

Sketch:





Waterbody swio009 facing northwest upstream.



Waterbody swio009 facing southeast downstream.



Waterbody swio009 facing southwest across bank.

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

HH	ì
111	



Provide the following information for the stream reach und	er assessment:  2. Evaluator's name: K. Markham, J. Gay
1. Applicant's name: Dominion 3. Date of evaluation: 9 July 2014	2. Evaluator's name: 12/00
	4. Time of evaluation: (2:00
5. Name of stream: VM to Marsh Swamp	6. River basin: Newse
7. Approximate drainage area: 260 ac.	8. Stream order: 2 1/2
9. Length of reach evaluated: 50 ft.	10. County: W₁⟨\$₺√\
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): $NA$
Latitude (ex. 34.872312): 35, 72924	Longitude (ex77.556611): - 78.08550
Method location determined (circle): GPD Topo Sheet Ortho (A. Location of reach under evaluation (note nearby roads and location).	
14. Proposed channel work (if any): Pipeline Crossing	
15. Recent weather conditions: Tropical Shrm re	ins 6 days ago
16. Site conditions at time of visit: un disturbed	
17. Identify any special waterway classifications known:	Section 10 Tidal Waters Essential Fisheries Habitat
	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
<del></del>	point? VES NO If yes, estimate the water surface area:   LLL
19. Does channel appear on USGS quad map? (YES) NO	<del></del>
	% Commercial% Industrial% Agricultural
	% Cleared / Logged% Other ()
22. Bankfull width: 7 H.	23. Bank height (from bed to top of bank): 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 econ 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.	e 2): Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points region. Page 3 provides a brief description of how to review the flect an overall assessment of the stream reach under evaluation. If a nditions, enter 0 in the scoring box and provide an explanation in the saracter 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 limits:
Evaluator's Signature Chable	Date 9 July 2014
	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.

8	112	GHARAGUERISTICS	ION POINT	RANGE*	SCORE	
***	11		Coastal C	Piedmont	Mountain."	一个性 (1)
	1	Presence of flow / persistent pools in stream	0-5	0-4	0 – 5	5
	ļ	(no flow or saturation = 0; strong flow = max points)		· <u>-</u> -		
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0 – 5	0 – 5	۵.
	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
SIG	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0 – 4	0-4	0-2	4.
PHYSIC	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0 – 4	0-2	3
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	4
	9	Channel sinuosity  (extensive channelization = 0; natural meander = max points)	0 – 5	0 – 4	0-3	5
	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	
K	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0 – 5	5
STABILITY	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	5
ABI	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0 – 4	0 – 5	3
S	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	4
		Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0 – 5	0-6	3
TAT	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0 – 6	0-6	6
HABITAT	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0 – 5	0-5	5
層		Substrate embeddedness (deeply embedded = 0; loose structure = max)	NAT.	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	2
OGY	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0-4	[
IOL	22	Presence of fish  (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
BIOLOGY	23	Evidence of wildlife use  (no evidence = 0; abundant evidence = max points)	0-6	0-5	0 – 5	+
		Total Points Possible	100	100	100	
		TOTAL SCORE (also enter ony				71
						•

<sup>\*</sup> These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11

Date: 9 July 2014 .	Project/Site: ACP	Latitude: 35,72924	
Evaluator: K, Markham, J. Gay	County: Wilson	Longitude: -78.08\$50	
Total Points:  Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other Lucomo	

	Absent	Weak	Moderate	Strong
. Geomorphology (Subtotal = 21.5 ) 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
Active/relict floodplain	0	1	(2)	3
Depositional bars or benches	0	1	(D)	3
Recent alluvial deposits	0	1	2	(3)
Headcuts	(0)	11	2	3
. Grade control	Ö	(0.5)	1	1.5
D. Natural valley	0	0.5	1	_ 1.5
Second or greater order channel	No	o = 0	Yes	<del>=</del> 3)
artificial ditches are not rated; see discussions in manual				
. 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	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?	N	o = 0	Yes	; €3)
C. Biology (Subtotal = 약)		, <u></u>		
8. Fibrous roots in streambed	3	2	1	0
Rooted upland plants in streambed	(3)	2	1	0
Macrobenthos (note diversity and abundance)	0	1	2	3
1. Aquatic Mollusks	0	(1)	2	3
2. Fish		0.5	1	1.5
3. Crayfish	(1)	0.5	1	1.5
4. 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 =	<b>10</b>
*perennial streams may also be identified using other method			:	
	, ,		ostream reach	C - 1 - 017

FSWIDDES



Waterbody swio008 facing east upstream.



Waterbody swio008 facing west downstream.



Waterbody swio008 facing south across bank.

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

F.	. I		Ŀ,	1
	ïī	•		1
L	٠.	-	•	3



Provide the following information for the stream reach un	
1. Applicant's name: <u>Dominion</u>	2. Evaluator's name: Ji GAY
3. Date of evaluation: 11 July 2014	4. Time of evaluation: 0900
5. Name of stream: UNT MARSH SWAMP	6. River basin: Neuse
7. Approximate drainage area: 20 ac	8. Stream order:
9. Length of reach evaluated: 50 ft.	10. County: Wilson
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): NA
Latitude (ex. 34.872312): 35, 72 354	Longitude (ex77.556611): 78. 09716
Method location determined (circle): GPS Topo Sheet Orthod  13. Location of reach under evaluation (note nearby roads and  USO Feet Sorth of Tay Kin Ru	landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any):	
15. Recent weather conditions: 0.5 inch Rain Eve	tees than 17 hours ago
16. Site conditions at time of visit: Nature	V
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: 1 ACL
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: 75% Residential	% Commercial% Industrial% Agricultural
25% Forested	% Cleared / Logged% Other (
Top of Bank  22. Bankfull width: 7 full	23. Bank height (from bed to top of bank): / foot
	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 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 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 as 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): 3 Commo	ents: OHWM width; 5ft,
Evaluator's Signature // // // // // // // // // // // // //	Date 11 July 2014
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

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1   Presence of flow persistent pools in stream (no flow of past human alteration (extensive alteration = 0, no alteration = max points)   0-5   0-4   0-5   4	4.	4.5	CHADACTEDISTICS	<b>ECOREG</b>	ION POINT	RANGE	SCORE
1	* 3/			* Coastal	Piedmont	Mountain	
2   Evidence of past human alteration   0 - 6   0 - 5   0 - 5   5		1		0-5	0-4	0 – 5	4
2   (extensive alteration = 0; no alteration = max points)	(3)						
Comment   Comm		2		0-6	0 – 5	0 - 5	5
Comment   Comm		3	Riparian zone	0-6	0-4	0 – 5	6
Channel sinuosity							
Channel sinuosity	4	4		0-5	0-4	0-4	4.
Channel sinuosity	AL	5		0-3	0 – 4	0 – 4	3
Channel sinuosity	SIC	6	Presence of adjacent floodplain	0 – 4	0-4	0-2	4
Channel sinuosity	1						1
Channel sinuosity	<b>N</b>	7		0-5	0-4	0-2	4
10   Channel sinuosity   Sediment input   Sediment		8	Presence of adjacent wetlands	0-6	0-4	0-2	6
10   (extensive channelization = 0; natural meander = max points)   10   (extensive deposition = 0; little or no sediment = max points)   11   (extensive deposition = 0; little or no sediment = max points)   11   (extensive deposition = 0; little or no sediment = max points)   11   (extensive deposition = 0; little or no sediment = max points)   12   (fine, homogenous = 0; large, diverse sizes = max points)   12   (deeply incised = 0; stable bed & banks = max points)   13   (deeply incised = 0; stable bed & banks = max points)   13   (extensive deposition = 0; no erosion, stable banks = max points)   14   (extensive deposition = 0; no erosion, stable banks = max points)   15   (extensive deposition = 0; no erosion, stable banks = max points)   15   (extensive deposition = 0; dense roots throughout = max points)   15   (extensive deposition = 0; dense roots throughout = max points)   15   (extensive deposition = 0; dense roots throughout = max points)   16   (extensive deposition = 0; dense roots throughout = max points)   16   (extensive deposition = 0; dense roots throughout = max points)   16   (extensive deposition = 0; extensive deposition = 0; extensive deposition = 0; dense roots throughout = max points)   0 - 5   0 - 5   0 - 6   2   (intelle or no habitat = 0; frequent, varied habitats = max points)   0 - 6   0 - 6   0 - 6   0 - 6   2   (intelle or no habitat = 0; frequent, varied habitats = max points)   0 - 6   0 - 6   0 - 6   0 - 6   0 - 6   (intelle or no habitat = 0; frequent, varied habitats = max points)   0 - 6   0 - 6   0 - 5   0	446			0.5	0 4	0 3	
11   (fine, homogenous = 0; large, diverse sizes = max points)		9	(extensive channelization = 0; natural meander = max points)	0-3	0-4	0-3	
11   (fine, homogenous = 0; large, diverse sizes = max points)	18 <b>j</b>	10		0-5	0 – 4	0 – 4	3
12   Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)   0-5		11	Size & diversity of channel bed substrate	NA*	0-4	0 – 5	N/A
15	1. 1. 1. 2. 24 2. 24	12	Evidence of channel incision or widening		0-4	0-5	
15	1		Processes of major bank failures			V	<del>- 1</del>
15	O.F	13		0-5	0 – 5	0-5	4
15	AB	14		0-3	0 4	0-5	Ż
16	SI	15	Impact by agriculture, livestock, or timber production	0-5	0-4	0-5	4
10	1.60	<u> </u>		-			1
19		16		0-3	0-5	0-6	2
19	AT	17		0.6	0.6	0.6	u
19		17		0-6	0-0	0-0	7
19	A.B.	18		0-5	0 – 5	0-5	5
20	Ħ	-		Association Control			
Total Points Possible 100 3 100 100 100 100 100 100 100 100 1		19		NA*	0 – 4	0-4	<b>AK</b>
Total Points Possible	Ŷ.	20	· · · · ·	0-4	0-5	0-5	1
Total Points Possible	Ę.	21	Presence of amphibians	0-4	0-4	0-4	17
Total Points Possible		<u></u>		ļ			1
Total Points Possible 100 3 100 100 100 100 100 100 100 100 1	O	22		0 – 4	0 – 4	0-4	0
Total Points Possible	P	23	Evidence of wildlife use	0-6	0-5	0-5	2
	· 漢字	1	(no evidence = u; abundant evidence = max points)			ASSESSMENT OF THE PARTY OF THE	S SECTION OF SUCCESSION
TO THE PART OF A SAME OF A SAME OF THE PART OF THE PAR	10 B		Total Points Possible		100	100 7	
TOTAL SCORE (also enter on first page)	4	den dage	<b>。                                    </b>	irst page)		Mental Andrew	vi

<sup>\*</sup> These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11

SwioØID

Date: 11 July 2014	Project/Site: ACP	Latitude: 35,72354
Evaluator: JGAY	County: Wilson	Longitude: 78.087/6
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name: Lucama

A. Geomorphology (Subtotal = 16 )	Absent	Weak	Moderate	Strong
1 <sup>a.</sup> Continuity of channel bed and bank	0	1	(2)	3
2. Sinuosity of channel along thalweg	0	1	(2)	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	Ø ·	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	1.5
10. Natural valley	(0)	0.5	1	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)

12. Presence of Baseflow	0	1	2	l (3)
13. Iron oxidizing bacteria	0	(1)	2	3
14. Leaf litter	1.5	<b>①</b>	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.	o = 0	Yes	= 3 )
C. Biology (Subtotal = 7.5)		.2		/

C. Biology (Subtotal = <u> </u>					
18. Fibrous roots in streambed	3′	(2)	1	0	
19. Rooted upland plants in streambed	(3,	2	1	0	
20. Macrobenthos (note diversity and abundance)	J <sub>Q</sub>	7	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	70,5	1	1.5	
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0				

swio 013

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

Notes:

Sketch:

5W10010 7



Waterbody swio010 facing west upstream.



Waterbody swio010 facing east downstream.



Waterbody swio010 facing south across bank.

5	w	1	0	0	13
				$\sim$	_

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

4	
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ı	لستسا



Provide the following information for the stream reach und	ler assessment:
1. Applicant's name: Dominian	2. Evaluator's name: J, Gay
3. Date of evaluation: 11 July Zoid	4. Time of evaluation: <u>0930</u>
5. Name of stream: UT +0 MARSH SWAM	6. River basin: Neuse
7. Approximate drainage area: 330 ac.	8. Stream order: Z
9. Length of reach evaluated: 50 Pt.	10. County: Wilson
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): NA
Latitude (ex. 34.872312): 35.72794	Longitude (ex77.556611):
Method location determined (circle): GPS Topo Sheet Ortho (  13. Location of reach under evaluation (note nearby roads and  5.50 feet South of Florikin Location)	landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): TBD	
15. Recent weather conditions: O.S. IAEM CAN'N	Event 12 hours ago
16. Site conditions at time of visit: Nature	
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
	% Commercial% Industrial 5% Agricultural
Top of Bank 50% Forested  22. Bankfull width: 6 ++.	23. Bank height (from bed to top of bank): 2 P+.
24. Channel slope down center of stream: Flat (0 to 2%)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends **	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the ecc characteristics identified in the worksheet. Scores should re characteristic cannot be evaluated due to site or weather co comment section. Where there are obvious changes in the clinto 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 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 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): 75 Comme	ents: OHWM width: 4 A.
71/76-	
Evaluator's Signature	Date IN July 2014
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	Corns of Engineers to make a preliminary assessment of stream

