

Linear Waterbody Data Sheet

Survey Description				
Project Name: ATLANTIC COAST PIPELINE		Waterbody Name: UNT TO LICKY CREEK		Waterbody ID: SBUL012
State: Virginia		County: Buckingham	Company: W&C	Crew Member Initials: WLM, RMS
Tract Number(s): 09-060/061		Nearest Milepost: 195		Photos: 100-1280 TO 1283
Associated Wetland ID(s): NA				
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: <i>(check one)</i> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial				
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: <u>2</u> ft. Height: <u>0.5</u> ft. N/A <input type="checkbox"/>		OHWM Indicator: <i>(check all that apply)</i> <input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
Width of Waterbody - Top of Bank to Top of Bank: <u>4</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>2</u> ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input checked="" type="checkbox"/> <u> </u> ft.	Depth of Water: <i>(Approx.)</i> <u> </u> ft.	
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> <u> </u> fps N/A <input checked="" type="checkbox"/>	Bank height Right: <u>1</u> ft. Left: <u>1</u> ft.	Bank slope Right: <u>30</u> degrees Left: <u>30</u> degrees	
Qualitative Attributes				
Water Appearance: <i>(check one)</i> <input checked="" type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <i>(check all that apply)</i> <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input checked="" type="checkbox"/> Gravel <input type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other: % of Substrate: <u>NA</u> % <u>NA</u> % <u> </u> % <u>5</u> % <u>NA</u> % <u>95</u> % <u>NA</u> % <u>NA</u> %				
Width of Riparian Zone: <u>>100</u> ft. N/A <input type="checkbox"/>	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs Avg. DBH of Dominants: <i>(approx.)</i> <u>12</u> in. <u>3</u> in.			
Dominant Bank Vegetation <i>(list)</i> : LOBLOLLY PINE, HICKORY, WHITE OAK, POPLAR, RED MAPLE, CHRISTMAS FERN, ATHYRIUM				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): NA				
Aquatic Organisms Observed <i>(list)</i> : NA				
T&E Species Observed <i>(list)</i> : NA				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): PLANTED PINE				
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality ^a : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low				

Waterbody ID:
SBUL012

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

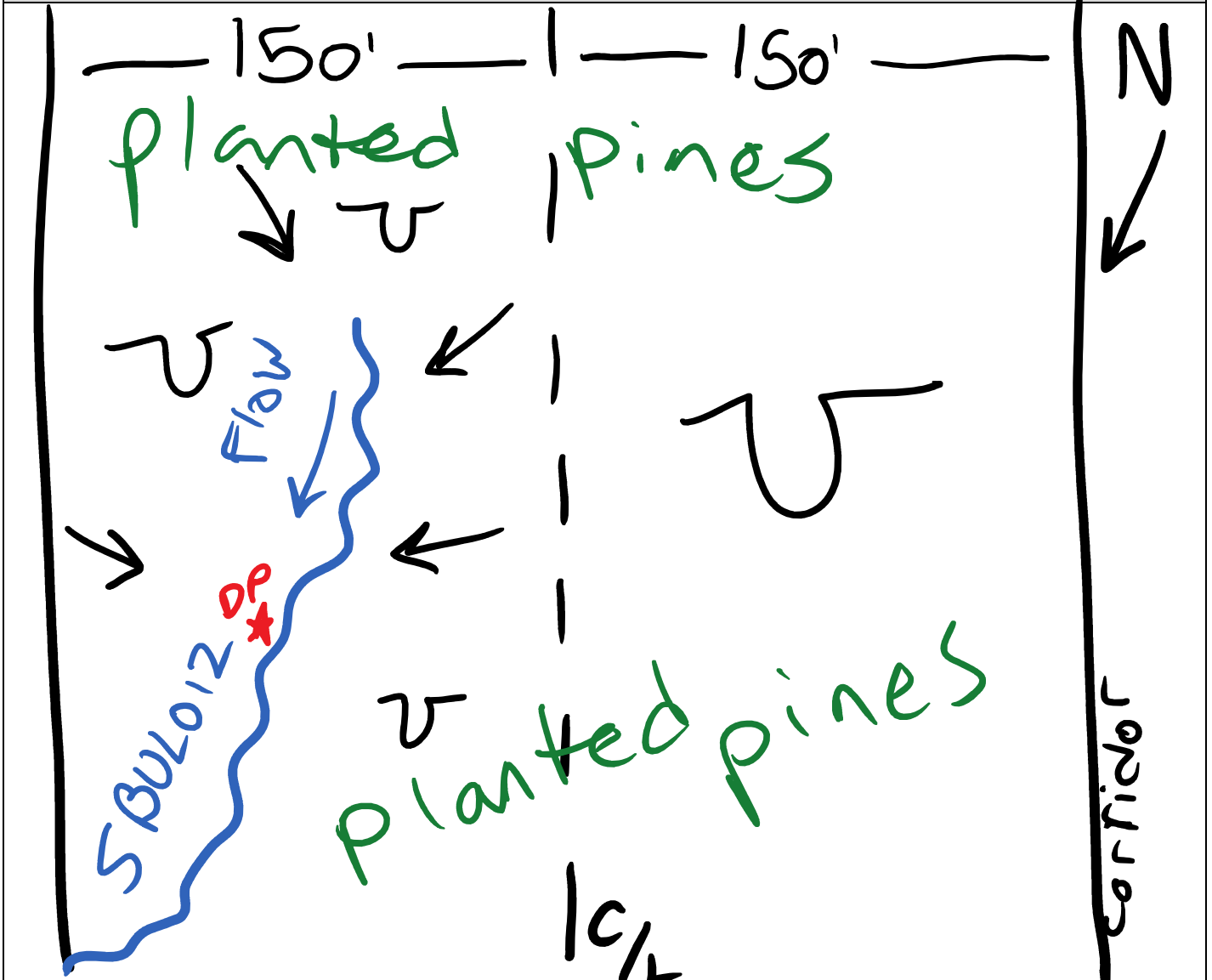
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

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

Notes:

DRY, HEADWATER EPHEMERAL STREAM

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





Waterbody point sbul012 facing West and downstream



Waterbody point sbul012 facing East and upstream



Waterbody point sbul012 facing North and across

Linear Waterbody Data Sheet

Survey Description				
Project Name: ATLANTIC COAST PIPELINE		Waterbody Name: UNT TO PITMAN CREEK		Waterbody ID: SBUL013
State: Virginia		County: Buckingham	Company: W&C	Crew Member Initials: WLM, RMS
Tract Number(s): 09-067		Nearest Milepost: 196		Photos: 100-1294 TO 1296
Associated Wetland ID(s): NA				
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial				
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: <u>3</u> ft. Height: <u>0.5</u> ft. N/A <input type="checkbox"/>		OHWM Indicator: <i>(check all that apply)</i> <input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
Width of Waterbody - Top of Bank to Top of Bank: <u>8</u> ft.		Width of Waterbody - Toe of Slope to Toe of Slope: <u>3</u> ft.		Depth of Water: <i>(Approx.)</i> <u> </u> ft.
Width of Waterbody - Water Edge to Water Edge: N/A <input checked="" type="checkbox"/>		Bank slope Right: <u>45</u> degrees Left: <u>45</u> degrees		
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> <u> </u> fps N/A <input checked="" type="checkbox"/>		Bank height Right: <u>1</u> ft. Left: <u>1</u> ft.
Qualitative Attributes				
Water Appearance: <i>(check one)</i> <input checked="" type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <i>(check all that apply)</i> <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input checked="" type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other: % of Substrate: <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>5</u> % <u>30</u> % <u>65</u> % <u>NA</u> % <u>NA</u> %				
Width of Riparian Zone: <u>>100</u> ft. N/A <input type="checkbox"/>		Vegetative Layers: <i>(check all that apply)</i> <input type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs Avg. DBH of Dominants: <i>(approx.)</i> <u> </u> in. <u>3</u> in.		
Dominant Bank Vegetation <i>(list)</i> : RUBUS, DOGWOOD, RED MAPLE, CHESTNUT OAK, SOURWOOD, PINE, SUMAC, BROOMSEDGE				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): SATURATED SAND/MUCK, CPOM				
Aquatic Organisms Observed <i>(list)</i> : NA				
T&E Species Observed <i>(list)</i> : NA				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): CLEARCUT IN RIPARIAN ZONE				
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality ^a : <i>(check one)</i> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low				

Waterbody ID:
SBUL013

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

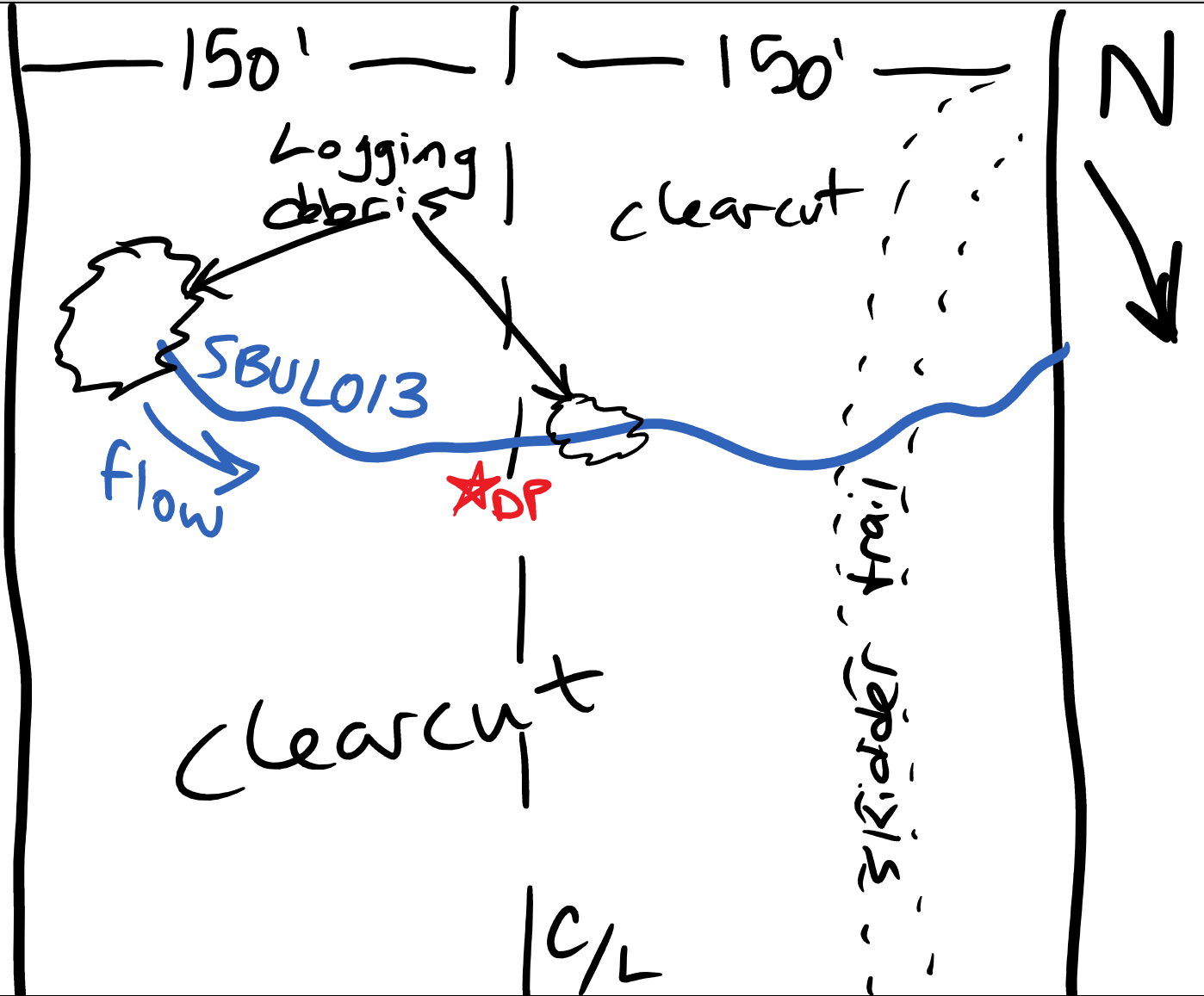
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

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

Notes:

HEADWATER INTERMITTENT STREAM WITH LOGGING DEBRIS IN MANY LOCATIONS AND SKIDDER TRAIL ACROSS CHANNEL

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





Waterbody point sbul013 facing West and downstream



Waterbody point sbul013 facing East and upstream



Waterbody point sbul013 facing South and across

Linear Waterbody Data Sheet

Survey Description				
Project Name: <u>ACP</u>		Waterbody Name: <u>4NT to Pitman Creek</u>	Waterbody ID: <u>sbup003</u>	Date: <u>5/28/15</u>
State: <u>VA</u>	County/Parish: <u>Buckingham</u>	Company: <u>ESI</u>	Crew Member Initials: <u>LR, RT</u>	Photos: <u>Facing E, W, S</u>
Tract Number(s): <u>09-067</u>		Nearest Milepost: <u>195(76)</u>	Associated Wetland ID(s): <u>wbup002</u>	
Survey Type: <small>(check one)</small> <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: <small>(check one)</small> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial				
Waterbody Type: <small>(check one)</small> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: <u>3</u> ft. Height: <u>1/2</u> ft. N/A <input type="checkbox"/>		OHWM Indicator: <small>(check all that apply)</small> <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
Width of Waterbody - Top of Bank to Top of Bank: <u>5</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>3</u> ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> <u>1</u> ft.	Depth of Water: <small>(Approx.)</small> N/A <input type="checkbox"/> <u>3</u> ft.	
Sinuosity: <small>(check one)</small> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering	Water velocity: <small>(Approx.)</small> <u><1</u> fps N/A <input type="checkbox"/>	Bank height Right: <u>3</u> ft. Left: <u>3</u> ft.	Bank slope Right: <u>90</u> degrees Left: <u>90</u> degrees	
Qualitative Attributes				
Water Appearance: <small>(check one)</small> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <small>(check all that apply)</small> <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other: % of Substrate: _____ % _____ % _____ % _____ % <u>70</u> % <u>30</u> % _____ % _____ %				
Width of Riparian Zone: <u>50</u> ft. N/A <input type="checkbox"/>		Vegetative Layers: <small>(check all that apply)</small> Avg. DBH of Dominants: <small>(approx)</small> <input checked="" type="checkbox"/> Trees: <u>10</u> in. <input checked="" type="checkbox"/> Saplings/Shrubs: <u>2</u> in. <input checked="" type="checkbox"/> Herbs: <u>NA</u> in.		
Dominant Bank Vegetation (list): <u>Smilax rotundifolia, Liquidambar styraciflua, Polystichum acrostichoides</u>				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): <u>overhanging roots/banks</u>				
Aquatic Organisms Observed (list): <u>none observed</u>				
T&E Species Observed (list): <u>none observed</u>				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): <u>on edge of pasture</u>				
Tributary is: <small>(check one)</small> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality *: <small>(check one)</small> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:

sbup 003

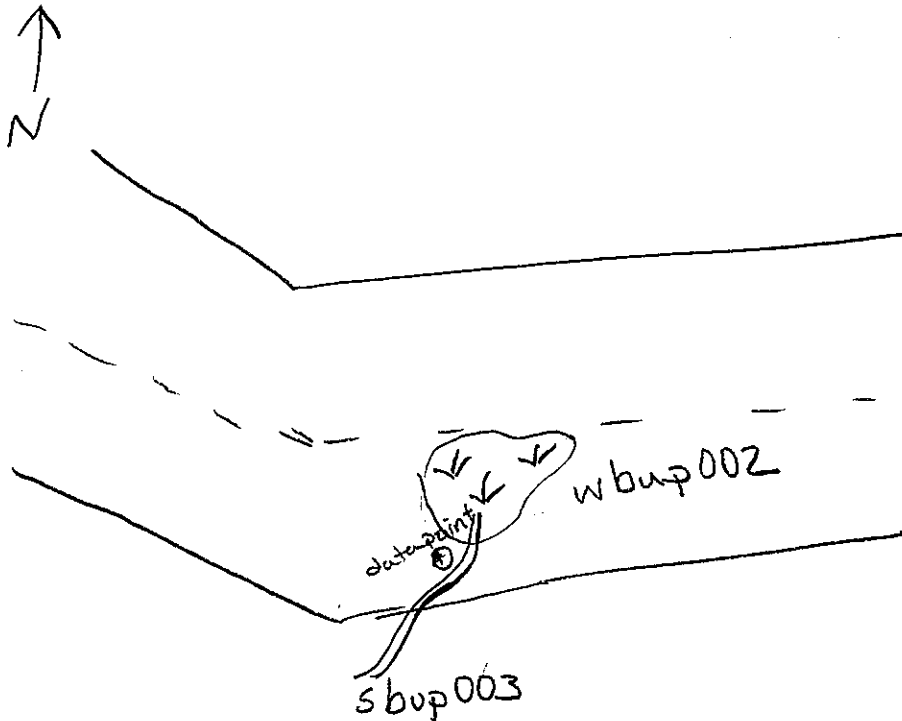
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

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

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

Notes:

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



Environmental Field Surveys
Waterbody Photo Page



Waterbody sbup003 facing east upstream.



Waterbody sbup003 facing west downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody sbup003 facing south across bank.

Linear Waterbody Data Sheet

Survey Description				
Project Name: ACP		Waterbody Name: HORSEPEN Creek		Waterbody ID: sbup002
Date: 5/27/15				
State: VA	County/Parish: Buckingham	Company: ESI	Crew Member Initials: LR, RT	Photos: Facing S, N, E
Tract Number(s): 09-074. AR		Nearest Milepost: 195.6(76)	Associated Wetland ID(s): wbup001	
Survey Type: (check one) <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: (check one) <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial				
Waterbody Type: (check one) <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: 4 ft.		OHWM Indicator: (check all that apply)		
OHWM Height: 1 ft.		<input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
N/A <input type="checkbox"/>				
Width of Waterbody - Top of Bank to Top of Bank: 9 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 3 ft.	Width of Waterbody - Water Edge to Water Edge: 4 ft.	Depth of Water: (Approx.) 1/2 ft.	
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>		
Sinuosity: (check one) <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering		Water velocity: (Approx.) 1 fps		Bank height Right: 4 ft. Left: 4 ft.
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>		Bank slope Right: 70 degrees Left: 70 degrees
Qualitative Attributes				
Water Appearance: (check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: (check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input checked="" type="checkbox"/> Cobble <input checked="" type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:				
% of Substrate: _____ % _____ % 30 % 30 % 40 % _____ % _____ % _____ %				
Width of Riparian Zone: 100 ft.		Vegetative Layers: (check all that apply)		
N/A <input type="checkbox"/>		Avg. DBH of Dominants: (approx.) <input checked="" type="checkbox"/> Trees: 10 in. <input checked="" type="checkbox"/> Saplings/Shrubs: 2 in. <input checked="" type="checkbox"/> Herbs: _____ in.		
Dominant Bank Vegetation (list): Ilex opaca, Pinus taeda, Polystichum acrostichoides				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): leaf packs, overhanging banks/roots				
Aquatic Organisms Observed (list): none observed				
T&E Species Observed (list): none observed				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): crosses small powerline easement				
Tributary is: (check one) <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality: (check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:

sbup002

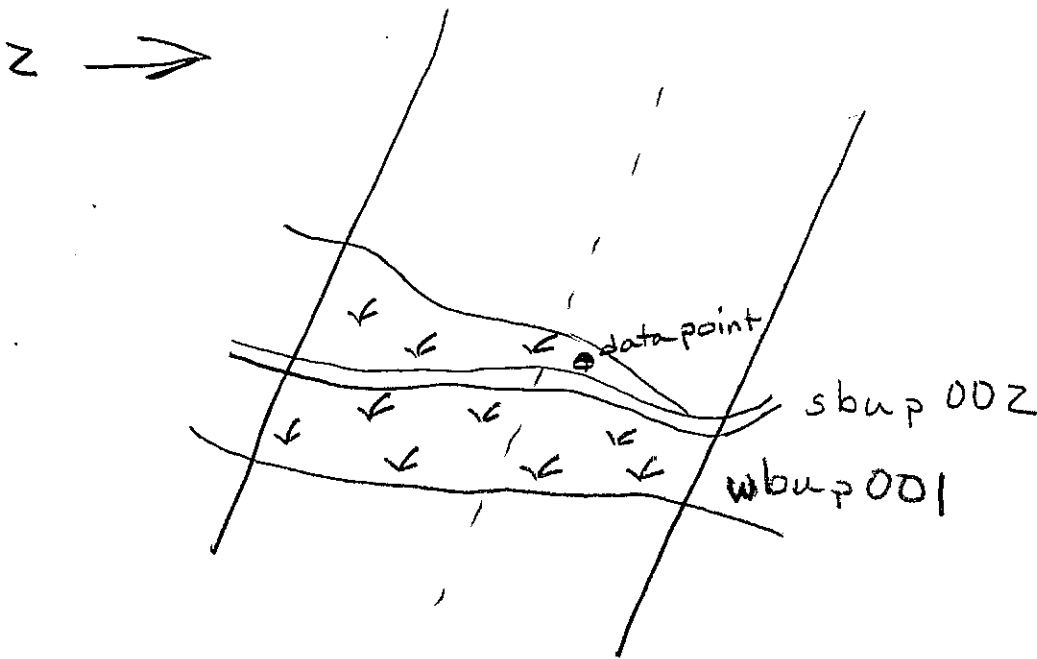
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

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

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

Notes:

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



Environmental Field Surveys
Waterbody Photo Page



Waterbody sbup002 facing south upstream.



Waterbody sbup002 facing north downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody sbup002 facing east across bank.

Linear Waterbody Data Sheet

Survey Description			
Project Name: ACP	Waterbody Name: LINT to Hoeseper Creek	Waterbody ID: sbup 001	Date: 5/27/15
State: VA	County/Parish: Buckingham	Company: ESI	Crew Member Initials: LR, RT
Photos: Facing S, E, W			
Tract Number(s): 09-074.AR		Nearest Milepost: 195.7(7b)	Associated Wetland ID(s): none
Survey Type: (check one) <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: (check one) <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: (check one) <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: 3 ft.		OHWM Indicator: (check all that apply) <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
OHWM Height: 1 ft.		<input type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
N/A <input type="checkbox"/>			
Width of Waterbody - Top of Bank to Top of Bank: 7 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 2 ft.	Width of Waterbody - Water Edge to Water Edge: 3 ft.	Depth of Water: (Approx.) < 1 ft.
Sinuosity: (check one) <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering		Water velocity: (Approx.) < 1 fps	Bank height: Right: 4 ft. Left: 4 ft.
N/A <input type="checkbox"/>		Bank slope: Right: 60 degrees Left: 60 degrees	
Qualitative Attributes			
Water Appearance: (check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: (check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input checked="" type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:			
% of Substrate: _____ % _____ % _____ % 10 % 30 % 60 % _____ % _____ %			
Width of Riparian Zone: 50 ft.	Vegetative Layers: (check all that apply) <input checked="" type="checkbox"/> Trees: 10 in. <input checked="" type="checkbox"/> Saplings/Shrubs: 3 in. <input checked="" type="checkbox"/> Herbs: NA in.		
N/A <input type="checkbox"/>			
Dominant Bank Vegetation (list): Acer rubrum, Liriodendron tulipifera			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): leaf packs			
Aquatic Organisms Observed (list): none observed			
T&E Species Observed (list): none observed			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): forested edge near clearcut			
Tributary is: (check one) <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality*: (check one) <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:

Sbup 001

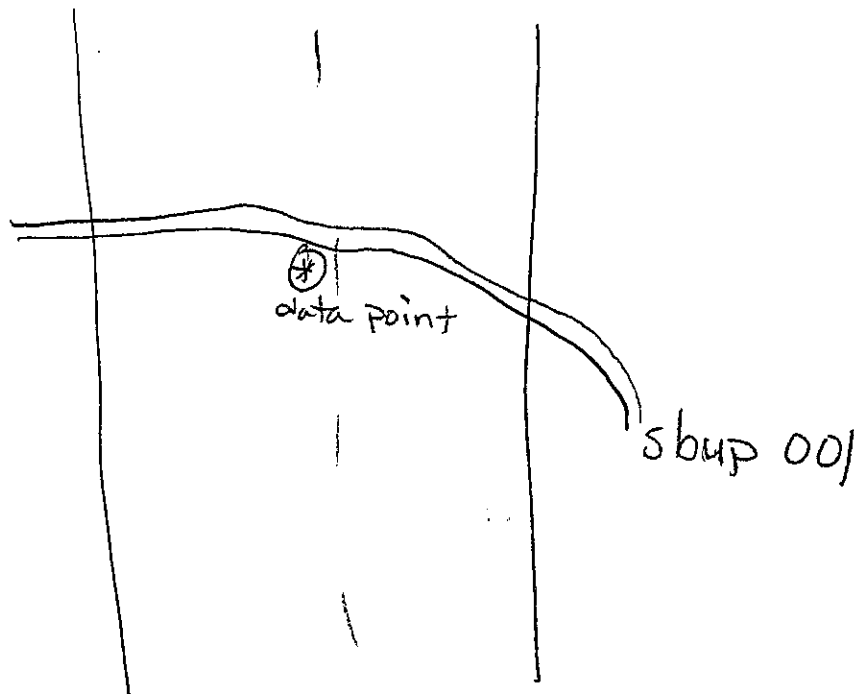
High Quality: Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

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

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

Notes:

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



Environmental Field Surveys
Waterbody Photo Page



Waterbody sbup001 facing east upstream.



Waterbody sbup001 facing west downstream.

Environmental Field Surveys
Waterbody Photo Page



Waterbody sbup001 facing south across bank.

Linear Waterbody Data Sheet

Survey Description				
Project Name: ATLANTIC COAST PIPELINE		Waterbody Name: UNT TO HORSEPEN CREEK		Waterbody ID: SBUL014
State: Virginia		County: Buckingham	Company: W&C	Crew Member Initials: WLM, RMS
Tract Number(s): 09-076		Nearest Milepost: 198		Photos: 100-1350 TO 1352
Associated Wetland ID(s): NA				
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial				
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: <u>3</u> ft. Height: <u>0.5</u> ft. N/A <input type="checkbox"/>		OHWM Indicator: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Clear line on bank <input checked="" type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
Width of Waterbody - Top of Bank to Top of Bank: <u>5</u> ft.		Width of Waterbody - Toe of Slope to Toe of Slope: <u>3</u> ft.		Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> <u>0.2</u> ft.
Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> <u>2</u> ft.		Bank height Right: <u>1</u> ft. Left: <u>1</u> ft.		Bank slope Right: <u>30</u> degrees Left: <u>30</u> degrees
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> <u>0.3</u> fps N/A <input type="checkbox"/>		
Qualitative Attributes				
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <i>(check all that apply)</i> % of Substrate: <u>NA</u> % <u>NA</u> % <u>15</u> % <u>10</u> % <u>NA</u> % <u>75</u> % <u>NA</u> % <u>NA</u> %				
Width of Riparian Zone: N/A <input type="checkbox"/> <u>>100</u> ft.		Vegetative Layers: <i>(check all that apply)</i> Avg. DBH of Dominants: <i>(approx.)</i> <u>10</u> in. <u>2</u> in.		
Dominant Bank Vegetation <i>(list)</i> : PINE, RED MAPLE, TULIP POPLAR, BLACK CHERRY, DEERTONGUE, ATHYRIUM, EUPATORIUM SPP.				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): COBBLE, SMALL RIFFLES, CPOM, LWD, OVERHANGING VEG				
Aquatic Organisms Observed <i>(list)</i> : NA				
T&E Species Observed <i>(list)</i> : NA				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): LOGGING IN NEARBY RIPARIAN ZONE				
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality ^a : <i>(check one)</i> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:
SBUL014