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	疆流水	ECOREGION POINT RANGE		THE COUNTY		
	##	CHARACTERISTICS	Coastal	Piedmont	Mountain	SCORE
	1	Presence of flow / persistent pools in stream	0-5	0 – 4	0 – 5	250
		(no flow or saturation = 0; strong flow = max points)	0 3	V T		5
	2	Evidence of past human alteration	0-6	0-5	0-5	5
		(extensive alteration = 0; no alteration = max points)				
	3	Riparian zone	0-6	0-4	0-5	3
		(no buffer = 0; contiguous, wide buffer = max points)				
41.3	4	Evidence of nutrient or chemical discharges	0-5	0-4	0-4	4
	<b></b> _	(extensive discharges = 0; no discharges = max points)				
Bis	5	Groundwater discharge	0-3	0 - 4	0-4	3
PHYSICAL		(no discharge = 0; springs, seeps, wetlands, etc. = max points)				
S	6	Presence of adjacent floodplain	0-4	0 - 4	0-2	4
≥	<u> </u>	(no floodplain = 0; extensive floodplain = max points)				
<b>a</b>	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0 – 4	0-2	4 .
1	<u> </u>	Presence of adjacent wetlands			•	
譿	8	(no wetlands = 0; large adjacent wetlands = max points)	0-6	0 - 4	0 - 2	6.
		Channel sinuosity				
	9	(extensive channelization = 0; natural meander = max points)	0 – 5	0 - 4	0 - 3	4.
35		Sediment input				
	10	(extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0 – 4	4 .
蒙		Size & diversity of channel bed substrate	· Marine			
	11	(fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	MM
<b>**</b>	10	Evidence of channel incision or widening				
$\mathbf{x}$	12	12 (deeply incised = 0; stable bed & banks = max points)	0-5	0 – 4	0-5	4
STABILITY	13	Presence of major bank failures	0-5	0-5	0 – 5	4:
	13	(severe erosion = 0; no erosion, stable banks = max points)	0-3	<b>U</b> -3	0-5	٩,
9	14	Root depth and density on banks	0-3	0 – 4	0-5	_
T		(no visible roots = 0; dense roots throughout = max points)	0-5	U — <del>1</del>	0-5	2
	15	Impact by agriculture, livestock, or timber production	0-5	0 – 4	0-5	(
7.8		(substantial impact =0; no evidence = max points)				<u>ري</u>
	16	Presence of riffle-pool/ripple-pool complexes	0-3	0-5	0-6	3 (
		(no riffles/ripples or pools = 0; well-developed = max points)				٠ ر
⋖	17	Habitat complexity	0-6	0-6	0-6	<b>I</b> :
		(little or no habitat = 0; frequent, varied habitats = max points)				7 7
HABITAT	18	Canopy coverage over streambed	0 – 5	0 – 5	0 – 5	4
		(no shading vegetation = 0; continuous canopy = max points)	naksiatal yaki Masina Aliki di			
4940	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0 – 4	0 – 4	NA
1		Presence of stream invertebrates (see page 4)				(11)
BIOLOGY	20	(no evidence = 0; common, numerous types = max points)	0 – 4	0-5	0 – 5	•
7		Presence of amphibians	1			, A
Jŏ	21	(no evidence = 0; common, numerous types = max points)	0-4	0 – 4	0 4	I   $ $
Ä		Presence of fish	<b>.</b> .			aria .
IC	22	(no evidence = 0; common, numerous types = max points)	0 – 4	0-4	0-4	2.
E E	22	Evidence of wildlife use		0.5	0.5	_
1	23	(no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	5 _
ALA:	NY Y	A CONTRACTOR SECURITION OF THE PROPERTY OF THE	2 100	100	7, 100	*
47	媒体	Total Points Possible	Address Andrews Address Andrews Address Andrews Andre	100	177. TOO 12.	11/1
		TOTAL SCORE (also enter on f	AND THE PROPERTY OF		AND HOUSE	75
		TOTAL SCORE; (also enter on f	mar hage in			1, 0

<sup>\*</sup> These characteristics are not assessed in coastal streams.

Version 4.11		•	
Project/Site:	ACP	Latitude: 35	72794
County: Wi	Ison	Longitude: 7	8.08698
Stream Determ	nation (circle one)	Other	
Absent	Weak	Moderate	Strong
0	1	_2	(3)
0	1	(3	3
0	1 1	(2)	3
0	1	(2)	3
		(2)	(3)
	· · · · · · · · · · · · · · · · · · ·		3
			3
			3
		<del></del>	1.5
	<del> </del>	<del> </del>	1
<del></del>		<u> </u>	1.5
	10 - 0	Yes	₹3/
		- Water State of the Land Stat	
	· · · · · ·		
			(3)
			3
<del></del>			0
			1.5
	<del></del>		1.5
<u> </u>	10 = 0	( Yes	= 3)
			<u></u>
*******	<del></del>	1	0
	2		0
	(1)		3
			3
	<del></del>	1	1.5
	. 197	1	1.5
0		1	1.5
(0)	<u></u>	,	1.5
		OBL = 1,5 Other =	0)
ods. See p. 35 of mar	ual.		<u>/</u>
<del> </del>	-		
		•	
0013			
	Project/Site:	Project/Site: ACP	Project/Site: ACP



Waterbody swio013 facing northwest upstream.



Waterbody swio013 facing southeast downstream.



Waterbody swio013 facing southwest across bank.

	<del></del>		
		1	
USACE AID#	DWQ #	Site #	(indicate on attached map)

=
WW
1.6



Provide the following information for the stream reach under assessment:
1. Applicant's name: Tenicon 2. Evaluator's name: Tenicon
3. Date of evaluation: 11 July 2014 4. Time of evaluation: 0950
5. Name of stream: UNT to MARSH SULAMP 6. River basin: NOSE
7. Approximate drainage area: 1300 ac. 8. Stream order: 300
9. Length of reach evaluated: 50 ft. 10. County: \U.\So\"
11. Site coordinates (if known): prefer in decimal degrees.  12. Subdivision name (if any): V/A
Latitude (ex. 34.872312): 35, 72291 Longitude (ex77.556611): - 75, 08698
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):  700 Feet South of Bouth Read, Read, Read, Wilson Overty, M.
14. Proposed channel work (if any):
15. Recent weather conditions: O.5 inch Rain Event 12 hours ago
16. Site conditions at time of visit: NATURAL
17. Identify any special waterway classifications known:Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource WatersNutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation point? (YES NO If yes, estimate the water surface area: 2 As 15
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
22. Bankfull width: 20 ft. 23. Bank height (from bed to top of bank): 25 ft.
24. Channel slope down center of stream: Flat (0 to 2%)Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bendsFrequent meanderVery sinuousBraided channel
Instructions for completion of worksheet (located on page 2): Begin by determining the most appropriate ecoregion based on location, terrain, vegetation, stream classification, etc. Every characteristic must be scored using the same ecoregion. Assign points to each characteristic within the range shown for the ecoregion. Page 3 provides a brief description of how to review the characteristics identified in the worksheet. Scores should reflect an overall assessment of the stream reach under evaluation. If a characteristic cannot be evaluated due to site or weather conditions, enter 0 in the scoring box and provide an explanation in the comment section. Where there are obvious changes in the character of a stream under review (e.g., the stream flows from a pasture into a forest), the stream may be divided into smaller reaches that display more continuity, and a separate form used to evaluate each reach. The total score assigned to a stream reach must range between 0 and 100, with a score of 100 representing a stream of the highest quality.  Total Score (from reverse):  Comments:  Comments:
1110
Evaluator's Signature Date 11 July 2014  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

1

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

	**** *#	CHARACTERISTICS		ION POINT		SCORE
	322416		Constal	Piedmont	Mountain	The second second
	1	Presence of flow / persistent pools in stream	0-5	0 – 4	0 – 5	S
		(no flow or saturation = 0; strong flow = max points)				السد ا
***	2	Evidence of past human alteration	0-6	0 – 5	0 - 5	6
		(extensive alteration = 0; no alteration = max points)  Riparian zone				
J. 10	3	(no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0 - 5	4
1.		Evidence of nutrient or chemical discharges				•
	4	(extensive discharges = 0; no discharges = max points)	0-5	0-4	0 - 4	<b>3</b>
<b>W</b> .		Groundwater discharge				
A	5	(no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0 - 4	3
$ \Omega $		Presence of adjacent floodplain	0 4	0 4	0 0	A1 3
S.	6	(no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0 - 2	4'
**PHYSICA	7	Entrenchment / floodplain access	0-5	0-4	0-2	4
L	7	(deeply entrenched = 0; frequent flooding = max points)	0-3	0-4	0-2	4
	8	Presence of adjacent wetlands	0-6	0-4	0 - 2	, ,
	0	(no wetlands = 0; large adjacent wetlands = max points)	0 0			6
2	9	Channel sinuosity	0 – 5	0-4	0 - 3	4
\$24,9		(extensive channelization = 0; natural meander = max points)				
W.C	10	Sediment input	0-5	0-4	0 - 4	3
		(extensive deposition= 0; little or no sediment = max points)	TENERAL STATE			م المناود
	11	Size & diversity of channel bed substrate	NA*	0-4	0 - 5	NH
		(fine, homogenous = 0; large, diverse sizes = max points)  Evidence of channel incision or widening				·i
1	12	(deeply incised = 0; stable bed & banks = max points)	0-5	0 – 4	0 - 5	5
STABILITY	<u> </u>	Presence of major bank failures	0-5 0-5 0-5	0-5 0-5	1	
	13	(severe erosion = 0; no erosion, stable banks = max points)			0-5	4
BI		Root depth and density on banks				
V	14	(no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0 5	3'
2	T	Impact by agriculture, livestock, or timber production	0 5	0.4	0 5	21
1 r	15	(substantial impact =0; no evidence = max points)	0-5	0 – 4	0-5	4
	16	Presence of riffle-pool/ripple-pool complexes	0 – 3	0-5	0 – 6	Zaza i
	16	(no riffles/ripples or pools = 0; well-developed = max points)	0-3	0-3	0-0	Seas.
4	17	Habitat complexity	0-6	0 6	0-6	6.
	1,	(little or no habitat = 0; frequent, varied habitats = max points)	• •	0 0		6.
HABITAT	18	Canopy coverage over streambed	0-5	0-5	0 – 5	2
H		(no shading vegetation = 0; continuous canopy = max points)				_
\$ 1.00 \$ 1.00 \$ 1.00	19	Substrate embeddedness	NA*	0 – 4	0-4	NA
7.13		(deeply embedded = 0; loose structure = max)	The second of the second			
121 42	20	Presence of stream invertebrates (see page 4)	0 – 4	0 – 5	0-5	2
🔀		(no evidence = 0; common, numerous types = max points)  Presence of amphibians				<del></del>
2	21	(no evidence = 0; common, numerous types = max points)	0 – 4	0-4	0 – 4	2
Ĭ		Presence of fish	-			1 , 1
2	22	(no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0-4	4
BIOLOGY	,	Evidence of wildlife use	<u> </u>			<del>'</del> ,
i, Aut.	23	(no evidence = 0; abundant evidence = max points)	0-6	0-5	0-5	4
學演	Ven la	10.1 全点,11.1 11.1 11.1 11.1 11.1 11.1 11.1 11.	THE THE STATE OF	1000	100	
(水) (水)		Total Points Possible 7	1 100 7	100	100 6.55	1
17 10	MIT PAR		<b>第三种文件</b> 等方	TO BE LINE	10000000000000000000000000000000000000	82
7		TOTAL SCORE, (also enter on f	Tor hase have			UA

<sup>\*</sup> These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11

Date: 11 July 2014	Project/Site: ACP	Latitude: 35, 7229/
Evaluator: J. GAY	County: Wilson	Longitude: 78,08698
Total Points:  Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*  39  5	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other e.g. Quad Name: Lucana
:2		•

<b></b>				
A. Geomorphology (Subtotal = 1% )	Absent	Weak	Moderate	Strong
1 <sup>a.</sup> Continuity of channel bed and bank	0	1	2	(3)
2. Sinuosity of channel along thalweg	0	1	(2)	~-3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	<u>(2)</u>	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	(T)	2	3
7. Recent alluvial deposits	0	7	(2)	3
8. Headcuts	(0)	1	2	3
9. Grade control	(0)	0.5	1	1.5
10. Natural valley	(6)	0.5	1	1.5
11. Second or greater order channel	No	o = 0	Yes = 3 )	
a artificial ditches are not rated; see discussions in manual			<u> </u>	. p. p

artificial ditches are not rated; see discussions in manual

В.	Hydrology	(Subtotal =	11	١
,	113010100	(Oublotul :-	<b>y</b>	,

12. Presence of Baseflow	0	1	2	(3)	
13. Iron oxidizing bacteria	0	1	(2)	3	
14. Leaf litter	(1.5)	1	0.5	0	
15. Sediment on plants or debris	0	(0.5)	- 1	1.5	
16. Organic debris lines or piles	0	0.5	(1)	1.5	
17. Soil-based evidence of high water table?	N	No = 0		/ Yes = 3 )	
O Di I (O II I I A A A A				<i>A</i> *	

C. Biology (Subtotal = <u>lb ,5</u> )		La rask-arker			
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	(9)	0.5	1	1.5	
24. Amphibians	0	0.5	(12	1.5	
25. Algae	0	0.5	CI	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:

swi0013

- swio 011 - swio 012



Waterbody swio011 facing west upstream.



Waterbody swio011 facing east downstream.

### Environmental Field Surveys Waterbody Photo Page



Waterbody swio011 facing south across bank.

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

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ww	1
1 1 1 1 1	1
	1
لسسا	ı



Provide the following information for the stream reach under	ar accessment.
1. Applicant's name: Dominion	2. Evaluator's name: J.GAU
3. Date of evaluation: 11 Tuly. 7014	4. Time of evaluation: 1155
5. Name of stream: UT to Marsh Swant	6. River basin: Neuse
7. Approximate drainage area: 30 ac.	8. Stream order:
9. Length of reach evaluated: 5() ft.	10. County: Wilson
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): NA
	Longitude (ex77.556611): 78, 08 705
Method location determined (circle): GPS Topo Sheet Ortho (A 13. Location of reach under evaluation (note nearby roads and learning)	erial) Photo/GIS Other GIS Other
14. Proposed channel work (if any):	<b>,</b>
15. Recent weather conditions: 0.5 inch Zain	Event win last 18 hours
16. Site conditions at time of visit:	
. *	Section 10Tidal WatersEssential Fisheries Habitat
	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
	oint? (YES) NO If yes, estimate the water surface area: 1.5 ac.
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 45 % Agricultural % Cleared / Logged % Other (
22. Bankfull width: 10 Feet	23. Bank height (from bed to top of bank): 0.5 For T
	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 concomment section. Where there are obvious changes in the chainto a forest), the stream may be divided into smaller reaches t reach. The total score assigned to a stream reach must range highest quality.	2): Begin by determining the most appropriate ecoregion based on characteristic must be scored using the same ecoregion. Assign points egion. Page 3 provides a brief description of how to review the lect an overall assessment of the stream reach under evaluation. If a ditions, enter 0 in the scoring box and provide an explanation in the tracter 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 stream.
Evaluator's Signature  This channel evaluation form is intended to be used only a	Date 11 July 7014  Is 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.

100

	##	ANT CHARACHERISHIGS	ECOREG Coastal	ION POINT	RANGE	SCORE
	7997-0-	Presence of flow / persistent pools in stream			0-5	A STATE OF THE PARTY OF THE PAR
	1	(no flow or saturation = 0; strong flow = max points)	0-5	0-4	0-5	Z
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	₩0 - S	5
	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 .
AL!	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	3.
SIC	6	. Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0 – 4	0-4	0-2	4
*PHYSIC	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	6.
	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	4 -
	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	0
*STABILITYS	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	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
II A I	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	1
HABITAT.	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	1
50	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0 – 4	0-4	0-4	Ô
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	4
	i di kada	Total Points Possible	1002	\$ 4100	- 100 ·	ATT PLAN
		WOTALSCORD (also enter on a	irst page)			66

<sup>\*</sup> These characteristics are not assessed in coastal streams.

SW10012 NC DWQ Stream Identification Form Version 4.11 Latitude: 35,72268 Date: Project/Site: Longitude: 78.08705 Evaluator: County: **Total Points:** Stream Determination (circle one) Other Stream is at least intermittent Ephemeral Intermittent Perennial e.g. Quad Name: Lucama if ≥ 19 or perennial if ≥ 30\* A. Geomorphology (Subtotal = Weak Strong Absent Moderate 1<sup>a.</sup> Continuity of channel bed and bank 0 (1) 3 2. Sinuosity of channel along thalweg 0 2 3 3. In-channel structure: ex. riffle-pool, step-pool, 0 2 1 3 ripple-pool sequence 0 2 3 4. Particle size of stream substrate 5. Active/relict floodplain (2) 3 6. Depositional bars or benches <u>(0</u> 1 2 3 (<u>0</u>) 7. Recent alluvial deposits 1 2 3 (0) 8. Headcuts 2 3 9. Grade control ( Ö) 0.5 1 1.5 (~6) 0.5 10. Natural valley 1 1.5 No = 011. Second or greater order channel Yes = 3artificial ditches are not rated; see discussions in manual B. Hydrology (Subtotal = 12. Presence of Baseflow 0 3 13. Iron oxidizing bacteria 0 1 3 14. Leaf litter 1.5 0.5 0 15. Sediment on plants or debris 0 0,È 1.5 16. Organic debris lines or piles 0 0.5 1.5 No = 0 17. Soil-based evidence of high water table? Yes = 3 C. Biology (Subtotal = 18. Fibrous roots in streambed 0 (3) 19. Rooted upland plants in streambed 2 1 0 20. Macrobenthos (note diversity and abundance) 0, 2 3 21. Aquatic Mollusks 2 3 22. Fish 0.5 1 1.5 23. Crayfish 1 0.5 1.5 24. Amphibians 0.5 1.5 25. Algae 0.5) 1.5 FÁCW = 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:

(A)

bwiopiá

TESWIO!011





Waterbody swio012 facing east downstream.

### Environmental Field Surveys Waterbody Photo Page



Waterbody swio012 facing south across bank.

Swi	p.001
<b>-</b> /	r /-/- I

USACE AID# DWQ # Site # (indicate on attache	d map)





Provide the following information for the stream reach und	ler assessment:
1. Applicant's name: Dominion	2. Evaluator's name: ESI - J. Harbour
3. Date of evaluation: 7 - 7 - 14	4. Time of evaluation:
5. Name of stream: <u>UNT to Contentnea Creek</u>	6. River basin: Newse
7. Approximate drainage area: 10 ac	8. Stream order: 15th
9. Length of reach evaluated: 50'	10. County: Wilson
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): N A
Latitude (ex. 34.872312): 35.70874	Longitude (ex77.556611): -78.6970)
Method location determined (circle) GPS Topo Sheet Ortho (A	
13. Location of reach under evaluation (note nearby roads and	
on ROCK Ridge school Rd be	tibem trignum " sacre Roads
14. Proposed channel work (if any): TBD	
	y5
\	adjacent to corn field
	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation p	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: 20% Residential	% Commercial% Industrial% Agricultural
Too of Bank 30% Forested	% Cleared / Logged% Other (
Top of Bank  22. Bankfull width:  5 ft.	
	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity: X 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 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.	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 tracter 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): 19 Commen	nts: OHWM width: 3 ft.
Evaluator's Signature	Date 7-7-14
	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.

7 %	a vij			ION POINT		SCOPE
	4.5	CHARACTERISTICS	Coastal 🤻	Piedmont	* Mountain 🕏	SCOKE
* .	1	Presence of flow / persistent pools in stream	0-5	0-4	·· 0-5	1.
9.36	<u> </u>	(no flow or saturation = 0; strong flow = max points)  Evidence of past human alteration				<u> </u>
, J	2	(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	
PHYSICAL #	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	
VSIC	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0 – 4	0-4	0-2	<u>∂</u>
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	D
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0 – 4	0-3	0
	10	Sediment input  (extensive deposition= 0; little or no sediment = max points)	0 – 5	0-4	0-4	1.
and The	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0 – 5	AU
X	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0 – 4	0-5	み
STABILITY	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0 – 5	0-5	0-5	2
[AB]	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	1
12.5	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0-3	0 – 5	0 – 6	
TAT	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	0
HABITAT	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	1.
500 600 70	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	0_
	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0 – 4	0 – 4	0-4	0
RIOLOGY	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
	23	Evidence of wildlife use  (no evidence = 0; abundant evidence = max points)	0-6	0 5	0-5	
		Total Points Possible	100	100)	100	THE PARTY
7		TOTAL SCORE (also enter on	first page)			1.19

<sup>\*</sup> These characteristics are not assessed in coastal streams.

Swip-001 NC DWQ Stream Identification Form Version 4.11 Latitude: 35. 70874 Project/Site: ACP Longitude: 78.09'787 Evaluator: J. HArbour County: Wylson **Total Points:** LUCAMA Stream Determination (circle one) 15.5 Stream is at least intermittent Ephemeral Intermittent Perennial e.g. Quad Name: if ≥ 19 or perennial if ≥ 30\* A. Geomorphology (Subtotal = 6.5 Absent Weak Moderate Strong 1a. Continuity of channel bed and bank 2. Sinuosity of channel along thalweg 2 3 3. In-channel structure: ex. riffle-pool, step-pool, 2 3 1 ripple-pool sequence 4. Particle size of stream substrate 0 2 3 0 5. Active/relict floodplain 2 3 6. Depositional bars or benches 0 2 3 7. Recent alluvial deposits 2 3 8. Headcuts 0) 1 3 9. Grade control 1.5 0 1 10. Natural valley 0 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 = 12. Presence of Baseflow 0 1 <u>(0</u> 13. Iron oxidizing bacteria 1 2 3 14. Leaf litter 1.5 0.5 15. Sediment on plants or debris Ō 0.5 1.5 16. Organic debris lines or piles 0 0.5 4 1.5 17. Soil-based evidence of high water table? No = 0Yes = 3 C. Biology (Subtotal = 18. Fibrous roots in streambed 1 0 2 19. Rooted upland plants in streambed 0 0 20. Macrobenthos (note diversity and abundance) 2 3 1 21. Aquatic Mollusks 0) 1 2 3 22. Fish 0) 0.5 1 1.5 23. Crayfish 0.5 1.5 24. Amphibians  $(\mathbf{u})$ 0.5 1.5 25. Algae 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. SLATE OHWM, but reflect that fact. Sketch:

SWIPOW 1

ROCK Ridge School Road

#### Environmental Field Surveys Waterbody Photo Page



Waterbody swip001 facing north upstream.



Waterbody swip001 facing south downstream.

Photo Sheet 1 of 2

### Environmental Field Surveys Waterbody Photo Page



 $Waterbody\ swip 001\ facing\ southwest\ across\ channel$ 



# STREAM QUALITY ASSESSMENT WORKSHEET Sいんのうし ormation for the stream reach under assessment:



1 Tovide the following intof mation for the stream reach und	_
1. Applicant's name: Dominion	2. Evaluator's name: Natural Resource Group
3. Date of evaluation: $\frac{2/9/2015}{2}$	4. Time of evaluation: 12:45 PM
5. Name of stream: UT to Contentne Creek	6. River basin:
7. Approximate drainage area 25 acres	8. Stream order: \(\frac{5t}{}\)
9. Length of reach evaluated: ~ 100 Feet	10. County: Wilson
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
Latitude (ex. 34.872312): 35° 42′24, 96 " N	Longitude (ex. $-77.556611$ ): $78^{\circ}$ 05 \(^1\) 51.01" $\[mu]$
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: NO precipitation	within previous 48-615
16. Site conditions at time of visit: Normal	,
17. Identify any special waterway classifications known:	JASection 10 NA Tidal Waters NA Essential Fisheries Habitat
NA Trout Waters NA Outstanding Resource Waters NA	Nutrient Sensitive Waters <u>NA</u> Water Supply Watershed <u>NA</u> (I-IV)
18. Is there a pond or lake located upstream of the evaluation p	point? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES	20. Does channel appear on USDA Soil Survey YES NO
21. Estimated watershed land use:% Residential	% Commercial% Industrial 30_% Agricultural
	% Cleared / Logged% Other ()
22. Bankfull width: 5 FI	23. Bank height (from bed to top of bank): 3 H
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	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 nditions, enter 0 in the scoring box and provide an explanation in the haracter of a stream under review (e.g., the stream flows from a pasture that display more continuity, and a separate form used to evaluate each the between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 39 Commen	nts: Stream Flows through a colvert
under Leonard Rosa. Stream Flows 1	mts: Stream Flows through a Culvert through a wetland just before flowing into more been manipulated and does not have
good access to a Floodplain. Some gart	onge :5 located throughout the stream extent.
Evaluator's Signature ole Legis	Date 2-9-15
This channel evaluation form is intended to be used only	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

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

	341001	ECODEC	NAN DOLA	EB/WG5	
#	CHARACTERISTICS	Coastal	HON POIN  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	Period C - 41 to 1	0-6	0-5	0-5	1
3	D:	0-6	0-4	0 – 5	2
4	Evidence of nutrient on the size 1 4: 1	0-5	0-4	0-4	4
TY.	Croundwater dischause	0-3	0-4	0-4	2
PHYSICAL 6	Drocopos of adjacent flordate!	0-4	0-4	0-2	0
<b>E</b> 7	Fatasashassat / Assat 1	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	2
9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0 – 5	0-4	0-3	0
10	Sediment input  (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	3
11	(fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0-5	NA
12	(deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	3
13 14 14 14 14 14 14 14 14 14 14 14 14 14	(severe erosion = 0; no erosion, stable banks = max points)	0-5	0 – 5	0-5	3
14	(no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	3
15	(substantial impact =0; no evidence = max points)	0-5	0-4	0-5	4
16	(no riffles/ripples or pools = 0; well-developed = max points)	0 – 3	0-5	0-6	}
17 17 17 17 18 17 17 17 17 17 17 17 17 17 17 17 17 17	(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	NA
<u>20</u>	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	0
20 21 22	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	0
22 <b>M</b>	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	2
	Total Points Possible	100	100	100	
	TOTAL SCORE (also enter on fig	st page)		9.00 (19.00) 11.00 (19.00)	39

<sup>\*</sup> 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

SWICOOI NC DWQ Stream Identification Form Version 4.11

Date: 2/9/2015	Project/Site: ACP	Latitude: 35°42'24_96"N
Evaluator: Natural Resource Group	county: Wilson	Longitude: 78° 05' 5) . 01 "W
Total Points:  Stream is at least intermittent	Stream Determination (circle one) Ephemeral (Intermittent) Perennial	Other e.g. Quad Name;

A. Geomorphology (Subtotal = 10)	Absent	Weak	Moderate	Strong
1 <sup>a.</sup> Continuity of channel bed and bank	0	1	2	(3)
Sinuosity of channel along thalweg	0	<u> </u>	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	0	4	3
Particle size of stream substrate	0	0	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

B. Hydrology	(Subtotal =	8,5)
D. Hydrology	(Subtotal –	() ~ )

17. Soil-based evidence of high water table?	N	0 = 0	Yes	= 3
16. Organic debris lines or piles	0	0.5	1	1,5
15. Sediment on plants or debris	0	0.5	<u> </u>	1.5
14. Leaf litter	1.5	1	0.5	0
13. Iron oxidizing bacteria		1	2	3
12. Presence of Baseflow	0	1	2	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
20. Macrobenthos (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	<b>©</b>	1	2	3
22. Fish	0	0.5	0	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	<b>8</b>	0.5	1	1.5
26. Wetland plants in streambed		(ACW = 0.75). (	DBL = 1.5 Other =	0

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

Notes:

Sketch:

Ske



Waterbody SWIC001 facing north upstream



Waterbody SWIC001 facing east across



Waterbody SWIC001 facing south downstream

**Open Waterbody Data Sheet** 

Opon materio	y Bata Onloot								_
Survey Descripti	on								
Project Name:		Waterbody N	lame:		V	Waterbody ID:		Date:	_
Atlantic Coast Pip	eline	Unnamed	Pond		(	OWIC001		2/9/2015	
State:	County:		Company:		Crew	Member Initials:	Photos:		_
North Carolina	Wilson		NRG		CR,	AS	OWIC0	01_001	
Tract Number(s):			Nearest Milepost	:	/	Associated Wetland	ID(s):		-
19-044			367.2		,	WWIC001			
Survey Type: (check one)	⊠Centerline	e □R	Re-Route	□Access Roa	ad	□Other:			
Physical Attribut	tes								
Waterbody Type: (check one) ⊠Sto	ck Pond ☐ Natural	Pond 🗆 La	ke   Reservoir	☐ Impoundme	ent 🗆	Oxbow   Other:			
Hydrologic Regime:	□ Permanently	Flooded $\square$	Semipermanently	Flooded	Seas	onally Flooded	Temporari	ly Flooded	
OHWM Height:	OHWM Indic		☐ Clear lir on bank	ne □She	lving	□Wrested	□Sco	uring □Water staining	-
<u>6</u> ft.	□Bent vegeta	, matted, or m tion		□Litte debris	er and	vegetation  ☐Abrupt plant community cha		naracteristic change	
Depth of Water:		Bank heig	ht (average):			Bank slope (avera	age):		_
	_ft.		<u>12</u> f	i.			40 degree	es	
Qualitative Attrib	outes								Ī
Water Appearance: (check one)		Clear □T	urbid □Shee		urface m	□ Algal □ C mats	Other:		
Substrate: (check all that apply)	□ Bedrock □ Bo	oulder $\Box$ Co	obble   Gravel	⊠ Sand	⊠ Sil	t/ clay	☐ Other:		_
% of Substrate:	%	%	%	% <u>20</u> %	80	<u> </u>		%	
Width of Riparian Zo	ne: Vegetative		⊠ Trees:		⊠ Sap	olings/Shrubs:	⊠ Her	bs	_
ft. N/A⊠	Avg. DBH	of Dominants	<b>s</b> : <u>8</u> in.		_ <u>2</u> _in				
Dominant Bank Vege									_
Loblolly Pine, Swe	eet-Gum, Red M	laple, Giant	t Cane						
Aquatic Habitats (ex:	submerged or emerged aq	uatic vegetation, c	overhanging banks/roots,	leaf packs, large su	ıbmerged	d wood, riffles, deep pools, et	tc.):		
Aquatic Organisms (	Observed (list):								_
Turtle and minnov									
T&E Species Observ	ed (list):								_
None									
Disturbances (ex: live None	stock access, manure	in waterbody, w	vaste discharge pipes)	:					
									_
Waterbody is: (check one)	☐ Natural		Artificial, man-mac	de ⊠ Mani	ipulate	d			
Waterbody Quality a (check one)	: □ High		Moderate	□ Low					