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

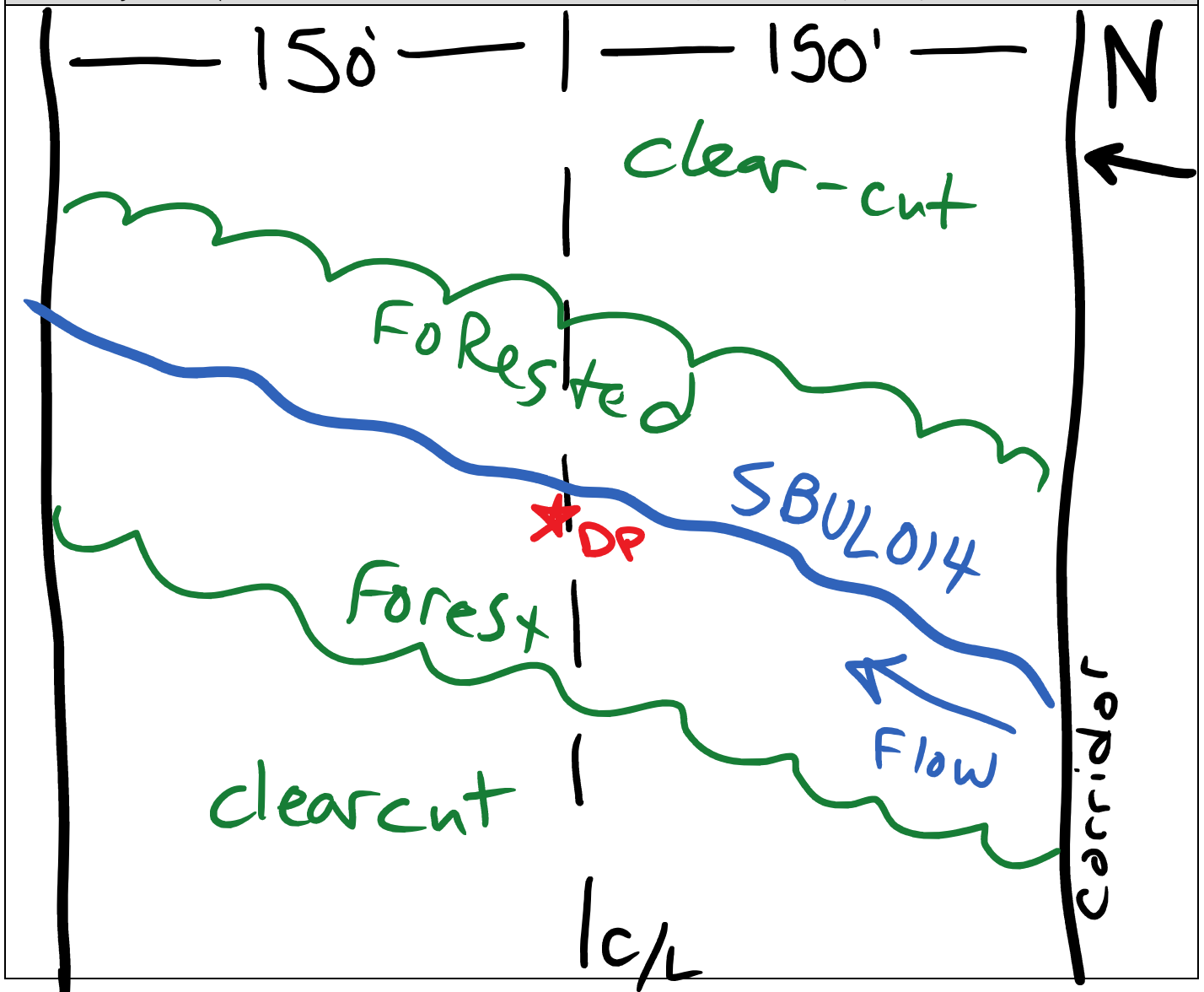
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

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

Notes:

HEADWATER INTERMITTENT STREAM; DIVERSE FORB COMMUNITY ALONG STREAM; SEEPY STREAMBANKS

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





Waterbody data point sbul014 facing South and upstream



Waterbody data point sbul014 facing North and downstream



Waterbody data point sbul014 facing East and
across

Linear Waterbody Data Sheet

Survey Description				
Project Name: ATLANTIC COAST PIPELINE		Waterbody Name: UNT TO HORSEPEN CREEK		Waterbody ID: SBUL015
State: Virginia		County: Buckingham	Company: W&C	Crew Member Initials: WLM, RMS
Tract Number(s): 09-076		Nearest Milepost: 198	Associated Wetland ID(s): WBUL005	
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial				
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: <u>6</u> ft. Height: <u>1</u> ft. N/A <input type="checkbox"/>		OHWM Indicator: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Clear line on bank <input checked="" type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input checked="" type="checkbox"/> Soil characteristic change		
Width of Waterbody - Top of Bank to Top of Bank: <u>11</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>6</u> ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> <u>3</u> ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> <u>1.5</u> ft.	
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> <u>1</u> fps N/A <input type="checkbox"/>	Bank height Right: <u>2.5</u> ft. Left: <u>1</u> ft.	Bank slope Right: <u>80</u> degrees Left: <u>10</u> degrees	
Qualitative Attributes				
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <i>(check all that apply)</i> % of Substrate: <u>NA</u> % <u>NA</u> % <u>30</u> % <u>50</u> % <u>15</u> % <u>NA</u> % <u>5</u> % <u>NA</u> %				
Width of Riparian Zone: <u>>100</u> ft. N/A <input type="checkbox"/>	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs Avg. DBH of Dominants: <i>(approx.)</i> <u>10</u> in. <u>2</u> in.			
Dominant Bank Vegetation <i>(list)</i> : BEECH, PINE, RED MAPLE, ATHYRIUM, CAREX, ASTER				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): RIFFLES, POOLS, LWD, COBBLES, UNDERCUT BANKS, LEAF PACKS, CPOM				
Aquatic Organisms Observed <i>(list)</i> : FISH, EPT				
T&E Species Observed <i>(list)</i> : NA				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): LOGGING IN NEARBY RIPARIAN ZONE				
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality ^a : <i>(check one)</i> <input checked="" type="checkbox"/> High <input type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:
SBUL015

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

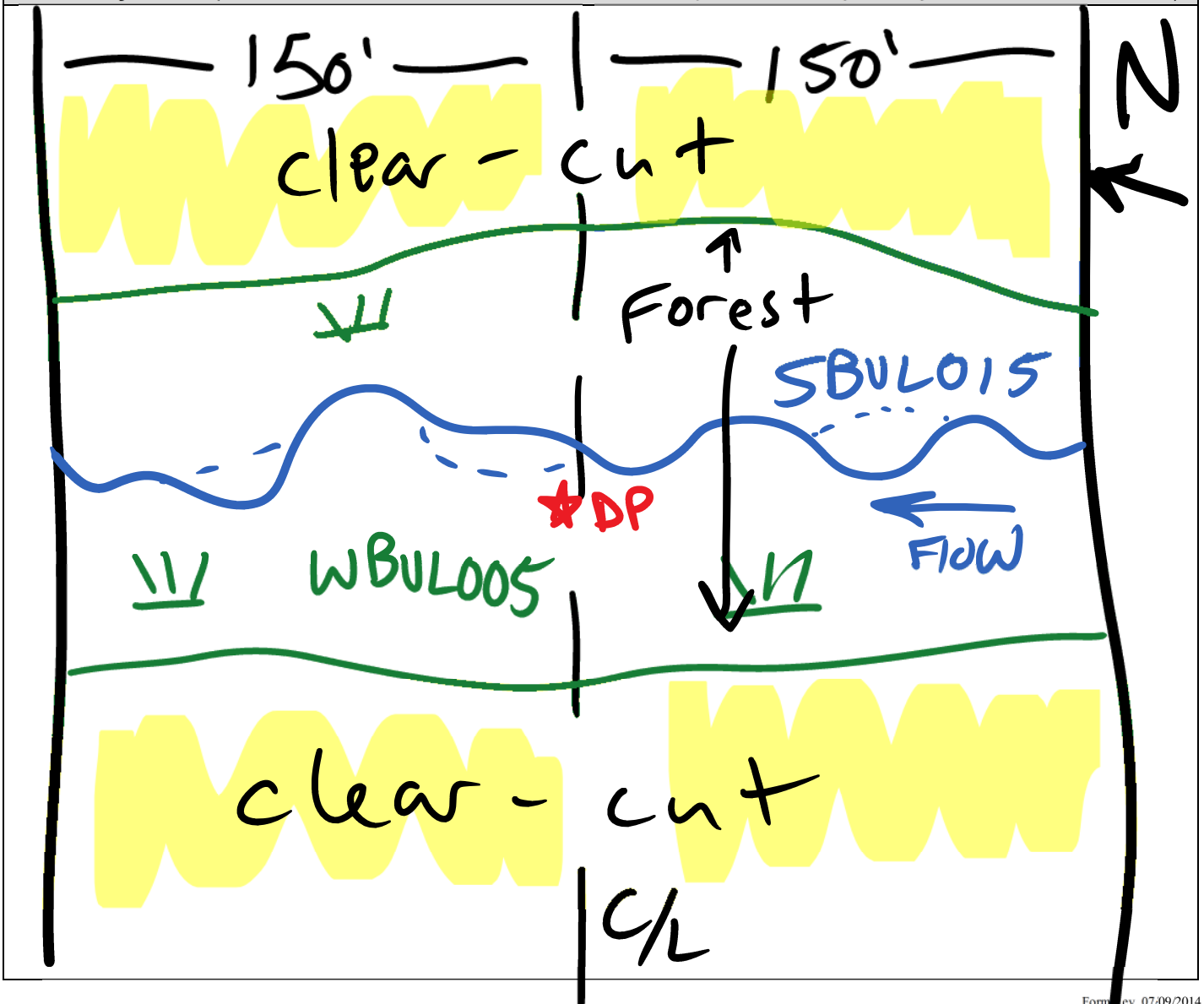
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

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

Notes:

HIGH QUALITY PERENNIAL STREAM; SOME BRAIDING AND SEEPAGE AREAS; DIVERSE FORB COMMUNITY

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





Waterbody data point sbul015 facing South and upstream



Waterbody data point sbul015 facing North and downstream



Waterbody data point sbul015 facing East and
across

Linear Waterbody Data Sheet

Survey Description				
Project Name: ATLANTIC COAST PIPELINE		Waterbody Name: UNT to Willis River		Waterbody ID: SBUL004
State: Virginia		County: Buckingham	Company: W&C	Crew Member Initials: WLM, RMS
Tract Number(s): 09-080		Nearest Milepost: 199		Photos: 100-1072 TO 1074
Associated Wetland ID(s): NA				
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: <i>(check one)</i> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial				
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: <u>2</u> ft. Height: <u>0.5</u> ft. N/A <input type="checkbox"/>		OHWM Indicator: <i>(check all that apply)</i> <input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
Width of Waterbody - Top of Bank to Top of Bank: <u>4</u> ft.		Width of Waterbody - Toe of Slope to Toe of Slope: <u>2</u> ft.		Width of Waterbody - Water Edge to Water Edge: N/A <input checked="" type="checkbox"/> _____ ft.
Depth of Water: <i>(Approx.)</i> N/A <input checked="" type="checkbox"/> _____ ft.				
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> _____ fps N/A <input checked="" type="checkbox"/>		Bank height Right: <u>2</u> ft. Left: <u>2</u> ft.
Bank slope Right: <u>50</u> degrees Left: <u>50</u> degrees				
Qualitative Attributes				
Water Appearance: <i>(check one)</i> <input checked="" type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <i>(check all that apply)</i> <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input type="checkbox"/> Gravel <input type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:				
% of Substrate: <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>100</u> % <u>NA</u> % <u>NA</u> %				
Width of Riparian Zone: <u>>100</u> ft. N/A <input type="checkbox"/>		Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs Avg. DBH of Dominants: <i>(approx.)</i> <u>12</u> in. <u>2</u> in.		
Dominant Bank Vegetation <i>(list)</i> : RED MAPLE, CEDAR, DOGWOOD, SMILAX				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): NA				
Aquatic Organisms Observed <i>(list)</i> : NA				
T&E Species Observed <i>(list)</i> : NA				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA				
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality ^a : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low				

Waterbody ID:
SBUL004

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

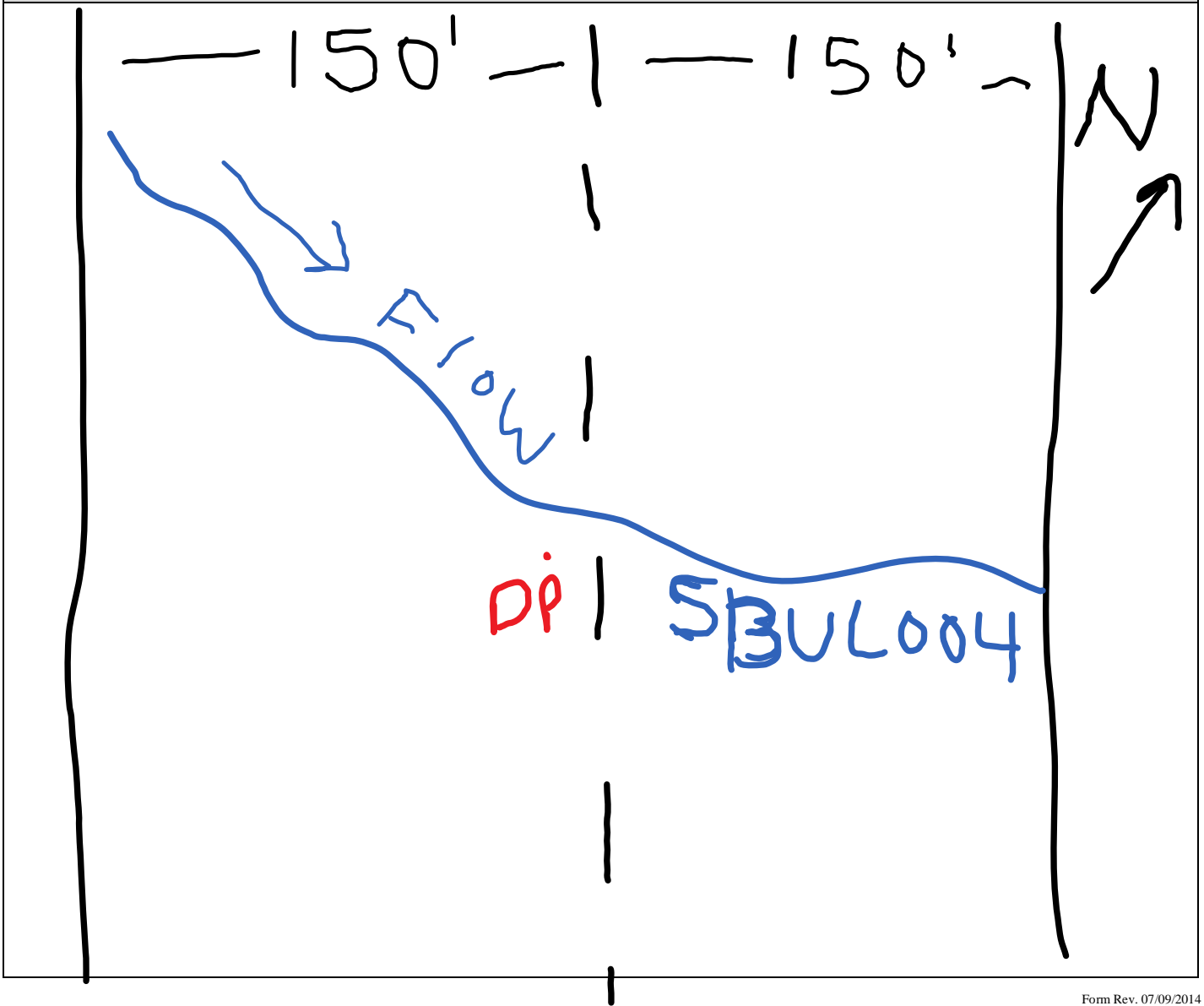
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

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

Notes:

HEADWATER EPHEMERAL

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





Waterbody point sbul004 facing West and upstream



Waterbody point sbul004 facing Northeast and downstream



Waterbody point sbul004 facing North and across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Willis River	
Waterbody ID: sbul003		Date: 9/8/2014	
State: Virginia	County: Buckingham	Company: W&C	Crew Member Initials: RS, WM
Photos: 100-1063 to 1065			
Tract Number(s): 09-082 and 083		Nearest Milepost: 199	Associated Wetland ID(s): wbul002f
Survey Type: <small>(check one)</small>			
<input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: <small>(check one)</small>			
<input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial			
Waterbody Type: <small>(check one)</small>			
<input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: _ 8 _ ft.		OHWM Indicator: <small>(check all that apply)</small>	
Height: _ 1 _ ft.		<input checked="" type="checkbox"/> Clear line on bank <input checked="" type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
N/A <input type="checkbox"/>		<input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: _ 10 _ ft.	Width of Waterbody - Toe of Slope to Toe of Slope: _ 7 _ ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> _ 6 _ ft.	Depth of Water: <small>(Approx.)</small> N/A <input type="checkbox"/> _ 0.5-2.5 _ ft.
Sinuosity: <small>(check one)</small>	Water velocity: <small>(Approx.)</small>	Bank height	Bank slope
<input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering	Right: _ 1.5 _ fps Left: N/A <input type="checkbox"/>	Right: _ 3 _ ft. Left: _ 2.75 _ ft.	Right: _ 85 _ degrees Left: _ 70 _ degrees
Qualitative Attributes			
Water Appearance: <small>(check one)</small>			
<input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <small>(check all that apply)</small>			
<input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input checked="" type="checkbox"/> Cobble <input checked="" type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:			
% of Substrate: _ NA % _ NA % _ 10 % _ 15 % _ 65 % _ 10 % _ NA % _ NA %			
Width of Riparian Zone: _ >100 _ ft.		Vegetative Layers: <small>(check all that apply)</small>	
N/A <input type="checkbox"/>		<input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs	
Avg. DBH of Dominants: <small>(approx.)</small>		_ 6 _ in. _ 2 _ in.	
Dominant Bank Vegetation <small>(list)</small> : Sycamore, red maple, black gum, microstegium, jewelweed, st. johnswort, ferns			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Deep pools, riffles, large woody debris, overhanging banks, leaf packs			
Aquatic Organisms Observed <small>(list)</small> : Water striders, minnows, frogs, stonefly, mayfly, beetle			
T&E Species Observed <small>(list)</small> : none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): none			
Tributary is: <small>(check one)</small>			
<input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality ³ : <small>(check one)</small>			
<input checked="" type="checkbox"/> High <input type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:

sbul003

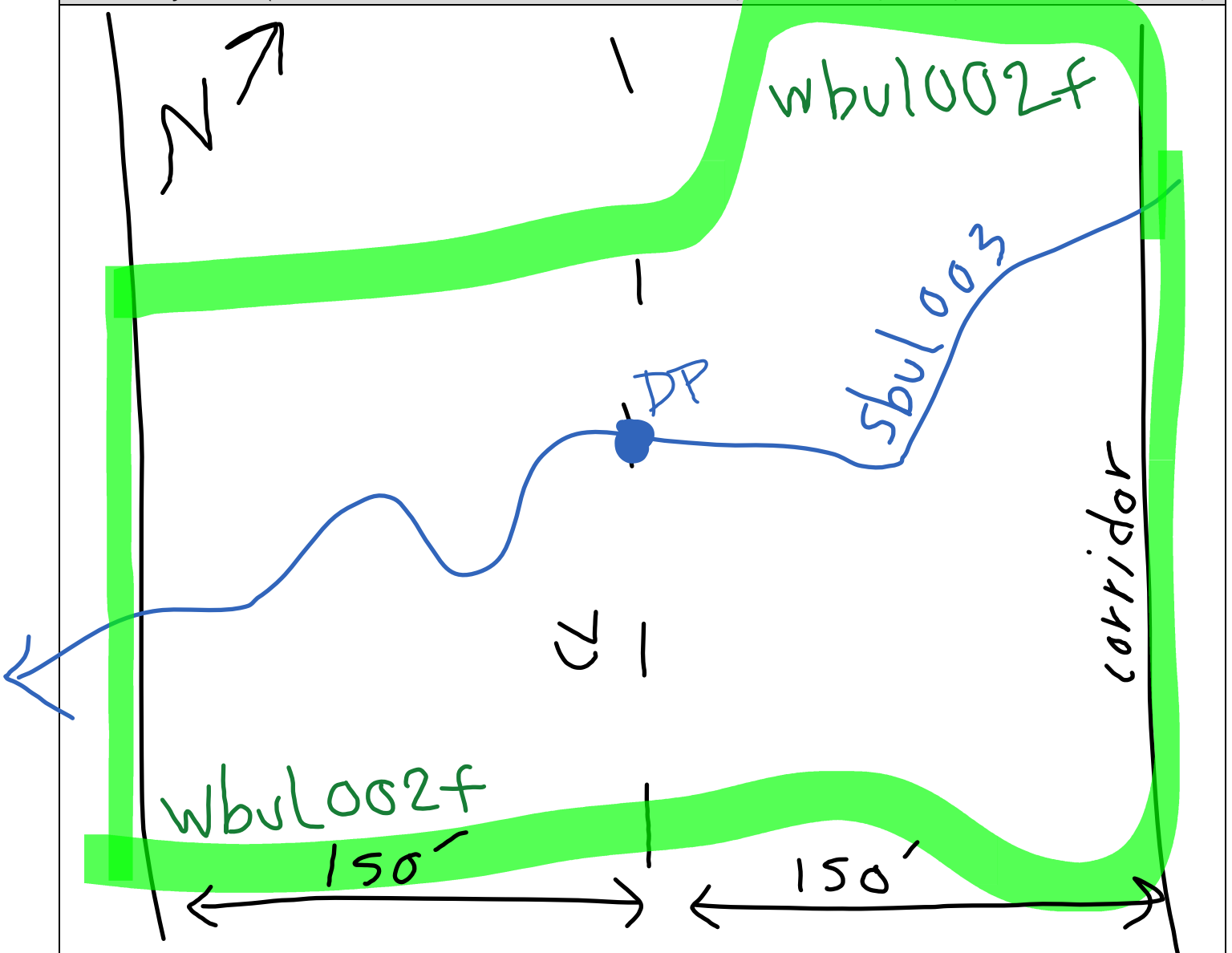
^a **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

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

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

Notes:

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





Waterbody data point sbul003 facing northeast,
upstream



Waterbody data point sbul003 facing southwest,
downstream



Waterbody data point sbul003 facing across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: UNT to Willis River	
Waterbody ID: sbul002		Date: 9/8/2014	
State: Virginia	County: Buckingham	Company: W&C	Crew Member Initials: RS, WM
Photos: 100-1035 to 1037			
Tract Number(s): 09-083		Nearest Milepost: 199	Associated Wetland ID(s): wbul001
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: _4_ ft.		OHWM Indicator: <i>(check all that apply)</i>	
Height: _1_ ft.		<input checked="" type="checkbox"/> Clear line on bank <input checked="" type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
N/A <input type="checkbox"/>		<input type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input checked="" type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: _8_ ft.	Width of Waterbody - Toe of Slope to Toe of Slope: _4_ ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> _3_ ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> _0.5_ ft.
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> _0-2_ fps N/A <input type="checkbox"/>	Bank height Right: _3_ ft. Left: _3_ ft.	Bank slope Right: _60_ degrees Left: _45_ degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i>			
% of Substrate: <u>NA</u> % <u>5</u> % <u>15</u> % <u>15</u> % <u>30</u> % <u>35</u> % <u>NA</u> % <u>NA</u> %			
Width of Riparian Zone: N/A <input type="checkbox"/> >100 ft.	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs		
Avg. DBH of Dominants: <i>(approx.)</i> <u>12</u> in. <u>3</u> in.			
Dominant Bank Vegetation <i>(list)</i> : Maple poplar sweetgum			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Riffle/pool, woody debris, undercut banks, boulders/cobble			
Aquatic Organisms Observed <i>(list)</i> : EPT			
T&E Species Observed <i>(list)</i> : none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): none			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality ³ : <i>(check one)</i> <input checked="" type="checkbox"/> High <input type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:

sbu002

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

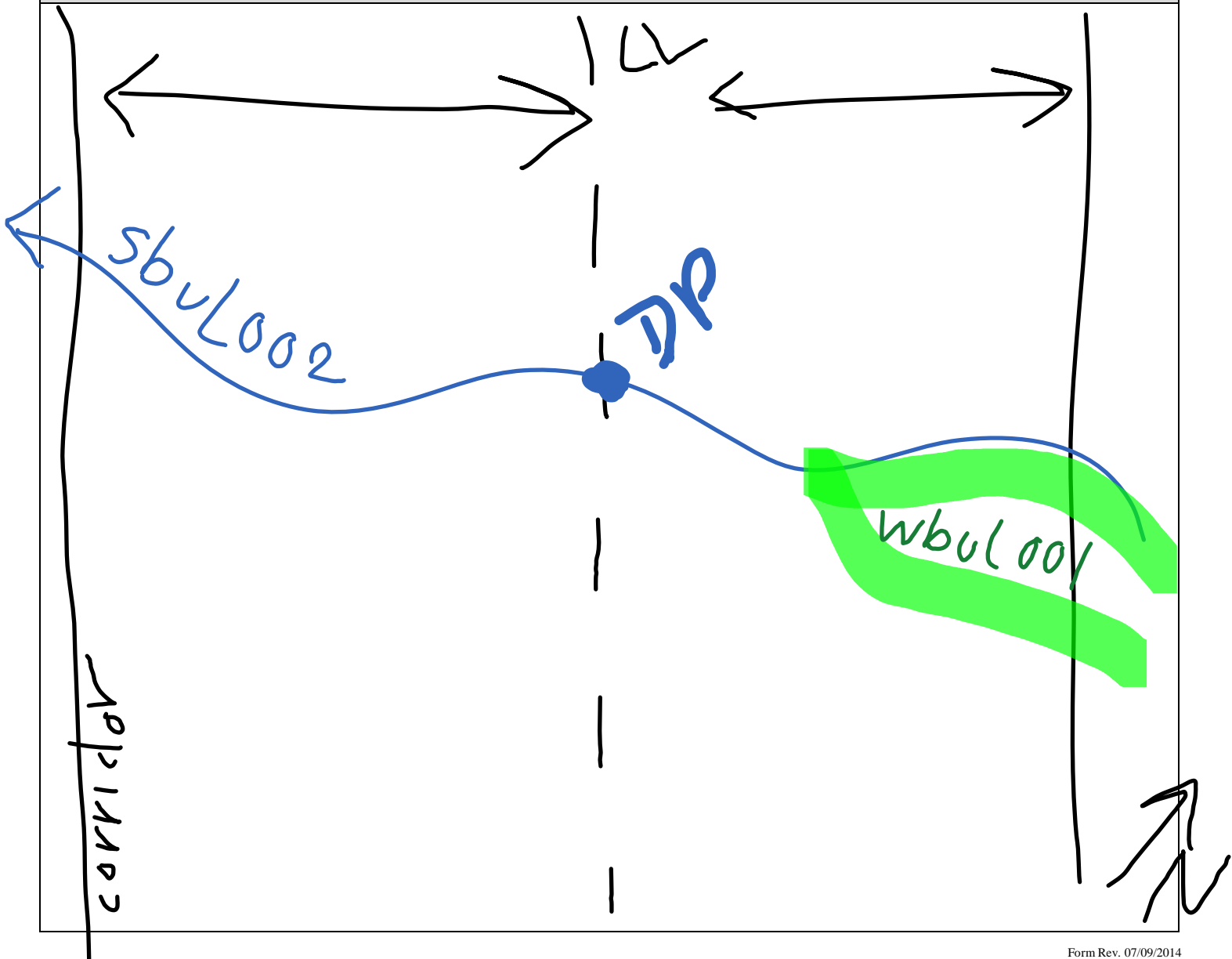
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

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

Notes:

Good quality headwater perennial stream.