Waterbody	ID
OWIC001	

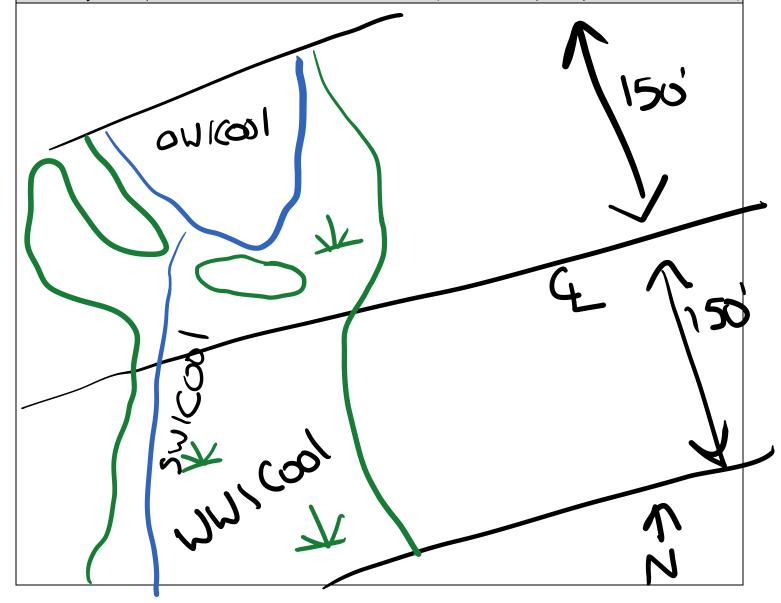
<sup>a</sup> **High Quality:** Natural, natural bank vegetation around entire waterbody; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance by livestock or man.

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

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

Notes:

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





Open waterbody OWIC001 facing east

USACE	A ID#
USACE	AHJ#

DWO	#
$\nu \sim$	"

Cita	44
one	tt

(indicate on attached map)





### STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for the stream reach under assessment:

This channel evaluation form is intended to be used only	Date 2/27/15 as a guide to assist landowners and environmental professionals in Corps of Engineers to make a preliminary assessment of stream
Evaluator's Signature Told My	Date_2 27 15
Forested wetlands abotting channel.	
Total Score (from reverse): 44 Commer	its: Stream origin lacke well-defined bad bank - end of corridor - with a few roots along banks
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.	aditions, 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
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the econ characteristics identified in the worksheet. Scores should re-	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
25. Channel sinuosity:StraightOccasional bends	➤ Frequent meanderVery sinuousBraided channel
24. Channel slope down center of stream:Flat (0 to 2%)	★ Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
22. Bankfull width: 3	23. Bank height (from bed to top of bank): 1.5
<u>~\°</u> % Forested	% Cleared / Logged% Other (
	% Commercial% Industrial% Agricultural
19. Does channel appear on USGS quad map? <b>ES</b> NO	20. Does channel appear on USDA Soil Survey? VES NO
	point? VES NO If yes, estimate the water surface area:
	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
16. Site conditions at time of visit: claudy, 25° F	Section 10Tidal WatersEssential Fisheries Habitat
•	
14. Proposed channel work (if any):	- 1 - nu 1
Approximately osmiler south of L	•
13. Location of reach under evaluation (note nearby roads and	
Method location determined (circle): PS Topo heet Ortho(	Aerial) Photo GIS Other GIS Other
	Longitude (ex. –77.556611):
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
9. Length of reach evaluated: ~ 400'	10. County: Wilson County
5. Name of stream: SWIB100 - UNT +5 Contentuea  Creek  7. Approximate drainage area:	8. Stream order: 157
	6. River basin: Neuse - Check ~
1. Applicant's name: Dominion   ACP  3. Date of evaluation: 2/27/15	<b>)</b>
1 Applicant's name D IACP	2. Evaluator's name: Topo Preuninger

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.

ш.	# CHARACTERISTICS		ECOREGION POINT RANGE		
#	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	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	2
<b>J</b> 5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	3
5 6 7	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	
<b>E</b> 7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	2
8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	3
9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	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	3
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 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	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	2
18 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	<b>S</b>
_ 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	*********
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	e de la companya de l
	Total Points Possible	100	100	100	
	TOTAL SCORE (also enter on fi	rst page)			44

<sup>\*</sup> 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

SWIB100

Date: 2 27 15	Project/Site: 🎾	ominion/ACP	Latitude:	Latitude:	
Evaluator: Toon Preuninger	County: Will	son	Longitude:	•	
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*   23.25		ination (circle one) ermittent Perennial	Other e.g. Quad Name:		
A. Geomorphology (Subtotal = $9,5$ )	Absent	Weak	Moderate	Strong	
1 <sup>a</sup> Continuity of channel bed and bank	0	9	<del>)</del> 2	3	
2. Sinuosity of channel along thalweg	0	1	Ø	3	
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	Ð	2	3	
Particle size of stream substrate	0	0	2	3	
5. Active/relict floodplain	0	1)	2	3	
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	0	0.5	<b>D</b>	1.5	
10. Natural valley	0	(0.5)	11	1.5	
11. Second or greater order channel	( <u>N</u>	o = 0)	Yes	= 3	
<sup>a</sup> artificial ditches are not rated; see discussions in manual					
B. Hydrology (Subtotal =		,			
12. Presence of Baseflow	0	1	(2)	3	
13. Iron oxidizing bacteria	0	1	2	3	
14. Leaf litter	1.5	①	0.5	0	
15. Sediment on plants or debris	0	0.5	1	1.5	
16. Organic debris lines or piles	0	(0.5)	1	1.5	
17. Soil-based evidence of high water table?	N <sub>1</sub>	o = 0	( Yes	=3)	
C. Biology (Subtotal = 7,25)					
18. Fibrous roots in streambed	(3)	2	11	0	
19. Rooted upland plants in streambed	(3)	2	11	0	
20. Macrobenthos (note diversity and abundance)	0	11	2	3	
21. Aquatic Mollusks	6	1	2	3	
22. Fish	(0)	0.5	1	1.5	
23. Crayfish	(0)	0.5	1	1.5	
24. Amphibians	0	(0.5)	1	1.5	
25. Algae	<b>©</b>	0.5	1	1.5	
26. Wetland plants in streambed			BL = 1.5 Other = 0	)	
*perennial streams may also be identified using other methods				1 -	
Notes: Discontinuous bed/bank at or gin - beco	mes more well à	lenuel for banita	rean edge of	Corridol	
Rain Snow in last 24 hours					
Sketch:	X	CB wetle	ribias	later Late	
N CB	-150 - 14	150			



Waterbody SWIB100 facing northwest upstream



Waterbody SWIB100 facing northeast across



Waterbody SWIB100 facing southeast downstream



SWIB100 facing north upstream



SWIB100 facing west across stream



SWIB100 facing south downstream

USACE AID#	
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1	)	w	/(	)	#
L	,	*	' \	,	TT

Site	#	

(indicate on attached map)



### STREAM OUALITY ASSESSMENT WORKSHEET



SW	1C 002
Provide the following information for the stream reach un	
1. Applicant's name: Dominion	
3. Date of evaluation: 2/20/2015	4. Time of evaluation: 10: 20 AM
5. Name of stream: Contentnes Creek	6. River basin: Neu Se
7. Approximate drainage area: 500 acfos	8. Stream order: 3rd
9. Length of reach evaluated: 200 Feet	10. County: Wison
11. Site coordinates (if known): prefer in decimal degrees.  Latitude (ex. 34.872312): 35° 41° 30.30° N	12. Subdivision name (if any):  Longitude (ex77.556611): 78°06' 15.94" W
Method location determined (circle): GPS Topo Sheet Ortho	
14. Proposed channel work (if any): None	
15. Recent weather conditions: NO secent prec:	pitation
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	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
	% Cleared / Logged% Other ()
22. Bankfull width: 45 Feet	23. Bank height (from bed to top of bank): 12 Feet
	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 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 nditions, enter 0 in the scoring box and provide an explanation in the haracter of a stream under review (e.g., the stream flows from a pasture that display more continuity, and a separate form used to evaluate each the between 0 and 100, with a score of 100 representing a stream of the
	the chanel which would provide good
fish habitat. The fulbid water	Made Fish and benthic inverteblete determination
Evaluator's Signature Cok Reagan	Date 2/20/15

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	ECOREO Coastal	HON POINT Piedmont	FRANGE 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	6
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	5
<b>AL</b> 5	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
EHA 7	Entrenchment / floodplain access	0-5	0-4	0-2	3
8	(deeply entrenched = 0; frequent flooding = max points)  Presence of adjacent wetlands	0-6	0-4	0-2	2
9	(no wetlands = 0; large adjacent wetlands = max points)  Channel sinuosity	0-5	0-4	0-3	2
10	(extensive channelization = 0; natural meander = max points)  Sediment input	0-5	0-4	0=4	
11	(extensive deposition= 0; little or no sediment = max points)  Size & diversity of channel bed substrate	NA*	0-4	0 = 5	5
12	(fine, homogenous = 0; large, diverse sizes = max points)  Evidence of channel incision or widening	0-5	0-4	0-5	NA 3
13 13 14 14 15 15 15 15 15 15 15 15 15 15 15 15 15	(deeply incised = 0; stable bed & banks = max points)  Presence of major bank failures	0-5	0-5		3
	(severe erosion = 0; no erosion, stable banks = max points)  Root depth and density on banks	0-3	A SUBSECTION OF THE SUBSECTION	0-5	
	(no visible roots = 0; dense roots throughout = max points)  Impact by agriculture, livestock, or timber production		0-4	0 - 5	2 
	(substantial impact =0; no evidence = max points)  Presence of riffle-pool/ripple-pool complexes	0-5	0 - 4	0-5	4
16	(no riffles/ripples or pools = 0; well-developed = max points)  Habitat complexity	0-3	0-5	0-6	3
LV 17	(little or no habitat = 0; frequent, varied habitats = max points)  Canopy coverage over streambed	0-6	0-6	0-6	4
$\left\{ \left  \frac{18}{18} \right  \right\}$	(no shading vegetation = 0; continuous canopy = max points)  Substrate embeddedness	0-5	0 – 5	0-5	3
19	(deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	NY
20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	1
21 22	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0 – 4	0-4	0
5 22   <b>2</b> 22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	1
23	Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0 – 6	0-5	0-5	5
	Total Points Possible	100	100	100	
	TOTAL SCORE (also enter on fi	rst page)	4125 1819	187	69

<sup>\*</sup> 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

SWICOOR NC DWQ Stream Identification Form Version 4.11

Date: 2/20/2015	Project/Site: A(	2P	Latitude: 35°	41' 30.30" N	
Evaluator: Natural Resource Group	County: W.1500		Longitude: 78	3°06' 15.94"W	
Total Points: Stream is at least intermittent if $\geq$ 19 or perennial if $\geq$ 30*	Stream Determin Ephemeral Inter	nation (cir <u>cle one)</u> rmittent (Perennia)	Other e.g. Quad Name:		
A. Geomorphology (Subtotal = $22.5$ )	Absent	Weak	Moderate	Strong	
1 <sup>a.</sup> 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	1	2	3	
Particle size of stream substrate	0	1	<b>Ø</b>	3	
Active/relict floodplain	0	1	<b>②</b>	3	
6. Depositional bars or benches	0	1	2	3	
7. Recent alluvial deposits	0	0	2	3	
8. Headcuts	0	1	<b>②</b>	3	
9. Grade control	0	0.5	<b>①</b>	1.5	
10. Natural valley	0	<b>(0.3</b> )	1	1.5	
11. Second or greater order channel	No	= 0	es =	=3)	
artificial ditches are not rated; see discussions in manual					
B. Hydrology (Subtotal = 10.5)		*			
12. Presence of Baseflow	0	1	2	➂	
13. Iron oxidizing bacteria	0	1	2	3	
14. Leaf litter	(T.5)	1	0.5	0	
15. Sediment on plants or debris	0	0.5	8	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	<b>₃</b> >	
C. Biology (Subtotal = 9.75 )					
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	0	2	3	
21. Aquatic Mollusks	0	0	2	3	
22. Fish	0	0.5	1	1.5	
23. Crayfish	6	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	ds. See p. 35 of manual.				
Notes:					
Sketch:	Xel Cet C	Photo &			



Waterbody SWIC002 facing north upstream



Waterbody SWIC002 facing east across



Waterbody SWIC002 facing south downstream

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ite on attached map)



4	r

SWICC	
Provide the following information for the stream reach un	
1. Applicant's name: Dominion	2. Evaluator's name: Natural Resource Group
3. Date of evaluation: 2/21/2015	4. Time of evaluation: 1:15 PM
5. Name of stream: <u>Contentnea</u> Creek	6. River basin: Neuse
7. Approximate drainage area: 500 acces	8. Stream order: 3 <sup>Cd</sup>
9. Length of reach evaluated: Zoo Fee+	10. County: <u> </u>
11. Site coordinates (if known): prefer in decimal degrees.	
Latitude (ex. 34.872312): 35° 41' 28. 728" N	Longitude (ex77.556611): 75° 06' 22.741" W
Method location determined (circle): GPS Topo Sheet Ortho (  13. Location of reach under evaluation (note nearby roads and n/a	(Aerial) Photo/GIS Other GIS Otherlandmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): None	
15. Recent weather conditions: No recent pre	cipitation
16. Site conditions at time of visit: Normal	1
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 p	point? YES (O) 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
100% Forested	% Cleared / Logged% Other (
22. Bankfull width: 35 Feet	
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 econocharacteristics identified in the worksheet. Scores should recharacteristic 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 reach. The total score assigned to a stream reach must range highest quality.	e 2): Begin by determining the most appropriate ecoregion based or 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 the between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 69 Commer other woody debris within the change The furbil water made Fish and be	nts: Stream has several downed trees and nel unith would provide good firm habtent. eathic invertibleate determination sifficult
Evaluator's Signature Cole Rengan	Date 2/21/2015
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 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	ECOREG Coastal	ION POIN Piedmont	T 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	5
2	Evidence of past human alteration  (extensive alteration = 0; no alteration = max points)	0-6	.0 = 5	0-5	6
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	5
5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	3
5   5   6   6   7	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0-4	0-2	2
풀 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	2
9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0 – 3	a
10	Sediment input  (extensive deposition= 0; little or no sediment = max points)	0 ÷ 5	0-4	0-4	5
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 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	3
17	Habitat complexity (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	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 22	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0 – 4	0-4	B
22	Presence of fish  (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	<u> </u>
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 fi	rst page)			69