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





Waterbody data point sbul002 facing east, upstream



Waterbody data point sbul002 facing west,
downstream



Waterbody data point sbul002 facing, across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: UNT to Willis River	
Waterbody ID: Sbue001		Date: 2/23/2016	
State: Virginia	County: Buckingham	Company: NRG	Crew Member Initials: CG, AS
Photos: 1-3			
Tract Number(s): 09-086		Nearest Milepost: 204.2	Associated Wetland ID(s): none
Survey Type: <i>(check one)</i> <input type="checkbox"/> Centerline <input checked="" type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: _ 2 _ ft.		OHWM Indicator: <i>(check all that apply)</i>	
Height: _ 1 _ ft.		<input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
N/A <input type="checkbox"/>		<input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input checked="" type="checkbox"/> Abrupt plant community change <input checked="" type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: _ 12 _ ft.	Width of Waterbody - Toe of Slope to Toe of Slope: _ 2 _ ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> _ 2 _ ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> _ 0.5 _ ft.
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> _ 1 _ fps N/A <input type="checkbox"/>	Bank height Right: _ 3 _ ft. Left: _ 4 _ ft.	Bank slope Right: _ 30 _ degrees Left: _ 75 _ degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i>			
% of Substrate: _____ % _____ % _____ % <u>20</u> % <u>40</u> % <u>40</u> % _____ % _____ %			
Width of Riparian Zone: _ 10 _ ft. N/A <input type="checkbox"/>	Vegetative Layers: <i>(check all that apply)</i>		
	<input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs		
	Avg. DBH of Dominants: <i>(approx.)</i> _ 5 _ in. _ 1 _ in.		
Dominant Bank Vegetation <i>(list)</i> : Fern, maple, greenbrier			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Large woody debris			
Aquatic Organisms Observed <i>(list)</i> : none			
T&E Species Observed <i>(list)</i> : none			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): none			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality ³ : <i>(check one)</i> <input checked="" type="checkbox"/> High <input type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:

Sbue001

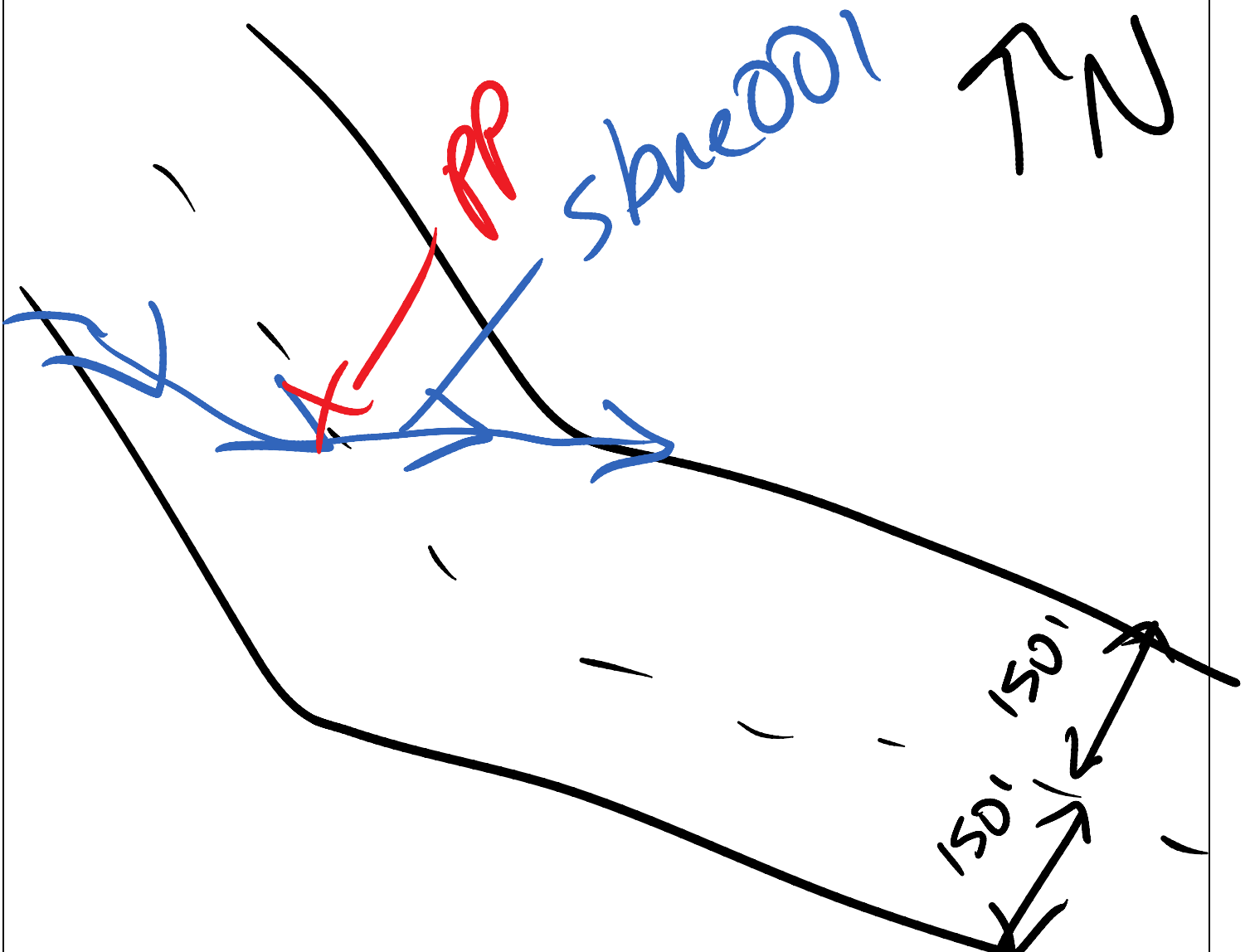
^a **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

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

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

Notes:

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





SBUE001 facing west upstream



SBUE001 facing east downstream



SBUE001 facing south across

Linear Waterbody Data Sheet

Survey Description				
Project Name: ATLANTIC COAST PIPELINE		Waterbody Name: UNT TO WILLIS RIVER		Waterbody ID: SBUL005
Date: 9/9/2014				
State: Virginia	County: Buckingham	Company: W&C	Crew Member Initials: WLM, RMS	Photos: 100-1079 TO 1081
Tract Number(s): 09-088 and 09-086		Nearest Milepost: 200	Associated Wetland ID(s): NA	
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: <i>(check one)</i> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial				
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: <u>2</u> ft. Height: <u>0.5</u> ft. N/A <input type="checkbox"/>		OHWM Indicator: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input checked="" type="checkbox"/> Soil characteristic change		
Width of Waterbody - Top of Bank to Top of Bank: <u>4</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>2</u> ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input checked="" type="checkbox"/> _____ ft.	Depth of Water: <i>(Approx.)</i> _____ ft.	
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> _____ fps N/A <input checked="" type="checkbox"/>	Bank height Right: <u>1</u> ft. Left: <u>1</u> ft.	Bank slope Right: <u>55</u> degrees Left: <u>55</u> degrees	
Qualitative Attributes				
Water Appearance: <i>(check one)</i> <input checked="" type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <i>(check all that apply)</i> <input type="checkbox"/> Bedrock <input checked="" type="checkbox"/> Boulder <input checked="" type="checkbox"/> Cobble <input checked="" type="checkbox"/> Gravel <input type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other: % of Substrate: <u>NA</u> % <u>5</u> % <u>5</u> % <u>10</u> % <u>NA</u> % <u>80</u> % <u>NA</u> % <u>NA</u> %				
Width of Riparian Zone: <u>>100</u> ft. N/A <input type="checkbox"/>	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs Avg. DBH of Dominants: <i>(approx.)</i> <u>14</u> in. <u>3</u> in.			
Dominant Bank Vegetation <i>(list)</i> : WHITE OAK, WHITE ASH, PAW PAW, DOGWOOD, BLACK HAW, CHRISTMAS FERN				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): NA				
Aquatic Organisms Observed <i>(list)</i> : NA				
T&E Species Observed <i>(list)</i> : NA				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA				
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality ^a : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low				

Waterbody ID:
SBUL005

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

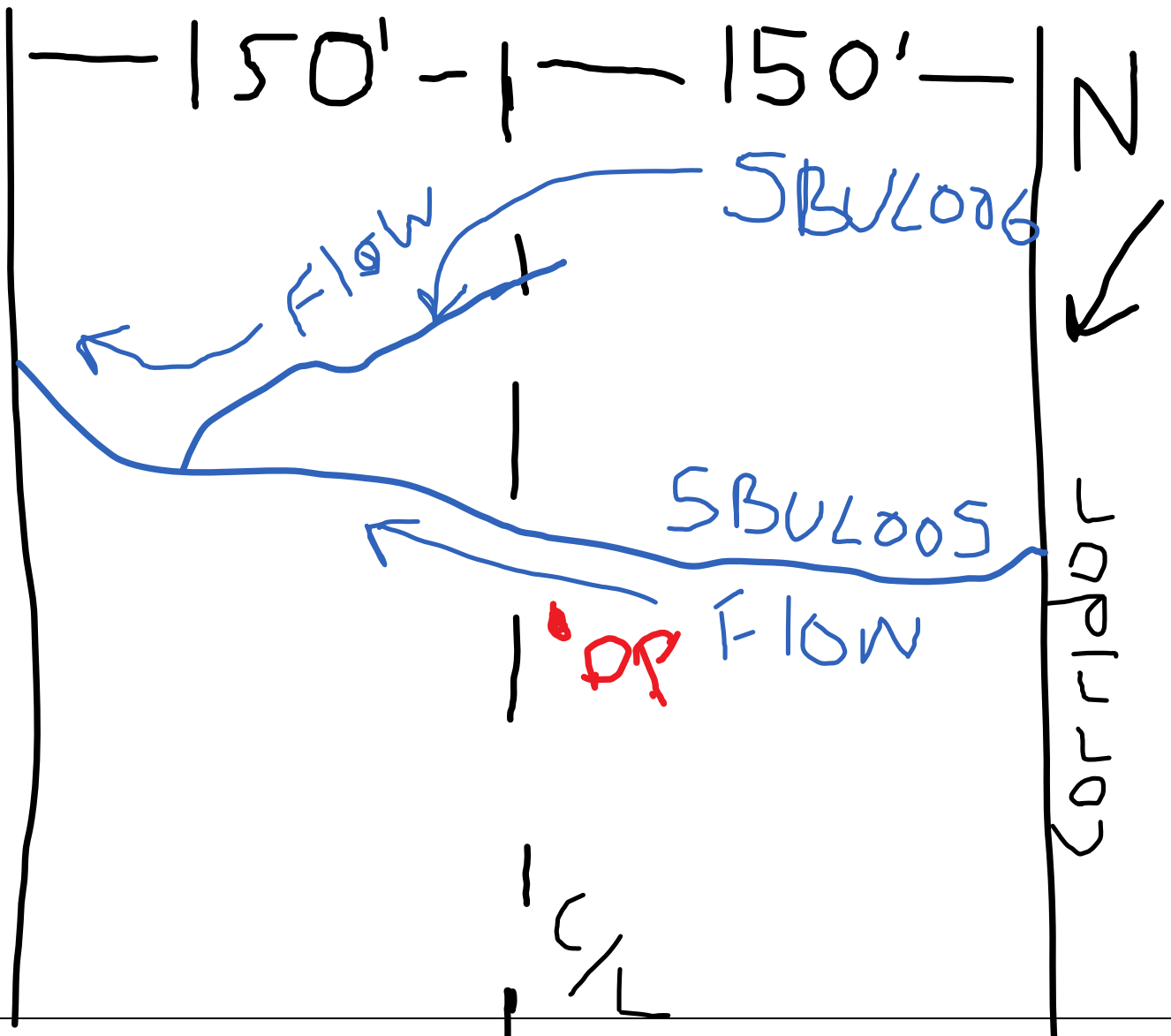
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

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

Notes:

HEADWATER EPHEMERAL

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





Waterbody point sbul005 facing South and upstream



Waterbody point sbul005 facing North and downstream



Waterbody point sbul005 facing East and across

Linear Waterbody Data Sheet

Survey Description				
Project Name: ATLANTIC COAST PIPELINE		Waterbody Name: UNT TO WILLIS RIVER		Waterbody ID: SBUL006
State: Virginia		County: Buckingham	Company: W&C	Crew Member Initials: WLM, RMS
Tract Number(s): 09-088		Nearest Milepost: 200		Photos: 100-1082 TO 1084
Associated Wetland ID(s): NA				
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: <i>(check one)</i> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial				
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: <u>1</u> ft. Height: <u>0.5</u> ft. N/A <input type="checkbox"/>		OHWM Indicator: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input checked="" type="checkbox"/> Soil characteristic change		
Width of Waterbody - Top of Bank to Top of Bank: <u>3</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>1</u> ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input checked="" type="checkbox"/>	Depth of Water: <i>(Approx.)</i> _____ ft. N/A <input checked="" type="checkbox"/>	
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> _____ fps N/A <input checked="" type="checkbox"/>	Bank height Right: <u>1</u> ft. Left: <u>1</u> ft.	Bank slope Right: <u>55</u> degrees Left: <u>55</u> degrees	
Qualitative Attributes				
Water Appearance: <i>(check one)</i> <input checked="" type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <i>(check all that apply)</i> <input type="checkbox"/> Bedrock <input checked="" type="checkbox"/> Boulder <input checked="" type="checkbox"/> Cobble <input checked="" type="checkbox"/> Gravel <input type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other: % of Substrate: <u>NA</u> % <u>5</u> % <u>35</u> % <u>10</u> % <u>NA</u> % <u>50</u> % <u>NA</u> % <u>NA</u> %				
Width of Riparian Zone: <u>>100</u> ft. N/A <input type="checkbox"/>	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <u>14</u> in. <input checked="" type="checkbox"/> Saplings/Shrubs: <u>3</u> in. <input checked="" type="checkbox"/> Herbs			
Dominant Bank Vegetation <i>(list)</i> : WHITE OAK, WHITE ASH, CEDAR, DOGWOOD, BLACK CHERRY, CHRISTMAS FERN, ADIANTUM				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): NA				
Aquatic Organisms Observed <i>(list)</i> : NA				
T&E Species Observed <i>(list)</i> : NA				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA				
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality ^a : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low				

Waterbody ID:
SBUL006

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

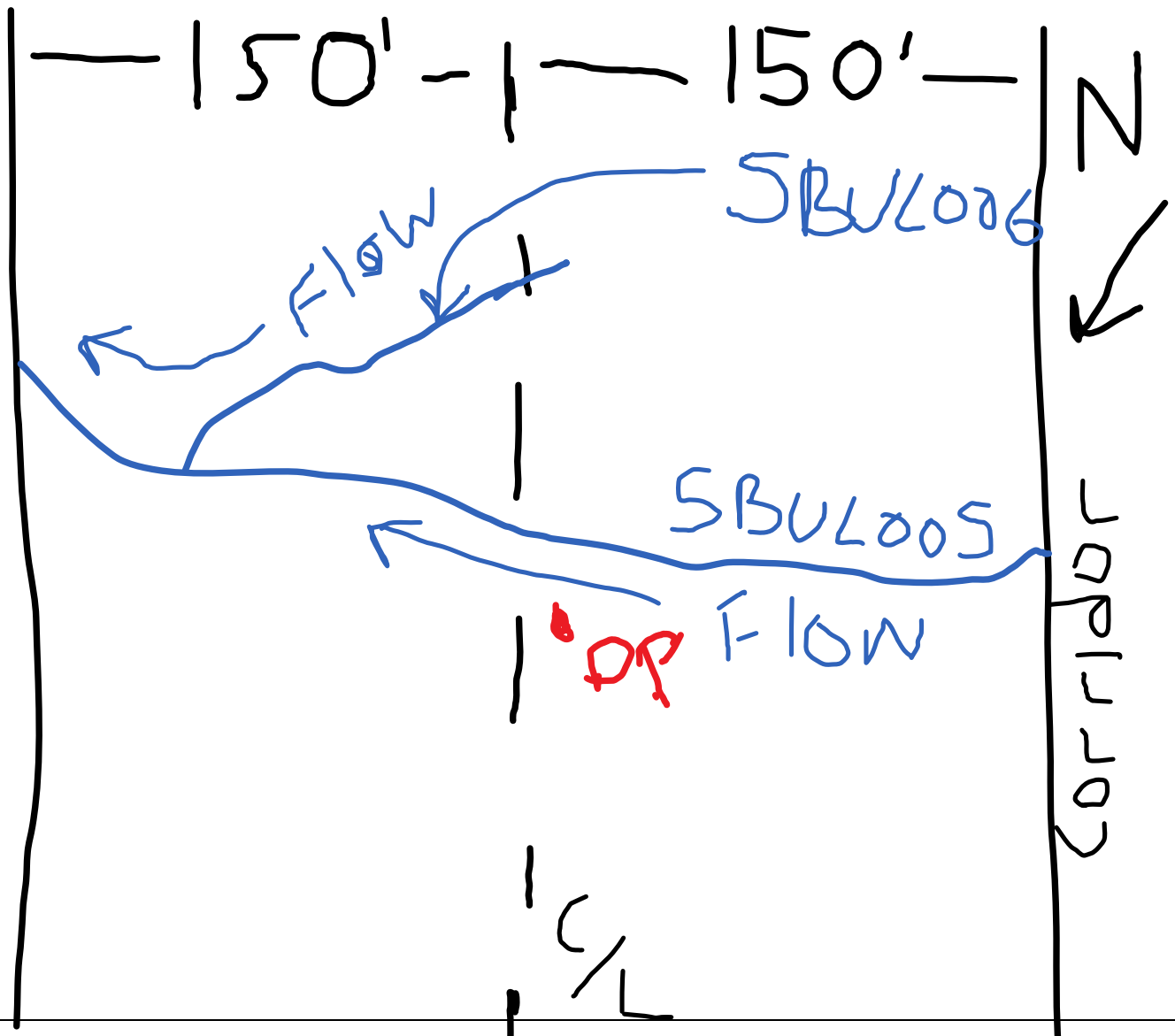
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

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

Notes:

HEADWATER EPHEMERAL

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





Waterbody point sbul006 facing South and upstream



Waterbody point sbul006 facing North and downstream



Waterbody point sbul006 facing East and across

Linear Waterbody Data Sheet

Survey Description			
Project Name: ATLANTIC COAST PIPELINE		Waterbody Name: UNT TO WILLIS RIVER	
Waterbody ID: SBUL007		Date: 9/9/2014	
State: Virginia	County: Buckingham	Company: W&C	Crew Member Initials: WLM, RMS
Photos: 100-1085 to 1087			
Tract Number(s): 09-089		Nearest Milepost: 200	Associated Wetland ID(s): NA
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: _ 8 _ ft.		OHWM Indicator: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Clear line on bank <input checked="" type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
Height: _ 1.5 _ ft.		<input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input checked="" type="checkbox"/> Soil characteristic change	
N/A <input type="checkbox"/>			
Width of Waterbody - Top of Bank to Top of Bank: _ 18 _ ft.	Width of Waterbody - Toe of Slope to Toe of Slope: _ 8 _ ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> _ 6 _ ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> _ 0.75 _ ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> _ 0.5 _ fps N/A <input type="checkbox"/>	Bank height Right: _ 5 _ ft. Left: _ 7 _ ft.	Bank slope Right: _ 85 _ degrees Left: _ 80 _ degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> % of Substrate: <input checked="" type="checkbox"/> Bedrock <input checked="" type="checkbox"/> Boulder <input checked="" type="checkbox"/> Cobble <input checked="" type="checkbox"/> Gravel <input type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other: _ 10 _ % _ 10 _ % _ 30 _ % _ 50 _ % _ N/A _ % _ N/A _ % _ N/A _ % _ N/A _ %			
Width of Riparian Zone: N/A <input type="checkbox"/> _ >100 _ ft.	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs Avg. DBH of Dominants: <i>(approx.)</i> _ 14 _ in. _ 3 _ in.		
Dominant Bank Vegetation <i>(list)</i> : WHITE OAK, POPLAR, RED MAPLE, BEECH, PAW PAW, BLACK CHERRY, CEDAR			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): RIFFLE/POOL COMPLEXES, COBBLE, BOULDER, UNDERCUT BANKS			
Aquatic Organisms Observed <i>(list)</i> : FISH, CRAYFISH, COLEOPTERANS, WATER STRIDERS			
T&E Species Observed <i>(list)</i> : NA			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality ³ : <i>(check one)</i> <input checked="" type="checkbox"/> High <input type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:
SBUL007

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

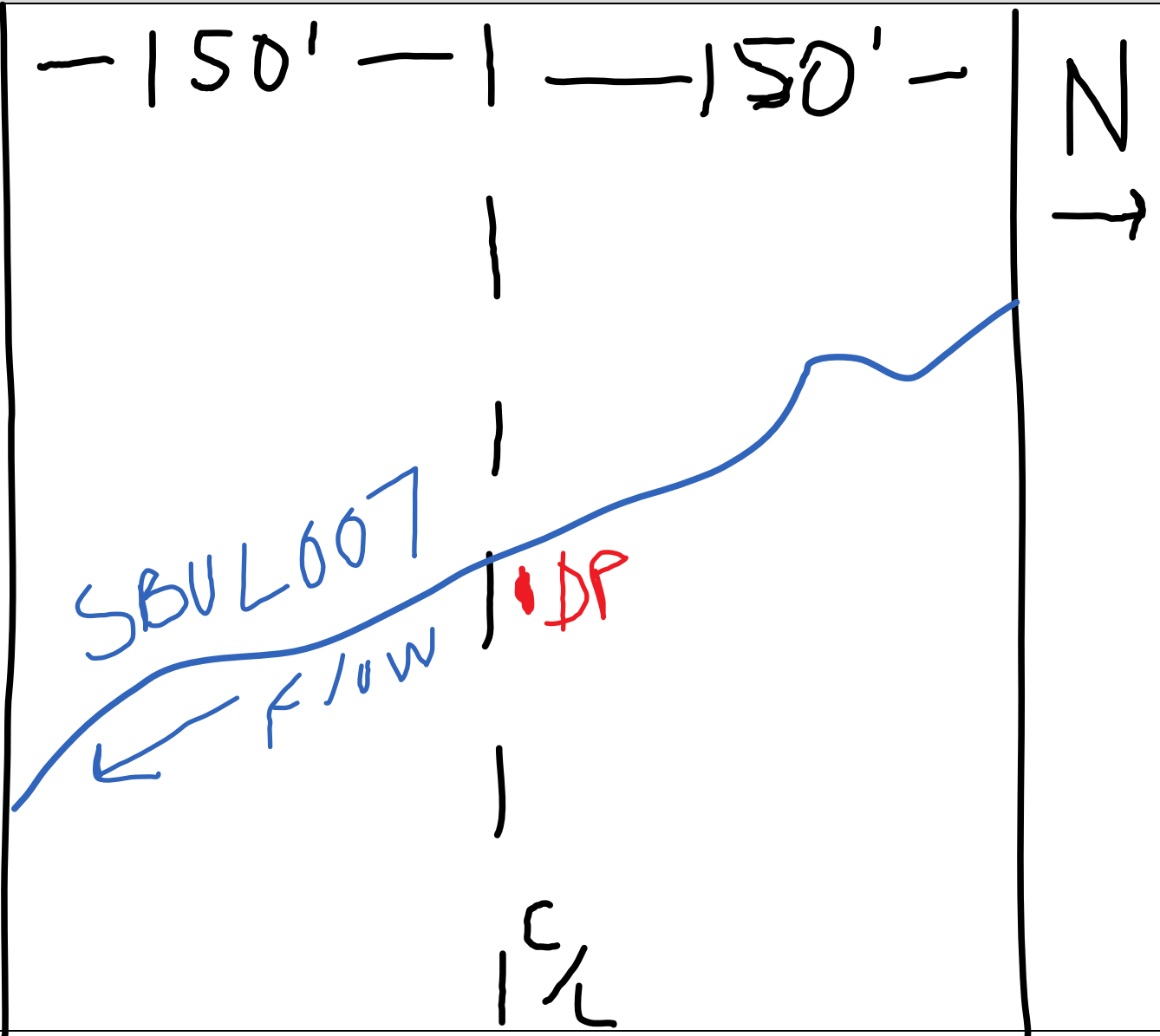
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

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

Notes:

HIGH QUALITY PERENNIAL STREAM

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





Waterbody point sbul007 facing North and upstream



Waterbody point sbul007 facing South and downstream



Waterbody point sbul007 facing West and across

Linear Waterbody Data Sheet

Survey Description				
Project Name: ATLANTIC COAST PIPELINE		Waterbody Name: UNT TO WILLIS RIVER		Waterbody ID: SBUL008
State: Virginia		County: Buckingham	Company: W&C	Crew Member Initials: WLM, RMS
Tract Number(s): 09-089		Nearest Milepost: 200	Photos: 100-1093 TO 1095	
Associated Wetland ID(s): NA				
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial				
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: <u>5</u> ft. Height: <u>1</u> ft. N/A <input type="checkbox"/>		OHWM Indicator: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Clear line on bank <input checked="" type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input checked="" type="checkbox"/> Soil characteristic change		
Width of Waterbody - Top of Bank to Top of Bank: <u>20</u> ft.		Width of Waterbody - Toe of Slope to Toe of Slope: <u>5</u> ft.		Depth of Water: <i>(Approx.)</i> N/A <input checked="" type="checkbox"/> _____ ft.
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> _____ fps N/A <input checked="" type="checkbox"/>		Bank height Right: <u>10</u> ft. Left: <u>7</u> ft.
Bank slope Right: <u>55</u> degrees Left: <u>45</u> degrees				
Qualitative Attributes				
Water Appearance: <i>(check one)</i> <input checked="" type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <i>(check all that apply)</i> % of Substrate: <u>10</u> % <u>5</u> % <u>60</u> % <u>20</u> % <u>NA</u> % <u>5</u> % <u>NA</u> % <u>NA</u> %				
Width of Riparian Zone: <u>>100</u> ft. N/A <input type="checkbox"/>		Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <u>14</u> in. <input checked="" type="checkbox"/> Saplings/Shrubs: <u>3</u> in. <input checked="" type="checkbox"/> Herbs		
Dominant Bank Vegetation <i>(list)</i> : BEECH, PINE, IRONWOOD, SYCAMORE, CHRISTMAS FERN				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): NA				
Aquatic Organisms Observed <i>(list)</i> : NA				
T&E Species Observed <i>(list)</i> : NA				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA				
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality ^a : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low				

Waterbody ID:
SBUL008

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

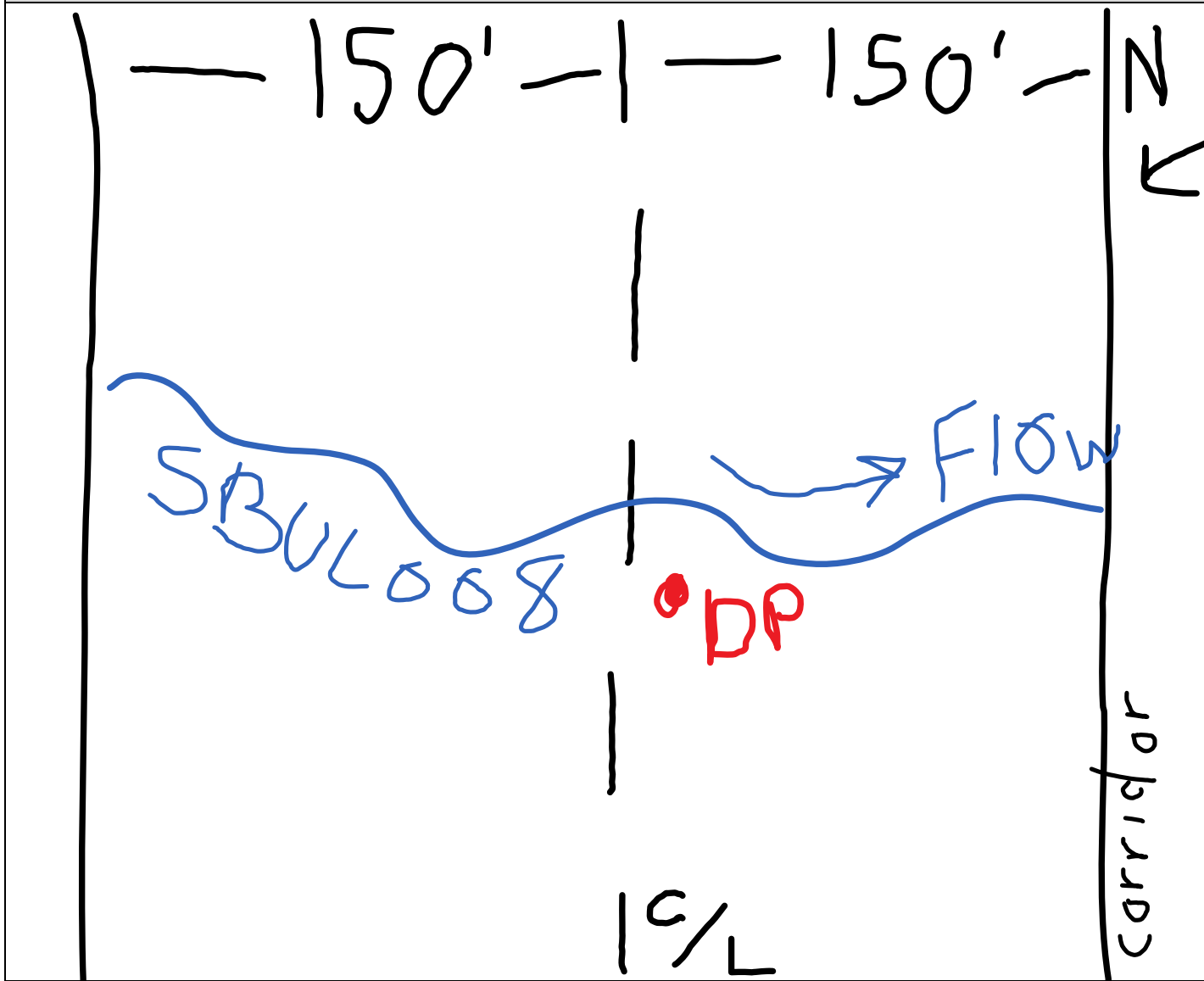
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