<sup>\*</sup> 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

SUICOOY NC DWQ Stream Identification Form Version 4.11

NC DWQ Stream Identification Form	i version 4.11				
Date: 2/21/2015		ACP	Latitude: 35	° 41' 28.728", 06 *22.741" W	
Evaluator: Natural Resource Group	County: ₩	ison	Longitude:78	06 t22,741"W	
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*		nation (circle one) rmittent (Perennial)	Other e.g. Quad Name:		
A. Geomorphology (Subtotal = 22.5)	Absent	Weak	Moderate	Strong	
1 <sup>a</sup> Continuity of channel bed and bank	0	1	2	3	
2. Sinuosity of channel along thalweg	0	1	2	3	
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	<u> </u>	
4. Particle size of stream substrate	0	1	<b>(2</b> )	3	
5. Active/relict floodplain	0	1	<u> </u>	3	
6. Depositional bars or benches	0	1	Ø	3	
7. Recent alluvial deposits	0	0	2	3	
8. Headcuts	0	1	<b>②</b>	3	
9. Grade control	0	0.5	<u>(1)</u>	1.5	
10. Natural valley	0	0.5	1	1.5	
11. Second or greater order channel	No	= 0	Yes		
artificial ditches are not rated; see discussions in manual					
B. Hydrology (Subtotal = 10.5)		*			
12. Presence of Baseflow	0	1	2	<b>(3</b> )	
13. Iron oxidizing bacteria	0	1	<b>②</b>	3	
14. Leaf litter	13	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	=3)	
C. Biology (Subtotal = <u>9.75</u> )					
18. Fibrous roots in streambed	3	2	1	0	
19. Rooted upland plants in streambed	3	2	1	0	
20. Macrobenthos (note diversity and abundance)	0	Ó	2	3	
21. Aquatic Mollusks	0	B	2	3	
22. Fish	0	0.5	<u>(1)</u>	1.5	
23. Crayfish	0	0.5	1	1.5	
24. Amphibians	Ø	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				
Notes:					
Sketch:	> Cr Flow -7 Photo			^ /	



Waterbody SWIC004 facing west upstream



Waterbody SWIC004 facing east downstream



Waterbody SWIC004 facing north across

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DWQ#
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Site #	(indicate or	n attached m
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Provide the following information for the stream reach under assessment:

1 rovide the following information for the stream reach und	
1. Applicant's name: Dominion	2. Evaluator's name: Natural Resource Goup
3. Date of evaluation: 2/21 / 2015	4. Time of evaluation: 12:45 PM
5. Name of stream: UT to Content near Creek	6. River basin: Neuse
7. Approximate drainage area: 10 Acre 5	8. Stream order: 15+
9. Length of reach evaluated: 100 Feet	10. County: WISON
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any):
Latitude (ex. 34.872312): 35° 41° 77.10° N	Longitude (ex77.556611): 78° 06' 25.67" W
Method location determined (circle): Topo Sheet Ortho (A  13. Location of reach under evaluation (note nearby roads and l  n/a	Aerial) Photo/GIS Other GIS Other
14. Proposed channel work (if any): None	
15. Recent weather conditions: No recent precin	2 tation
16. Site conditions at time of visit: No (ma)	
17. Identify any special waterway classifications known:	Section 10 NR Tidal Waters NR Essential Fisheries Habitat
NA Trout Waters NA Outstanding Resource Waters	Nutrient Sensitive Waters Nature Supply Watershed NA (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
21. Estimated watershed land use:% Residential	% Commercial% Industrial% Agricultural
©% Forested	% Cleared / Logged% Other ()
22. Bankfull width: 4 Fee+	23. Bank height (from bed to top of bank): 3,5 Fee+
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 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
Total Score (from reverse): 61 Comment Contentner Creekant recieves where in	is: Epherneral Stream that Flows into
Evaluator's Signature Cole Reagen	Date Z-21-15
gathering the data required by the United States Army (quality. The total score resulting from the completion of	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 change – version 06/03. To Comment, please call 919-876-8441 x 26.

#	CHARACTERISTICS	ECOREG Coastal	ION POINT Pledmont	FRANGE Mountain	SCORE
1	Presence of flow / persistent pools in stream	0-5	0-4	0-5	7
	(no flow or saturation = 0; strong flow = max points)	0 0	2	0 5	2
2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5,	6
3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5	1
4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0-5	0-4	0-4	5
5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	3
5 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	2
8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0 – 4	0-2	4
9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0 – 5	0-4	0-3	4
10	Sediment input  (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	5
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	5
13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0-5	0-5	5
13	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	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	<u>l</u>
17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	a
10	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)  Substrate embeddedness	0-5	0-5	0-5	4
19	(deeply embedded = 0; loose structure = max)  Presence of stream invertebrates (see page 4)	NA*	0-4	0-4	NA
20	(no evidence = 0; common, numerous types = max points)  Presence of amphibians	0-4	0-5	0 – 5	0
21 22	(no evidence = 0; common, numerous types = max points)  Presence of fish	0-4	0-4	0-4	<u> </u>
	(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	2
	Total Points Possible	100	100	100	
	TOTAL SCORE (also enter on fin	rst page)			6

<sup>\*</sup> 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

SWICO03

NC DWQ Stream Identification Form Version 4.11

Date: 2/21/2015	Project/Site: ACP	Latitude: 35°41'27.10"N
Evaluator: Natural Resource Group	county: Wilson	Longitude: 78°06'25,67'W
Total Points: Stream is at least intermittent if $\geq$ 19 or perennial if $\geq$ 30*	Stream Determination (circle one)  Ephemeral Intermittent Perennial	Other e.g. Quad Name:

A. Geomorphology (Subtotal = $8,5$ )	Absent	Weak	Moderate	Strong
1 <sup>a.</sup> Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	<u>.</u> ①	2	3
Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	<u> </u>	2	3
6. Depositional bars or benches	(b)	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	Ø	0.5	1	1.5
10. Natural valley	0	<b>0</b> .5	1	1.5
11. Second or greater order channel	440	=0	Yes:	= 3

B. Hydrology	(Subtotal =	3.5	)
D. 11, 41,010,91	Captotal		,

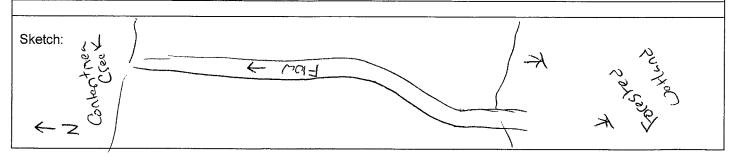
12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	0	2	3
14. Leaf litter	1.5	1	<b>(</b> 0.5)	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No.	= 0	Yes:	= 3

					. •	
C.	Biology	(Sul	ototal	=_	4	)
					-	

18. Fibrous roots in streambed	3		1	0
19. Rooted upland plants in streambed	3	<b>0</b>	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	<b>O</b>	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)			

<sup>\*</sup>perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:





Waterbody SWIC003 facing southwest upstream



Waterbody SWIC003 facing northwest downstream



Waterbody SWIC003 facing northwest across

HOACE AID#		
USACE AID#	USACE AID#_	

DW	$\sim$	44
1.7 77	v	#

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



STREAM QUALITY AS	SSESSMENT WORKSHEET
Provide the following information for the stream reach und	
1. Applicant's name: Pominion	2. Evaluator's name: EST (Roper, Markham)
3. Date of evaluation: 5/19/15	4. Time of evaluation: 8.50am
5. Name of stream: UNT to CONTENTNER CRUIC	6. River basin: Neuse
7. Approximate drainage area: > 100 ac	8. Stream order: O
9. Length of reach evaluated: 30ft	10. County: Wilson
11. Site coordinates (if known): preser in decimal degrees.	
Latitude (ex. 34.872312): 35. 6 8881	Longitude (ex77.556611): -78.10645
13. Location of reach under evaluation (note nearby roads and	
East of NC581 near Kenfrow	Kd
14. Proposed channel work (if any): Proposed P	ipeline
15. Recent weather conditions: Warm & dry	
16. Site conditions at time of visit: To rested	
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: \(\sigma \) 2000
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: 4 ft	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 econ characteristics identified in the worksheet. Scores should recharacteristic 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	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 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): 67 Comme	nts:
	7-117/15
Evaluator's Signature	as   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 person of the comment, please call 919-876-8441 x 26.

	#	CHARACTERISTICS:	gECOREG Coastal	ION;ROINI	RANGE &	SCORE
30 25 存實	1	Presence of flow / persistent pools in stream	0 – 5	0 – 4	0 – 5	
7	1	(no flow or saturation = 0; strong flow = max points)		<del></del>	0-3	_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	4
۸ľ	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	2
SIC	6	Presence of adjacent floodplain  (no floodplain = 0; extensive floodplain = max points)	0-4	30-4	0-2	2
PHYSI	<b>7</b>	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	∴ 0 − 5	0-4	0-2	3
	8	Presence of adjacent wetlands	0-6	0-4	0-2	5
	9	(no wetlands = 0; large adjacent wetlands = max points)  Channel sinuosity	0-5	0-4	0-3	4
	10	(extensive channelization = 0; natural meander = max points)  Sediment input	0-5	0-4	0-4	2
	11	(extensive deposition= 0; little or no sediment = max points)  Size & diversity of channel bed substrate	NA* a.	0-4	0-5	
	12	(fine, homogenous = 0; large, diverse sizes = max points)  Evidence of channel incision or widening	0-5	0-4	0-5	٦
STABILITY	13	(deeply incised = 0; stable bed & banks = max points)  Presence of major bank failures	0-5	0-5	0-5	4
VBIL	14	(severe erosion = 0; no erosion, stable banks = max points)  Root depth and density on banks	0-3	0-4	0-5	7
ST	15	(no visible roots = 0; dense roots throughout = max points)  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
BITAT	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	4
HABI		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	
156.75	20	Presence of stream invertebrates (see page 4)  (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	0
OGY	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	6
RIOLOGY	22	Presence of fish  (no evidence = 0; common, numerous types = max points)	0-4	. 0-4	0-4	0
*	23	Fyidence of wildlife use	0-6	0-5	0-5	5
1000		Total Points Possible	. 100	100	100	
		TOTAL SCORE (also enter on	first page)			67
(A) (A)	Thece	characteristics are not assessed in coastal streams			The second secon	•

<sup>\*</sup> These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form	Version 4.11	SWIF	9 <b>9 9 8</b>	_	
Date: 5/19/15	Project/Site:	HCP '	Latitude: 35	08881	
Evaluator: ESI (Roper, Markham)	County: Wi	lson	Longitude: -7	8.10645	
Evaluator: EST (Roper, Markham)  Total Points:  Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determi Ephemeral <u>Int</u> e	nation (circle one) rmittent Perennial	Other e.g. Quad Name:	4cama	
A. Geomorphology (Subtotal = 1)	Absent	Weak	Moderate	Strong	
1ª. 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	<b>O</b>	3	
4. Particle size of stream substrate	0	(D)	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	1 0	0.5	(آی	1.5	
10. Natural valley	0	0.5	<u> </u>	1.5	
11. Second or greater order channel	<del></del>	0=0	Yes		
a artificial ditches are not rated; see discussions in manual		0-0	103	<del>- 3</del>	
B. Hydrology (Subtotal =)					
12. Presence of Baseflow	0	1	2	(3)	
	<del> </del> Å	1		3	
13. Iron oxidizing bacteria  14. Leaf litter			2	3	
	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					
C. Biology (Subtotal =)		,			
18. Fibrous roots in streambed	3	2	1	0	
19. Rooted upland plants in streambed	(3)	2	11	0	
20. Macrobenthos (note diversity and abundance)	(5)	1	2	3	
21. Aquatic Mollusks	6	1	2	3	
22. Fish	10	0.5	1	1.5	
23. Crayfish		0.5	1	1.5	
24. Amphibians		0.5	1	1.5	
26. Wetland plants in streambed		FACW = 0.75; C	DBL = 1.5 <b>Q</b> ther =	: 9 >	
*perennial streams may also be identified using other metho	ds. See p. 35 of mar	rual.			
Notes:					
				,	
Sketch:	1				
<u> </u>		W 18			
		SI DE SINO			
	Ø 8 e	,nd			
	We data point				
origin		$\angle$			
1 3/					
Bankfull width: 4.	C+				
DON'TON WIGHTING	1 b				
OHWM width: 3 f	t				



Waterbody swip008 facing west upstream.



Waterbody swip008 facing northeast downstream.



Waterbody swip008 facing northwest across bank.