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

Notes:

DRY INTERMITTENT STREAM

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





Waterbody point sbul008 facing North and upstream



Waterbody point sbul008 facing South and downstream



Waterbody point sbul008 facing East and across

Linear Waterbody Data Sheet

Survey Description				
Project Name: ATLANTIC COAST PIPELINE		Waterbody Name: WILLIS RIVER		Waterbody ID: SBUL009
State: Virginia		County: Buckingham	Company: W&C	Crew Member Initials: WLM, RMS
Tract Number(s): 09-095 and 094		Nearest Milepost: 201		Photos: 100-1096 TO 1098
Associated Wetland ID(s): NA				
Survey Type: <small>(check one)</small> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: <small>(check one)</small> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial				
Waterbody Type: <small>(check one)</small> <input checked="" type="checkbox"/> River <input type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: <u>30</u> ft. Height: <u>3</u> ft. N/A <input type="checkbox"/>		OHWM Indicator: <small>(check all that apply)</small> <input checked="" type="checkbox"/> Clear line on bank <input checked="" type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input checked="" type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input checked="" type="checkbox"/> Soil characteristic change		
Width of Waterbody - Top of Bank to Top of Bank: <u>36</u> ft.		Width of Waterbody - Toe of Slope to Toe of Slope: <u>30</u> ft.		Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> <u>30</u> ft.
Depth of Water: <small>(Approx.)</small> N/A <input type="checkbox"/> <u>2.5</u> ft.				
Sinuosity: <small>(check one)</small> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		Water velocity: <small>(Approx.)</small> <u>0.8</u> fps N/A <input type="checkbox"/>		Bank height Right: <u>10</u> ft. Left: <u>10</u> ft.
Bank slope Right: <u>70</u> degrees Left: <u>70</u> degrees				
Qualitative Attributes				
Water Appearance: <small>(check one)</small> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <small>(check all that apply)</small> <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input checked="" type="checkbox"/> Cobble <input checked="" type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:				
% of Substrate: <u>NA</u> % <u>NA</u> % <u>5</u> % <u>25</u> % <u>55</u> % <u>15</u> % <u>NA</u> % <u>NA</u> %				
Width of Riparian Zone: <u>>100</u> ft. N/A <input type="checkbox"/>		Vegetative Layers: <small>(check all that apply)</small> <input checked="" type="checkbox"/> Trees: <u>12</u> in. <input checked="" type="checkbox"/> Saplings/Shrubs: <u>3</u> in. <input checked="" type="checkbox"/> Herbs		
Avg. DBH of Dominants: <small>(approx.)</small>				
Dominant Bank Vegetation <small>(list)</small> : RIVER BIRCH, SYCAMORE, IRONWOOD, QUERCUS SPP., RUBUS, PAW PAW, RIVER OATS				
Aquatic Habitats <small>(ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools)</small> : POOLS, SOFT SANDY SEDIMENT, LWD, UNDERCUT BANKS, OVERHANGING VEG				
Aquatic Organisms Observed <small>(list)</small> : WATER STRIDERS, FISH, COLOPTERANS				
T&E Species Observed <small>(list)</small> : NA				
Disturbances <small>(ex: livestock access, manure in waterbody, waste discharge pipes)</small> : NA				
Tributary is: <small>(check one)</small> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality ^a : <small>(check one)</small> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:

SBUL009

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

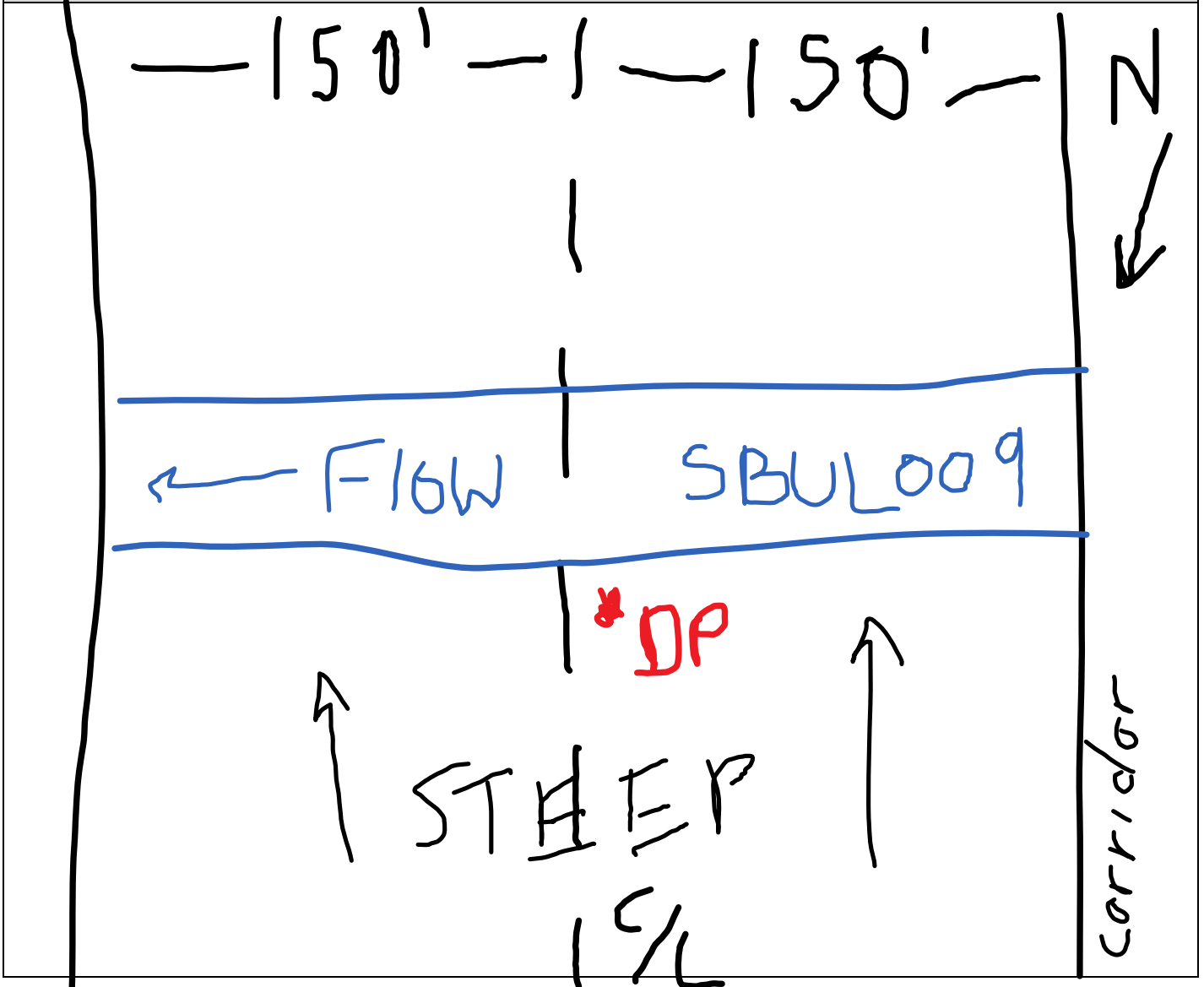
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

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

Notes:

LARGE PERENNIAL RIVER; DEEP POOLS; MANY MIGRATORY BIRDS OBSERVED

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





Waterbody point sbul009 facing South and downstream



Waterbody point sbul009 facing North and upstream



Waterbody point sbul009 facing East and across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Atlantic Coast Pipeline		Waterbody Name: Willis River	
Waterbody ID: SBUC009		Date: 1/15/2015	
State: Virginia	County: Buckingham	Company: NRG	Crew Member Initials: CR, AS
Photos: SBUC009_001-003			
Tract Number(s): 09-095		Nearest Milepost: 202.2	Associated Wetland ID(s): None
Survey Type: <i>(check one)</i> <input type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input checked="" type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input checked="" type="checkbox"/> River <input type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: <u>25</u> ft.		OHWM Indicator: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
OHWM Height: <u>5</u> ft.		<input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
N/A <input type="checkbox"/>			
Width of Waterbody - Top of Bank to Top of Bank: <u>50</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>8</u> ft.	Width of Waterbody - Water Edge to Water Edge: <u>22</u> ft.	Depth of Water: <i>(Approx.)</i> <u>3</u> ft.
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>	
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> <u>1.5</u> fps	Bank height: Right: <u>15</u> ft. Left: <u>20</u> ft.
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>	
Bank slope: Right: <u>80</u> degrees Left: <u>90</u> degrees			
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input type="checkbox"/> Clear <input checked="" type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input checked="" type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:			
% of Substrate: <u>10</u> % _____ % _____ % <u>40</u> % <u>50</u> % _____ % _____ % _____ %			
Width of Riparian Zone: <u>50</u> ft.		Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs	
N/A <input type="checkbox"/>		Avg. DBH of Dominants: <i>(approx.)</i> <u>12</u> in. <u>2</u> in.	
Dominant Bank Vegetation <i>(list)</i> : White Oak, Japanese Honeysuckle, Christmas Fern, Smilax, Red Maple, Easter Red Cedar, Sycamore			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Overhanging roots, leaf packs, riffles and deep pools, large downed woody debris in channel (8 – 10 in. DBH logs)			
Aquatic Organisms Observed <i>(list)</i> : None			
T&E Species Observed <i>(list)</i> : None			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): None			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality ^a : <i>(check one)</i> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:
SBUC009

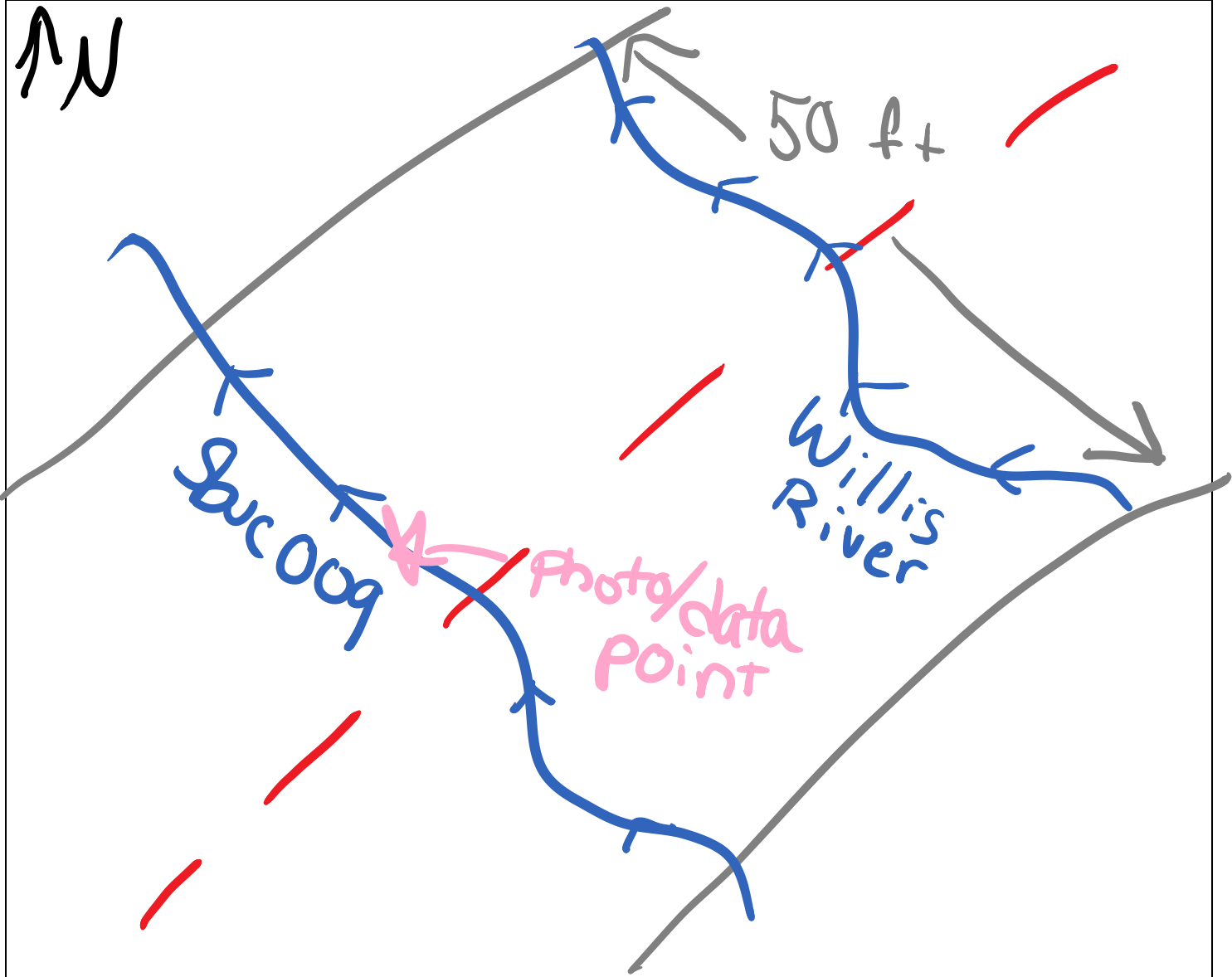
^a **High Quality:** Natural channel, natural vegetation extends at least one or two active channel widths on each side; banks stable and protected by roots; water color is clear to tea-colored; no barriers to fish movement; many fish cover types available; diverse and stable aquatic habitat; no disturbance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