NC DWQ Stream Identification Form Version 4.11 5WiP 006

17C D 17 Q Stream ruentification rorm	1 7 (1310)) 7.11	2,14			
Date: 5/12/15	Project/Site: A	CP	Latitude: 35	68608	
Evaluator: ESI LRoper, Markhan	n County: Wil	son	Longitude: -	18.10812	
Fotal Points: Stream is at least intermittent f≥19 or perennial if≥30*	Stream Determi	nation (circle one) rmittend Perennial	Other LL e.g. Quad Name:	icama. No	
A Coomerphology (Subtetal - 1 - C )	Absent	Weak	Moderate	Strong	
A. Geomorphology (Subtotal = 10.5)  1 <sup>a.</sup> Continuity of channel bed and bank	0 Append			Strong	
2. Sinuosity of channel along thalweg	0	<del>- 4</del>	2 Ø	3	
3. In-channel structure: ex. riffle-pool, step-pool,		<del></del>			
ripple-pool sequence	0 1	1	2	3	
4. Particle size of stream substrate	0	9	2	3	
5. Active/relict floodplain	0(	9	2	3	
6. Depositional bars or benches	9	1	2	3	
7. Recent alluvial deposits	(0)	1	2	3	
8. Headcuts	6	1	2	3	
9. Grade control	0	(0.5)	1	1.5	
10. Natural valley	0	0.5	1	1.5	
11. Second or greater order channel	(N	o = 0	Yes	= 3	
a artificial ditches are not rated; see discussions in manual					
B. Hydrology (Subtotal = 915)		· · · · · · · · · · · · · · · · · · ·			
12. Presence of Baseflow	0	1	2	(3)	
13. Iron oxidizing bacteria	0	0	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 = 3					
C. Biology (Subtotal =(o)	<u></u>				
18. Fibrous roots in streambed	(3)	2	1	0	
19. Rooted upland plants in streambed		2	1	0	
20. Macrobenthos (note diversity and abundance)	<u> </u>	1	2	3	
21. Aquatic Mollusks	Ø	1	2	3	
22. Fish	(9)	0.5	1	1.5	
23. Crayfish	(0)	0.5	1	1.5	
24. Amphibians	19	0.5	1	1.5	
25. Algae		0.5	1	1.5	
26. Wetland plants in streambed		FACW = 0.75;	OBL = 1.5 Other =	0	
*perennial streams may also be identified using other meth	nods. See p. 35 of man	ual.			
Notes:					
Sketch:	4/4,	6			
Wwipollo XX	2 Dada zonek	Z prigin			
Bankfull Width: 3ft OHWM Width: 2ft	V	¥ 1			





Provide the following information for the stream reach und	er assessment:
1. Applicant's name: <b>Dominion</b>	2. Evaluator's name: EST (Poper, Marknam)
3. Date of evaluation: 5/12/15	4. Time of evaluation: 12-ρm
5. Name of stream: UNT to Contentnee Creek	- 6. River basin: Neuse
7. Approximate drainage area: 40ac	8. Stream order: O
9. Length of reach evaluated: 30++	10. County: Wi\SDV
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): None
Latitude (ex. 34.872312): 35,68608	Longitude (ex77.556611): -78.10812
Method location determined (circle): PS Topo Sheet Ortho (A 13. Location of reach under evaluation (note nearby roads and East of NCSS) near Renfroi	landmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): proposed T	Di peline
15. Recent weather conditions: Waym and	
16. Site conditions at time of visit: forested woo	ds and agricultural field
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive WatersWater Supply Watershed(l-IV)
18. Is there a pond or lake located upstream of the evaluation p	
19. Does channel appear on USGS quad map? YES	20. Does channel appear on USDA Soil Survey? YES (NO
21. Estimated watershed land use: 5 % Residential	% Commercial % Industrial 75% Agricultural
20% Forested	% Cleared / Logged % Other (
22. Bankfull width: 3 FK	23. Bank height (from bed to top of bank):
24. Channel slope down center of stream: Flat (0 to 2%)	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
25. Channel sinuosity:StraightOccasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every to each characteristic within the range shown for the eco characteristics identified in the worksheet. Scores should recharacteristic 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	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 saracter 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): 50 Comme	nts:
gathering the data required by the United States Army quality. The total score resulting from the completion	Date 5/12/15 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.

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<sup>\*</sup> These characteristics are not assessed in coastal streams.



Waterbody swip006 facing southwest upstream.



Waterbody swip006 facing northeast downstream.



Waterbody swip006 facing east across bank.

NC DWQ Stream Identification Form Version 4.11

County:     County:   C	County: Wilson   Coun	ate: 5/12/15	Project/Site:	+ CP	Latitude: 35	.68603
Stream Determination (circle one pheneral Intermittent)   Perennial   Stream is at least intermittent   Perennial   Perenni	Stream Determination (circle one)   Ephemeral Infermittent   Perennial   End   End   Perennial   End   End   Perennial   End   End   Perennial   End   En			***************************************		
1. Continuity of channel bed and bank (1.17) 0 1 2 3 2. Sinuosity of channel along thalweg 0 1 1 2 3 3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence 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 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 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 0 0.5 1 1.5 12. Presence of Baseflow 0 1 2 3 13. Iron oxidizing bacteria 0 1 2 3 14. Leaf litter 1 1 0.5 0 0 15. Sediment on plants or debris 0 0 0.5 1 1.5 16. Organic debris lines or piles 0 0 0.5 1 1.5 17. Soil-based evidence of high water table? No = 0 1 2 3 18. Fibrous roots in streambed 0 0 1 2 3 19. Rooted upland plants in streambed 0 0 1 2 3 21. Aquatic Mollusks 0 0 1 2 3 22. Fish 0 0 0.5 1 1.5 24. Amphibians 0 0 0.5 1 1.5 25. Algae 0 0 0.5 1 1.5	Continuity of channel bed and bank   1-1	otal Points: tream is at least intermittent	Stream Determi Ephemeral Inte	nation (circle one) ermittent)Perennial	Other L	ucama
1. Continuity of channel bed and bank (1.17) 0 0 1 2 3 2. Sinuosity of channel along thalweg 0 1 1 2 3 3. In-channel along thalweg 0 1 2 3 3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence 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 0.5 (1) 1.5 10. Natural valley 0 0.5 1 1.5 11. Second or greater order channel 0 0.5 1 1.5 12. Presence of Baseflow 0 1 2 3 14. Leaf litter 1 1 0.5 0 15 15. Sediment on plants or debris 0 0 0.5 1 1.5 16. Organic debris lines or piles 0 0 0.5 1 1.5 17. Soil-based evidence of high water table? No = 0 1 2 3 21. Aquatic Mollusks 0 1 1 2 3 22. Fish 0 0 0.5 1 1.5 24. Amphibians (0) 0.5 1 1.5 25. Algae 0 0 0.5 1 1.5	Continuity of channel bed and bank   1-1					
1. Continuity of channel bed and bank (1.17) 0 0 1 2 3 2. Sinuosity of channel along thalweg 0 1 1 2 3 3. In-channel along thalweg 0 1 2 3 3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence 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 0.5 (1) 1.5 10. Natural valley 0 0.5 1 1.5 11. Second or greater order channel 0 0.5 1 1.5 12. Presence of Baseflow 0 1 2 3 14. Leaf litter 1 1 0.5 0 15 15. Sediment on plants or debris 0 0 0.5 1 1.5 16. Organic debris lines or piles 0 0 0.5 1 1.5 17. Soil-based evidence of high water table? No = 0 1 2 3 21. Aquatic Mollusks 0 1 1 2 3 22. Fish 0 0 0.5 1 1.5 24. Amphibians (0) 0.5 1 1.5 25. Algae 0 0 0.5 1 1.5	Continuity of channel bed and bank   1-1	a. Geomorphology (Subtotal = 7)	Absent	Weak	Moderate	Strong
2. Sinuosity of channel along thalweg 3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence 4. Particle size of stream substrate 5. Active/relict floodplain 6. Depositional bars or benches 7. Recent alluvial deposits 8. Headcuts 9. 1 2 3 8. Headcuts 9. 1 2 3 9. Grade control 10. Natural valley 11. Second or greater order channel 11. Second or greater order channel 12. Presence of Baseflow 13. Iron oxidizing bacteria 14. Leaf litter 15. Sediment on plants or debris 16. Organic debris lines or piles 17. Soil-based evidence of high water table? 18. Fibrous roots in streambed 19. Rooted upland plants in streambed 20. Macrobenthos (note diversity and abundance) 21. Aquatic Mollusks 22. Fish 23. Crayfish 24. Amphibians 25. Algae	2. Sinuosity of channel along thalweg 3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence pripple-pool sequenc		0	1	2	
3. In-channel structure: ex. riffle-pool, ripple-pool sequence 4. Particle size of stream substrate 5. Active/relict floodplain 6. Depositional bars or benches 7. Recent alluvial deposits 8. Headcuts 9. 1 2 3 8. Headcuts 9. 1 2 3 8. Headcuts 9. 1 2 3 9. Grade control 10. Natural valley 10. Natural valley 11. Second or greater order channel 12. Presence of Baseflow 13. Iron oxidizing bacteria 14. Leaf litter 15. Sediment on plants or debris 16. Organic debris lines or piles 17. Soil-based evidence of high water table? 18. Fibrous roots in streambed 19. Rooted upland plants in streambed 19. Rooted upland plants in streambed 20. Macrobenthos (note diversity and abundance) 21. Aquatic Mollusks 22. Fish 23. Capyrish 24. Amphibians 25. Algae 26. O 0 0.5 1 1.5 26. Argapito on 0.5 1 1.5 27. Sol-based evidence of high water table? 29. O 0.5 1 1.5 20. O 0.5 1 1.5 21. Sol-based evidence of high water table? 20. Macrobenthos (note diversity and abundance) 20. Macrobenthos (note diversity and abundance) 20. O 0.5 1 1.5 21. Sol-page 20. O 0.5 1 1.5 22. Anyhibians 23. Crayfish 24. Amphibians 25. Algae	3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence   0		0	1	2	3
4. Particle size of stream substrate  5. Active/relict floodplain  6. Depositional bars or benches  7. Recent alluvial deposits  8. Headcuts  9. Grade control  10. Natural valley  11. Second or greater order channel  4 artificial ditches are not rated; see discussions in manual  8. Hydrology (Subtotal =	4. Particle size of stream substrate 5. Active/relict floodplain 6. Depositional bars or benches 7. Recent alluvial deposits 9. Grade control 9. Crade control 10. Crade control 10. Crade control 10. Solid bars are not rated; see discussions in manual 11. Second or greater order channel 12. Presence of Baseflow 13. Iron oxidizing bacteria 14. Leaf litter 15. Cragnic debris lines or piles 16. Organic debris lines or piles 17. Soli-based evidence of high water table? 18. Fibrous roots in streambed 19. Rooted upland plants in streambed 20. Macrobenthos (note diversity and abundance) 21. Aquatic Mollusks 22. Fish 23. Crayfish 26. Wetland plants in streambed 26. Wetland plants in streambed 27. Faccilia of the streambed 28. Hydrology (Subtotal = 1.5 piles = 1		0	0		3
5. Active/relict floodplain       ①       1       2       3         6. Depositional bars or benches       0       ①       2       3         7. Recent alluvial deposits       ①       1       2       3         8. Headcuts       ①       1       2       3         8. Headcuts       ①       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 trifficial ditches are not rated; see discussions in manual       B. Hydrology (Subtotal = 0)       Yes = 3         12. Presence of Baseflow       0       1       2       3         13. Iron oxidizing bacteria       0       1       2       3         14. Leaf litter       15       1       0.5       0         15. Sediment on plants or debris       0       0       0.5       1       1.5         16. Organic debris lines or piles       0       0       0.5       1       1.5         17. Soil-based evidence of high water table?       No = 0       (es = 3)       2       1       0 <td< td=""><td>5. Active/relict floodplain 6. Depositional bars or benches 7. Recent alluvial deposits 8. Headcuts 9. Grade control 10. Natural valley 11. Second or greater order channel 11. Second or greater order channel 12. Tessende of Baseflow 13. Iron oxidizing bacteria 14. Leaf litter 15. Sediment on plants or debris 16. Organic debris lines or piles 17. Soil-based evidence of high water table? 18. Fibrous roots in streambed 19. Rooted upland plants in streambed 20. Macrobenthos (note diversity and abundance) 21. Aquatic Mollusks 22. Fish 23. Crayfish 24. Amphitians 25. Algae 26. Wetland plants in streambed 27. Facts a significant of the plants o</td><td></td><td>0</td><td>1</td><td>(2)</td><td>3</td></td<>	5. Active/relict floodplain 6. Depositional bars or benches 7. Recent alluvial deposits 8. Headcuts 9. Grade control 10. Natural valley 11. Second or greater order channel 11. Second or greater order channel 12. Tessende of Baseflow 13. Iron oxidizing bacteria 14. Leaf litter 15. Sediment on plants or debris 16. Organic debris lines or piles 17. Soil-based evidence of high water table? 18. Fibrous roots in streambed 19. Rooted upland plants in streambed 20. Macrobenthos (note diversity and abundance) 21. Aquatic Mollusks 22. Fish 23. Crayfish 24. Amphitians 25. Algae 26. Wetland plants in streambed 27. Facts a significant of the plants o		0	1	(2)	3
6. Depositional bars or benches 7. Recent alluvial deposits 9. Headcuts 9. Grade control 10. Natural valley 10. Natural valley 11. Second or greater order channel 12. Presence of Baseflow 13. Iron oxidizing bacteria 14. Leaf litter 15. Sediment on plants or debris 16. Organic debris lines or piles 17. Soil-based evidence of high water table? 18. Fibrous roots in streambed 19. Rooted upland plants in streambed 20. Macrobenthos (note diversity and abundance) 21. Aquatic Mollusks 22. Anghibians 23. Captignal	6. Depositional bars or benches 7. Recent alluvial deposits 9. 1 2 3 8. Headcuts 9. 1 2 3 9. Grade control 10. Natural valley 10. 0.5 1 1.5 11. Second or greater order channel 10. Fresence of Baseflow 11. Second or Baseflow 12. Presence of Baseflow 13. Iron oxidizing bacteria 14. Leaf litter 15. Sediment on plants or debris 16. Organic debris lines or piles 17. Soil-based evidence of high water table? 18. Fibrous roots in streambed 19. Rooted upland plants in streambed 20. Macrobenthos (note diversity and abundance) 21. Aquatic Mollusks 22. Fish 23. Crayfish 24. Amphibians 25. Algae 26. Wetland plants in streambed 26. Wetland plants in streambed 27. Faculty of the methods. See p. 35 of manual.	. Active/relict floodplain	(0)	·		
7. Recent alluvial deposits	7. Recent alluvial deposits			(D)		<del></del>
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14. Leaf litter       15       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       Ves = 3'         C. Biology (Subtotal =	14. Leaf litter       16       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 = 3       1.5         C. Biology (Subtotal =					
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C. Biology (Subtotal =)         18. Fibrous roots in streambed       (3/2)       2       1       0         19. Rooted upland plants in streambed       (3/2)       2       1       0         20. Macrobenthos (note diversity and abundance)       (0/2)       1       2       3         21. Aquatic Mollusks       (0/2)       1       2       3         22. Fish       (0/2)       0.5       1       1.5         23. Crayfish       (0/2)       0.5       1       1.5         24. Amphibians       (0/2)       0.5       1       1.5         25. Algae       (0/2)       0.5       1       1.5	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 0.5 1 1 1.5         23. Crayfish       0 0 0.5 1 1 1.5         24. Amphibians       0 0 0.5 1 1 1.5         25. Algae       0 0 0.5 1 1 1.5         26. Wetland plants in streambed       FACW = 0.75; OBL = 1.5 0ther = 0         *perennial streams may also be identified using other methods. See p. 35 of manual.			of Transfer		
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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	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       There is a contracting the contracting of the methods. See p. 35 of manual.			****		
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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	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. See p. 35 of manual.					
23. Crayfish     (0)     0.5     1     1.5       24. Amphibians     (0)     0.5     1     1.5       25. Algae     (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. See p. 35 of manual.					
24. Amphibians     (0)     0.5     1     1.5       25. Algae     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. See p. 35 of manual.					
25. Algae 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. See p. 35 of manual.					
	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.					
1 26 (Veitand plants in streamned LEALWELL/5' OBLE 1.5 (Viner E.)	*perennial streams may also be identified using other methods. See p. 35 of manual.	3				<del></del>
			1 0 05 6		OBL = 1.5 Other	= 0
	Notes: maintained ditch		ods. See p. 35 of mar	nual.		
Notes: maintained ditch		Notes: maintained ditch		7.77000014		
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	Bankfull width: 6ft Cumipollo			wip016		
*perennial streams may also be identified using other methods. See p. 35 of manual.		Notes: maintained ditch				

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USAUE	A1D*			

DWO #	<b>‡</b>		

Site	#	(indicate	on	attached	map)
	_				

swip 007





Provide the following information for the stream reach und	
I. Applicant's name: Dominion	2. Evaluator's name: ESI (Roper, Markham)
3. Date of evaluation: 5/12/15	4. Time of evaluation: 12:30 pm
5. Name of stream: UNT to Contentnea Creek	6. River basin: Neuse
7. Approximate drainage area: 40 ac	8. Stream order: O
9. Length of reach evaluated: 20F4	10. County: Wilso M
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): YOVE
Latitude (ex. 34.872312): 35,68653	
Method location determined (circle): GPS Topo Sheet Ortho (A 13. Location of reach under evaluation (note nearby roads and I East of NC58) near Renform	andmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): Proposed	
15 Recent weather conditions: WMCVV a AVV	
16. Site conditions at time of visit: Mantained	itch on agricultural field edge
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
	Nutrient Sensitive WatersWater Supply Watershed(l-IV)
	oint? YES NOIf 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
	% 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 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	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 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): 33 Comme	nts:
gathering the data required by the United States Army	Date 5/17/15 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 o change – version 06 03. To Comment, please call 919-876-8441 x 26.

	CITAD CONDITION	ECOREG	ION POINT	RANGE	
#	CHARACTERISTICS	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	5
2	(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	
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	-
6	Presence of adjacent floodplain	0-4	0-4	0-2	0
7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0-4	0-2	1
8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0 4	0-2	0
9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0 – 5	0-4	0-3	4
10	Sediment input	0-5	0-4	0-4	3
11	Size & diversity of channel bed substrate		0 - 4	0-5	
12	Evidence of channel incision or widening	0-5	0-4	0-5	
13	Presence of major bank failures	0-5	0 – 5	0 – 5	5
14	Root depth and density on banks	0-3	0 – 4	0-5	1
15	Impact by agriculture, livestock, or timber production	0-5	0-4	0-5	
16	Presence of riffle-pool/ripple-pool complexes	0-3	0 – 5	0-6	
17	Habitat complexity	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	
20	Presence of stream invertebrates (see page 4)	0-4	0-5	0-5	0
21	Presence of amphibians	0 – 4	0-4	0-4	0
22	Presence of fish	0-4	0-4	0-4	0
23	Evidence of wildlife use	0-6	0-5	0-5	2
	Total Points Possible	100	100	100	
	TOTAL SCORE (also enter on	first page)			33
	3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	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)  Fresence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)  Presence of adjacent floodplain = max points)  Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)  Channel sinuosity (extensive deposition= 0; natural meander = max points)  Sediment input (extensive deposition= 0; little or no sediment = max points)  Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)  Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)  Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)  Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)  Root depth and density on banks (no riffles/ripples or pools = 0; well-developed = max points)  Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)  Presence of stream invertebrates (see page 4) (no shading vegetation = 0; continuous canopy = max points)  Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)  Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)  Presence of jetneend of wildlife use (no evidence = 0; common, numerous types = max points)  Presence of ish (no evidence = 0; common, numerous types = max points)	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)  Presence of adjacent floodplain access (deeply entrenched = 0; frequent flooding = max points)  Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)  Channel sinuosity (extensive deposition = 0; lattled or no sediment = max points)  Sediment input (extensive deposition = 0; large, diverse sizes = max points)  Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)  Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)  Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)  Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)  Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)  Presence of riffle-pool/ripple-pool complexes (no shading vegetation = 0; continuous canopy = max points)  Presence of riffle-pool/ripple-pool complexes (no evidence = 0; common, numerous types = max points)  Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)  Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)  Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	Presence of flow/ persistent pools in stream	Presence of flow / persistent pools in stream (no flow or saturation = 0; strong flow = max points)

<sup>\*</sup> These characteristics are not assessed in coastal streams.



Waterbody swip007 facing south upstream.



Waterbody swip007 facing north downstream.



Waterbody swip007 facing west across bank.

5w10017



# STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for the stream reach under	assessment:
1. Applicant's name: Dominion	2. Evaluator's name: ESI- Vaughan, Poper
3. Date of evaluation: 6/30/16	4. Time of evaluation: 10am
5. Name of stream: UNT to Buckborn Benny	6. River basin: Newse River
	8. Stream order:
	10. County: Wilson
	12. Subdivision name (if any): NONE
Latitude (ex. 34.872312): 35.68 2406	
West of NC-581 Hwy	rial) Photo/GIS Other GIS Otheradmarks and attach map identifying stream(s) location):
14. Proposed channel work (if any): TBD	> 1
15. Recent weather conditions: Rain within 48	
16. Site conditions at time of visit: aq. field ditel	7
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
	utrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation point	nt? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES (O)	20. Does channel appear on USDA Soil Survey? YES
21. Estimated watershed land use:% Residential	_% Commercial% Industrial% Agricultural
% Forested	_% Cleared / Logged% Other (
22. Bankfull width: Left :	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:Occasional bends	Frequent meanderVery sinuousBraided channel
location, terrain, vegetation, stream classification, etc. Every characteristic within the range shown for the ecoreg 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 characteristic afforms, the stream may be divided into smaller reaches that reach. The total score assigned to a stream reach must range be highest quality.	Begin by determining the most appropriate ecoregion based on an aracteristic must be scored using the same ecoregion. Assign points ion. Page 3 provides a brief description of how to review the et an overall assessment of the stream reach under evaluation. If a tions, enter 0 in the scoring box and provide an explanation in the acter of a stream under review (e.g., the stream flows from a pasture at display more continuity, and a separate form used to evaluate each etween 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): O / Comments	:
gathering the data required by the United States Army Co	Date 6/30/16  a guide to assist landowners and environmental professionals in orps 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.

	ш	CHADACTEDICTION	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	5	
	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	0	
distract.	3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0-6	0-4	0-5		
200	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	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	0	
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	0	
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0-4	0-3	0	
	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0-5	0-4	0-4	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	4	
	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5		
THE STATE OF	15	Impact by agriculture, livestock, or timber production (substantial impact =0; no evidence = max points)	0-5	0-4	0-5	0	
	16	Presence of riffle-pool/ripple-pool complexes (no riffles/ripples or pools = 0; well-developed = max points)	0 – 3	0-5	0-6	0	
	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	1	
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4		
203	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	3	
	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		
AND		Total Points Possible	100	100	100		

<sup>\*</sup> These characteristics are not assessed in coastal streams.

Date: 6/30/16	Project/Site:	ALP	Latitude: 35	682406		
Evaluator: L. Roper (ESI)	County: Wi	1500	Longitude:	Longitude: -78. (1 03/6		
Total Points: Stream is at least intermittent if $\geq 19$ or perennial if $\geq 30^*$	Stream Betermi Ephemeral Inte	nation (circle one) rmittent Perennial	Other e.g. Quad Name	LUCAMA		
A. Geomorphology (Subtotal =)	Absent	Weak	Moderate	Strong		
1ª Continuity of channel bed and bank ditch	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	6	1	2	3		
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	Ø.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  B. Hydrology (Subtotal = 8)						
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?	The same of the sa	0 = 0	Yes			
C. Biology (Subtotal = 7.5						
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)	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; OB	L = 1.5 <b>Q</b> ther = (			
*perennial streams may also be identified using other method	ds. See p. 35 of manua	1.				
Notes: Kain within Zyhrs.						
Sketch:	AF	D.:				
	data point	_ swioDI	1	z <del>&gt;</del>		

Bank: 6ft OHWM: 4ft



Waterbody data point swio017 facing west upstream.



Waterbody data point swio017 facing east downstream.



Waterbody data point swio017 facing south across bank.

SWi	ام	25/35	2
	М,	~ ~	

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

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112 122
10.67
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Provide the following information for the stream reach under	
1. Applicant's name: Dominion	2. Evaluator's name: ESI - L. Roper
3. Date of evaluation: 718114	4. Time of evaluation: 8500m
5. Name of stream: UNT to Buckhorn Branch	6. River basin: Nwsc
7. Approximate drainage area: \5 ac	8. Stream order: 15t
	10. County: Wilson
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): NA
	Longitude (ex77.556611): -78.1135
Method location determined (circle): GPS Topo Sheet Ortho (Ac 13. Location of reach under evaluation (note nearby roads and la	ndmarks and attach map identifying stream(s) location):
North of NC-42 between Ren-	400 RZ + NC-58
14. Proposed channel work (if any): TBP	
15. Recent weather conditions: Scattered Show	ers in pust 48hm.
16. Site conditions at time of visit: hanse site an	d agricultural field nearby
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource WatersN	Jutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation poi	int? YES (NO) If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES NO	20. Does channel appear on USDA Soil Survey? YES (NO)
21. Estimated watershed land use: \(\)\(\text{D}\)\(\text{\text{Residential}}\)	% Commercial% Industrial% Agricultural
	% Cleared / Logged% Other (
22. Bankfull width: 5	23. Bank height (from bed to top of bank): 3'
,	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 cl to each characteristic within the range shown for the ecore characteristics identified in the worksheet. Scores should reflect characteristic cannot be evaluated due to site or weather cond comment section. Where there are obvious changes in the char into a forest), the stream may be divided into smaller reaches the	2): Begin by determining the most appropriate ecoregion based on haracteristic must be scored using the same ecoregion. Assign points gion. Page 3 provides a brief description of how to review the ect an overall assessment of the stream reach under evaluation. If a itions, enter 0 in the scoring box and provide an explanation in the racter of a stream under review (e.g., the stream flows from a pasture at display more continuity, and a separate form used to evaluate each between 0 and 100, with a score of 100 representing a stream of the
Total Score (from reverse): 40 Comment	s: 5WiPODZ
	710.14
This channel evaluation form is intended to be used only as	Date 7/8/14  Sa 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.

	#.	CHARACTERISTICS		ION POINT		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
in mil	2	Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	3
tive.	3	Riparian zone (no buffer = 0; contiguous, wide buffer = max points)	0 – 6	0-4	0-5	3
PHYSICAL	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	<u> </u>
SIC	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0 – 4	0-4	0-2	8
PH	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0 – 4	0-2	. cg
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0-2	1
) (M)	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0 – 5	0 – 4	0-3	0
糒	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	NA
STABILITY	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0 – 4	0 – 5	3_
LIT	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0 – 5	0-5	0-5	4
[AB]	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	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
ΠAΊ	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	3
i in	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA.	0 – 4	0-4	AN
	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0 – 5	0-5	0
063	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0 – 4	0-4	
S 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	0
	Total	Total Points Possible	100	100	100 / 5	
	e vit	TOTAL SCORE (also enter on )	first page)	Christ Warry		40

<sup>\*</sup> These characteristics are not assessed in coastal streams.

NC DWO Stream Identification Form Version 4.11

Longitude: -78.1135
cle one) Other Lucomon erennial e.g. Qued Name:

A. Geomorphology (Subtotal = 2,5)	Absent	Weak	Moderate	Strong
1 <sup>a.</sup> Continuity of channel bed and bank	<b>(D)</b>	1	2	3
2. Sinuosity of channel along thalweg	<b>©</b>	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	<b>D</b>	2	3
5. Active/relict floodplain	0	<b>(J</b> )	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	(D)	1	2	3
9. Grade control	(O)*	0 <u>.5</u>	1	1.5
10. Natural valley	0	(0.5)	1	1.5
11. Second or greater order channel	Ñ	(No = 0)		= 3
<sup>a</sup> artificial ditches are not rated; see discussions in manual			•	
B. Hydrology (Subtotal =)			<u> </u>	
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
47 0 11 1 11 51 1 1 1 1 1	<del></del>		1	- 1

12. Presence of Baseflow	0	1	2	<b>③</b>
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?	1	lo = 0	(Yes	= 3)
C. Biology (Subtotal = (a.5)				

C. Blology (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	Ö	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. See p. 35 of manual.

Notes:

Sketch:

\$\wipoo4 \$\swipoo2



Waterbody swip002 facing east upstream.



Waterbody swip002 facing west downstream.



 $Waterbody\ swip 002\ facing\ south\ across\ channel$ 

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<u> </u>	<u> </u>

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

1	LLV . S.L.
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<i>p</i>	
Provide the following information for the stream reach und	der assessment:
1. Applicant's name: Dominion	2. Evaluator's name: ESI - L. Roper
3. Date of evaluation: 7/8/14	4. Time of evaluation: 1:30 pm
5. Name of stream: UNT to Contentue	6. River basin: Newse
7. Approximate drainage area: 20 ac Creek	8. Stream order: \\\ \frac{15^4}{}
9. Length of reach evaluated: 55 ft	10. County: Wべらか
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): NA
Latitude (ex. 34.872312): 35, 6772	Longitude (ex77.556611): -78,1156
Method location determined (circle): GPS Topo Sheet Ortho ( 13. Location of reach under evaluation (note nearby roads and  on Dwel 19-063, off of NC	
14. Proposed channel work (if any): TBD	
15. Recent weather conditions: Scuttered sho	owers in past 48hrs
16. Site conditions at time of visit: Un disturbed	
	Section 10Tidal WatersEssential Fisheries Habitat
Trout WatersOutstanding Resource Waters	Nutrient Sensitive WatersWater Supply Watershed(I-IV)
18. Is there a pond or lake located upstream of the evaluation p	point? YES NO If yes, estimate the water surface area:
19. Does channel appear on USGS quad map? YES	20. Does channel appear on USDA Soil Survey? YES
21. Estimated watershed land use: 10% Residential	% Commercial% Industrial% Agricultural
	Other (
22. Bankfull width: 5 H	23. Bank height (from bed to top of bank): 2 ft.
	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
<b>A</b>	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 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 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 character 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	ents: SW: P083
Evaluator's Signature	Date 7/8/14 as 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 change – version 06/03. To Comment, please call 919-876-8441 x 26.

Carly	信用	THE CHIEF WAS TO SEE THE THE SECTION OF THE SECTION	ECOREG	ION POINT	RANGE	M TORKE
	*#	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	6
	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	3
	4	Evidence of nutrient or chemical discharges (extensive discharges = 0; no discharges = max points)	0 – 5	0-4	0 – 4	4
PHYSICAL FIFE	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0 – 4	0-4	1
XSIC	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0 – 4	0-4	0-2	1.
PH	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0 – 4	0 – 2	2
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0-4	0 – 2	3
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0-5	0 – 4	0-3	2
	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0 – 5	0-4	0 – 4	2
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA*	0-4	0 – 5	NA
STABILITY	12	Evidence of channel incision or widening (deeply incised = 0; stable bed & banks = max points)	0-5	0-4	0-5	2
ПП	13	Presence of major bank failures (severe erosion = 0; no erosion, stable banks = max points)	0-5	0 – 5	0-5	2
LAB	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0 – 4	0 – 5	<b>†</b>
S		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
[IA]	17	Habitat complexity (little or no habitat = 0; frequent, varied habitats = max points)	0-6	0-6	0-6	4
HABITAT	18	Canopy coverage over streambed (no shading vegetation = 0; continuous canopy = max points)	0-5	0-5	0-5	5
Park S	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	NA*	0-4	0-4	AN
	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0-5	0-5	0
0	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0-4	0 – 4	0-4	U
BIOLOGY	22	Presence of fish (no evidence = 0; common, numerous types = max points)	0-4	0-4	0-4	٥
		Evidence of wildlife use (no evidence = 0; abundant evidence = max points)	0 – 6	0-5	0-5	3
No.		Total Points Possible	100	100	100	當中國
N. C.	Preference	TOTAL SCORE (also enter on	first page)	<b>建</b>	CANAL CANA	45

<sup>\*</sup> These characteristics are not assessed in coastal streams.

Swip 003

NC DWQ Stream Identification For	m Version 4.11		7 016	<del>, , , , , , , , , , , , , , , , , , , </del>
Date: 7/8/14	Project/Site:	1CP	Latitude: 35	6772
Evaluator: ESI- L. Roper	County: Wil	160n	Longitude:	18,1154
Total Points:  Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*    7,5		nation (circle one) rmittent Perennia		Lama,
A. Geomorphology (Subtotal = 7)	Absent	Weak	Moderate	Strong
1 <sup>a.</sup> Continuity of channel bed and bank	0	0	. 2	3
2. Sinuosity of channel along thalweg	0	9	2	3

A. Geomorphology (Subtotal = 7 )	Absent	Weak	Moderate	Strong
1 <sup>a.</sup> Continuity of channel bed and bank	0	0	. 2	3
2. Sinuosity of channel along thalweg	0	q	0	3
In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	9	2	3
4. Particle size of stream substrate	0	<b>4</b> )	2	3
5. Active/relict floodplain	0	0	2	3
6. Depositional bars or benches	82	1	2	3
7. Recent alluvial deposits	Ø	1	2	3
8. Headcuts	(2)	· 1	2	3
9. Grade control	Ŏ	(0.5)	1	1.5
10. Natural valley	0	(F)	1	1.5
11. Second or greater order channel	N	0=0	Yes	= 3
artificial ditches are not rated; see discussions in manual	(			

artificial ditches are not rated; see discussions in manual

	B. Hydi	rology	(Subtotal =	5.5)
--	---------	--------	-------------	------

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	Ø	1	2 .	3
14. Leaf litter	1.5	0	0.5	0
15. Sediment on plants or debris	0	<b>(5)</b>	1	1.5
16. Organic debris lines or piles	0	0.5	<u>(1)</u>	1.5
17. Soil-based evidence of high water table?	No	0 = 0	<b>Y</b> es	= 3

C.	Biology	(Subtotal:	= <u>5</u>	_)

18. Fibrous roots in streambed	3	<b>3</b> ,	1	0
19. Rooted upland plants in streambed	<b>3</b>	2	1	0
20. Macrobenthos (note diversity and abundance)	Ø	, 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	(v)	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 manual.

Notes:

Sketch:

ANWIPDOG

WIFOUS



Waterbody swip003 facing east upstream.



Waterbody swip003 facing west downstream.



Waterbody swip003 facing south across channel

USACE AID#	

DWO	#
DYV	π

Cita	. #
. 7115	, 77

(indicate on attached map)

swip017



### STREAM QUALITY ASSESSMENT WORKSHEET



Provide the following information for the stream reach unde	r assessment:
1. Applicant's name: Dominion	2. Evaluator's name: ESI - K. MUYPhrey
3. Date of evaluation: 5/22/15	4. Time of evaluation: 2: 30PM
5. Name of stream: UNT DU BUCKHORN BLONCH	6. River basin: Neuse
7. Approximate drainage area: 20 ocres	8. Stream order: <u>1</u>
9. Length of reach evaluated: 100 FK	10. County: Wilson
11. Site coordinates (if known): prefer in decimal degrees.	12. Subdivision name (if any): <u>NA</u> Longitude (ex77.556611): <u>-78.12098</u>
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 undmarks and attach map identifying stream(s) location):
	im Rood in Wilson co. NC
14. Proposed channel work (if any): Proposed Pipel	ne
15. Recent weather conditions: SUMM	
16. Site conditions at time of visit: Undistanted	
17. Identify any special waterway classifications known:	Section 10Tidal WatersEssential Fisheries Habitat
<del></del>	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? (ES) NO
~	% Commercial% Industrial% Agricultural
	% Cleared / Logged% Other ()
	23. Bank height (from bed to top of bank):
	Gentle (2 to 4%)Moderate (4 to 10%)Steep (>10%)
	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 characteristic cannot be evaluated due to site or weather concomment section. Where there are obvious changes in the characteristic cannot be evaluated due to site or weather concomment section. Where there are obvious changes in the characteristic cannot be evaluated due to site or weather concomment section. Where there are obvious changes in the characteristic cannot be evaluated due to site or weather concomment section. Where there are obvious changes in the characteristic cannot be evaluated due to site or weather concomment section. Where there are obvious changes in the characteristic cannot be evaluated due to site or weather concomment section. Where there are obvious changes in the characteristic cannot be evaluated due to site or weather concomment section.	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): 55 Commen	ts:
·	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.

	₩.		ECOREC Constal		RAYNGE 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
The state of	2	Evidence of past human alteration  (extensive alteration = 0; no alteration = max points)	0-6	0-5	0-5	3
400	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
M.	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0-4	0-4	2
PHVSIC	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	04	0-2	3
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0 – 4	0-2	3
Carried A	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	1
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	NA <sup>1</sup>	0-4	0-5	
N.	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	3
IAB	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	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
HABITAT	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	
N.	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0 – 5	0-5	0
O.	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
1.35	23	Evidence of wildlife use  (no evidence = 0; abundant evidence = max points)	0-6	0 - 5	0-5	3
TOWERS.		Total Points Possible	1.100	100	100	
S (lat	leup,	TOTAL SCORE (also enter on f	irst page) 🚟			55

<sup>\*</sup> These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11

Date: 5/21/15	Project/Site: ACP	Latitude: 35,66473
Evaluator: ESI-K. MUPArey	County: WISON	Longitude: -7812098
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determination (cir <u>cle one)</u> Ephemeral Intermittent Perennial	Other LUCAMA e.g. Quad Name:

A. Geomorphology (Subtotal = 15.5)	Absent	Weak	Moderate	Strong
1ª. 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	1.5
10. Natural valley	Ö	0.5	1	1.5
11. Second or greater order channel	No	o = 0	Yes	= 3

a artificial ditches are not rated; see discussions in manual
B. Hydrology (Subtotal = )

b. Hydrology (Subtotal =)				
12. Presence of Baseflow	0	1	2	(3)
13. Iron oxidizing bacteria	0	0	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	9	1.5
17. Soil-based evidence of high water table?	No	= 0	Yes	<del>(</del> 3)

C. Biology (Subtotal = <u>6.5</u> )				
18. Fibrous roots in streambed	3	(2)	1	0
19. Rooted upland plants in streambed	(3)	2	1	0
20. Macrobenthos (note diversity and abundance)	(62)	1	2	3
21. Aquatic Mollusks	(0)	1	2	3
22. Fish	(0)	0.5	1	1.5
23. 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; OBL = 1.5 Other = 0			

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

Notes: swip017

Sketch: Sketch: Swip017

Oftwo width 4.5 fe Bonk Width Gfe



Waterbody swip017 facing northwest upstream.



Waterbody swip017 facing southeast downstream.



Waterbody Swip017 facing southwest across bank.

USACE AID#	DWQ #	Site #	(indicate on attached map)
STRE	EAM QUALITY ASSESSM	ENT WORKSHE	SWI POOP
Provide the following information	for the stream reach under assessme	nt:	
. Applicant's name: Domini	2. Evaluato	or's name: ESI-K.	Murphrey
5. Date of evaluation: 5/22/1		evaluation: 20M	
S. Name of stream: UNT +ン	Bucishoin Branch 6. River ba	isin: Neuse	
'. Approximate drainage area:	Sacres 8. Stream	order: 💍	***
. Length of reach evaluated: 50		WILSON	
1. Site coordinates (if known): p	orefer in decimal degrees. 12. Subdiv	vision name (if any): NA	<u> </u>
Latitude (ex. 34.872312): <u>35.66</u>	462 Longitude	(ex77.556611): -78.1	2095
3. Location of reach under evaluate Stream is cocatted	GPS Topo Sheet Ortho (Aerial) Photo/ tion (note nearby roads and landmarks are d NE of EXUM (CO	nd attach map identifying s	stream(s) location):
4. Proposed channel work (if any)	proposed pipeline		
5. Recent weather conditions:	sunner		
6. Site conditions at time of visit:_	undistarbed		
7. Identify any special waterway c		Tidal Waters	Essential Fisheries Habitat
Trout WatersOutstandin	g Resource Waters V Nutrient Ser	nsitive WatersWate	r Supply Watershed(I-IV)
8. Is there a pond or lake located u	ipstream of the evaluation point? YES	NO If yes, estimate the	water surface area: 600 59
9. Does channel appear on USGS	quad map? YES NO 20. Does c	channel appear on USDA S	Soil Survey? YES (NO)
21. Estimated watershed land use:	20 % Residential % Comr	nercial% Indu	strial <u>50</u> % Agricultural
	SO % Forested% Clear	ed / Logged% Othe	er (
22. Bankfull width: 4 Ft		neight (from bed to top of	bank):_3 <b>F</b> €
	tream:Flat (0 to 2%)Gentle (	2 to 4%)Moderate	(4 to 10%)Steep (>10%)
	nt Occasional bends Frequen		
Instructions for completion of woocation, terrain, vegetation, stream to each characteristic within the characteristics identified in the wocharacteristic cannot be evaluated comment section. Where there are	corksheet (located on page 2): Begin a classification, etc. Every characteristic range shown for the ecoregion. Pagorksheet. Scores should reflect an over due to site or weather conditions, enter the obvious changes in the character of a sivided into smaller reaches that display	by determining the most c must be scored using the ge 3 provides a brief de- rall assessment of the stre- er 0 in the scoring box ar stream under review (e.g.,	appropriate ecoregion based on e same ecoregion. Assign point scription of how to review the am reach under evaluation. If and provide an explanation in the 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.

Total Score (from reverse): 53 Comments:

Mark a

Evaluator's Signature Keel Sevaluation form is intended to be used only as a guide to assist landowners and environment

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.

	##	CHARACHURISHCS	ECOREG	IONPOINI Pletinont		SCORE
	1	Presence of flow / persistent pools in stream	0-5	0 – 4	0 – 5	4
	2	(no flow or saturation = 0; strong flow = max points)  Evidence of past human alteration (extensive alteration = 0; no alteration = max points)	0-6	0 – 5	0-5	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
W.E	5	Groundwater discharge (no discharge = 0; springs, seeps, wetlands, etc. = max points)	0-3	0 – 4	0-4	2
PHWSIC	6	Presence of adjacent floodplain (no floodplain = 0; extensive floodplain = max points)	0-4	0 – 4	0-2	2
EH	7	Entrenchment / floodplain access (deeply entrenched = 0; frequent flooding = max points)	0-5	0 – 4	0 – 2	2
	8	Presence of adjacent wetlands (no wetlands = 0; large adjacent wetlands = max points)	0-6	0 – 4	0-2	3
	9	Channel sinuosity (extensive channelization = 0; natural meander = max points)	0 – 5	0 – 4	0-3	2
	10	Sediment input (extensive deposition= 0; little or no sediment = max points)	0 - 5	0 – 4	0-4	2
	11	Size & diversity of channel bed substrate (fine, homogenous = 0; large, diverse sizes = max points)	ANA .	0-4	0 – 5	~
X	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	4
TAB	14	Root depth and density on banks (no visible roots = 0; dense roots throughout = max points)	0-3	0-4	0-5	3
S	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
HABITAT	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	3
	19	Substrate embeddedness (deeply embedded = 0; loose structure = max)	I NA	0-4	0 – 4	
V.	20	Presence of stream invertebrates (see page 4) (no evidence = 0; common, numerous types = max points)	0-4	0 – 5	0-5	Ò
.0C	21	Presence of amphibians (no evidence = 0; common, numerous types = max points)	0 – 4	0-4	0-4	1
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	3
		Total Points Possible	100	100	100	And Angles and the second of t
		TOTAL SCORE (also enter on f	irst page) 🦸	April 1960	13. 数据的	53

<sup>\*</sup> These characteristics are not assessed in coastal streams.

NC DWQ Stream Identification Form Version 4.11

SwiP009

Date: 5/22/15	Project/Site: A C P	Latitude: 35,664 62
Evaluator: EST - K, MUIPhrey	County: WILSON	Longitude: -78.12095
Total Points: Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other L4COMO e.g. Quad Name:

A. Geomorphology (Subtotal = 13.5)	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
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0 .	(1)	2	3
6. Depositional bars or benches	0	<u>A</u>	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	

B. Hydrology (Subtotal = 4)				72
12. Presence of Baseflow	0 ,	1	2	ા છ
13. Iron oxidizing bacteria	0	0	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 € 3)	
C. Biology (Subtotal = (a)	· · · · · ·		·	

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. See p. 35 of manual.

Notes:

Sketch:

OHWM WIGHLI 3F+ Bonk width: 4 FE



Waterbody swip009 facing west upstream.



Waterbody swip009 facing east downstream.



Waterbody swip009 facing south across bank.