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

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

Notes:

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





Waterbody SBUC009 facing upstream



Waterbody SBUC009 facing downstream



Waterbody SBUC009 facing across

Linear Waterbody Data Sheet

Survey Description			
Project Name: ATLANTIC COAST PIPELINE		Waterbody Name: UNT TO WILLIS RIVER	
Waterbody ID: SBUL010		Date: 9/10/2014	
State: Virginia	County: Buckingham	Company: W&C	Crew Member Initials: WLM, RMS
Photos: 100-1099 TO 1101			
Tract Number(s): 09-094		Nearest Milepost: 201	Associated Wetland ID(s): Wbul003
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attributes			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: _ 3 _ ft.		OHWM Indicator: <i>(check all that apply)</i>	
Height: _ 0.5 _ ft.		<input checked="" type="checkbox"/> Clear line on bank <input checked="" type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining	
N/A <input type="checkbox"/>		<input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input checked="" type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: _ 4 _ ft.	Width of Waterbody - Toe of Slope to Toe of Slope: _ 3 _ ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> _ 2 _ ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> _ 0.2 _ ft.
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> _ 0.1 _ fps N/A <input type="checkbox"/>	Bank height Right: _ 2 _ ft. Left: _ 2 _ ft.	Bank slope Right: _ 35 _ degrees Left: _ 30 _ degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i>			
% of Substrate: <u> N/A </u> % <u> N/A </u> % <u> 20 </u> % <u> 70 </u> % <u> 8 </u> % <u> 2 </u> % <u> N/A </u> % <u> N/A </u> %			
Width of Riparian Zone: N/A <input type="checkbox"/> >100 ft.		Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs	
Avg. DBH of Dominants: <i>(approx.)</i> <u> 12 </u> in.		<u> 3 </u> in.	
Dominant Bank Vegetation <i>(list)</i> : RED MAPLE, CEDAR, BLACK WALNUT, SPICEBUSH, LYCOPODIUM			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): COBBLE-GRAVEL, RIFFLES, OVERHANGING VEG, CPOM			
Aquatic Organisms Observed <i>(list)</i> : EPT			
T&E Species Observed <i>(list)</i> : NA			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality ³ : <i>(check one)</i> <input checked="" type="checkbox"/> High <input type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:

SBUL010

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

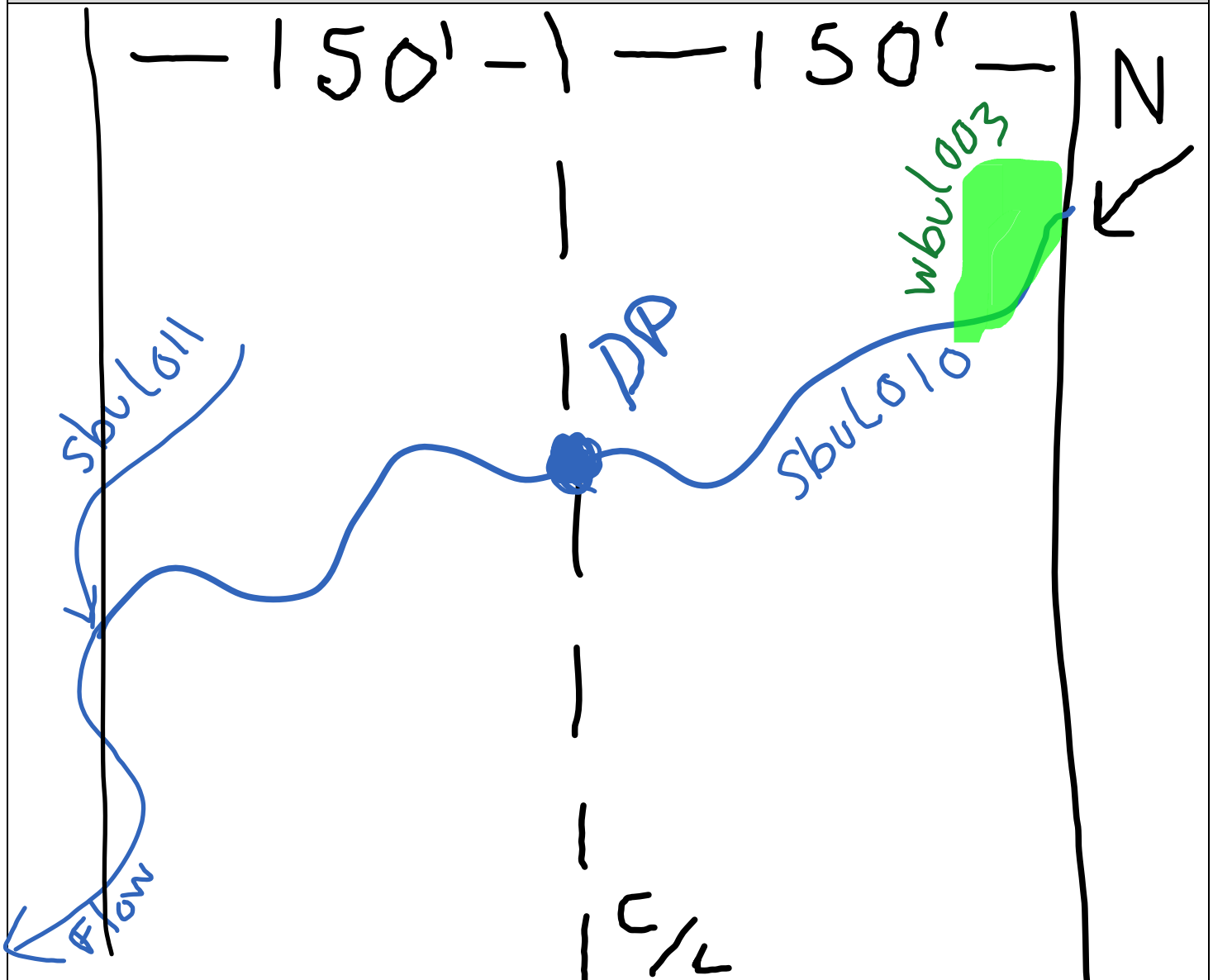
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

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

Notes:

GOOD QUALITY HEADWATER INTERMITTENT STREAM

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





Waterbody point sbul010 facing Southeast and upstream



Waterbody point sbul010 facing Northwest and downstream



Waterbody point sbul010 facing East and across

Linear Waterbody Data Sheet

Survey Description				
Project Name: ATLANTIC COAST PIPELINE		Waterbody Name: UNT TO WILLIS RIVER		Waterbody ID: SBUL011
State: Virginia		County: Buckingham	Company: W&C	Crew Member Initials: WLM, RMS
Tract Number(s): 09-094		Nearest Milepost: 201		Photos: 100-1103 TO 1105
Associated Wetland ID(s): NA				
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial				
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: <u>2</u> ft. Height: <u>0.5</u> ft. N/A <input type="checkbox"/>		OHWM Indicator: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Clear line on bank <input checked="" type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input checked="" type="checkbox"/> Soil characteristic change		
Width of Waterbody - Top of Bank to Top of Bank: <u>4</u> ft.		Width of Waterbody - Toe of Slope to Toe of Slope: <u>2</u> ft.		Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> <u>0.1</u> ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> <u>0.1</u> fps N/A <input type="checkbox"/>		Bank height Right: <u>2</u> ft. Left: <u>2</u> ft.
Bank slope Right: <u>30</u> degrees Left: <u>30</u> degrees				
Qualitative Attributes				
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <i>(check all that apply)</i> <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input checked="" type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other: % of Substrate: <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>15</u> % <u>50</u> % <u>15</u> % <u>20</u> % <u>NA</u> %				
Width of Riparian Zone: <u>>100</u> ft. N/A <input type="checkbox"/>		Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <u>12</u> in. <input checked="" type="checkbox"/> Saplings/Shrubs: <u>3</u> in. <input checked="" type="checkbox"/> Herbs Avg. DBH of Dominants: <i>(approx.)</i>		
Dominant Bank Vegetation <i>(list)</i> : RED MAPLE, CEDAR, BLACK WALNUT, SPICEBUSH, LYCOPODIUM, CAREX				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): GRAVEL, MUCKY SUBSTRATE, OVERHANGING VEG, CPOM				
Aquatic Organisms Observed <i>(list)</i> : EPT				
T&E Species Observed <i>(list)</i> : NA				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA				
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality ^a : <i>(check one)</i> <input checked="" type="checkbox"/> High <input type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:
SBUL011

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

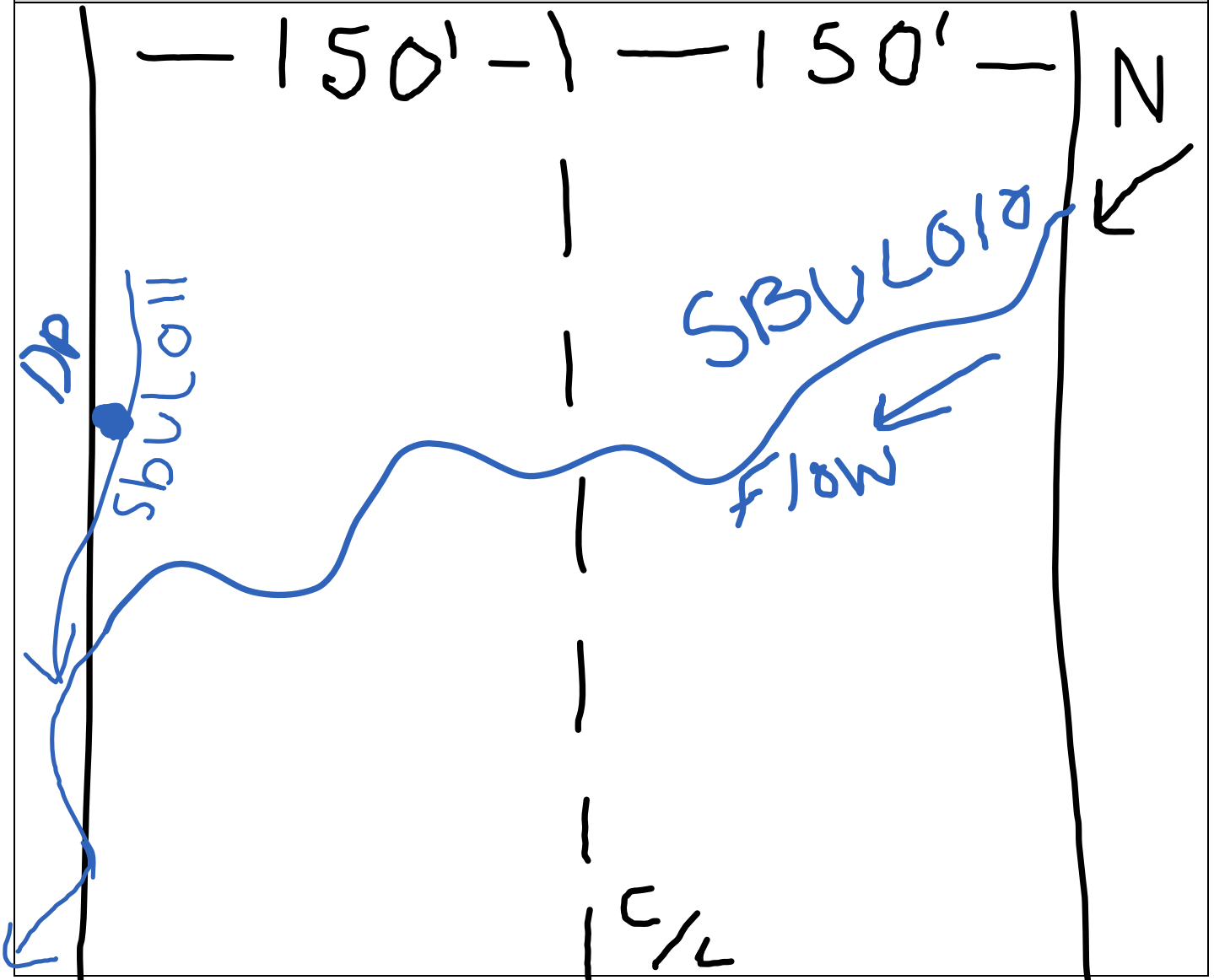
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

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

Notes:

INTERMITTENT STREAM; SPRINGHEAD

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





Waterbody point sbul011 facing East and upstream



Waterbody point sbul011 facing West and downstream



Waterbody point sbul011 facing North and across

Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: Unnamed Tributary to Willis River	
Waterbody ID: SBUK041		Date: 8/15/2014	
State: Virginia	County: Buckingham	Company: WOODARD & CURRAN	Crew Member Initial: JD, SG
Photos: IMG 2326 to 2328 x,u,d			
Tract Number(s): 09-100		Nearest Milepost: 201	Associated Wetland ID: NA
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attribute			
Stream Classification: <i>(check one)</i> <input checked="" type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: _3_ ft.	OHWM Indicator: <i>(check all that apply)</i>	<input checked="" type="checkbox"/> Clear line on bank	<input type="checkbox"/> Shelving
OHWM Height: _0.3_ ft.		<input type="checkbox"/> Wrested vegetation	<input checked="" type="checkbox"/> Scouring
N/A <input type="checkbox"/>	<input type="checkbox"/> Bent, matted, or missing vegetation	<input type="checkbox"/> Wrack line	<input checked="" type="checkbox"/> Litter and debris
		<input checked="" type="checkbox"/> Abrupt plant community change	<input type="checkbox"/> Water staining
Soil characteristic change			
Width of Waterbody - Top of Bank to Top of Bank: _15_ ft.	Width of Waterbody - Toe of Slope to Toe of Slope: _3_ ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input checked="" type="checkbox"/> _ft.	Depth of Water: <i>(Approx.)</i> N/A <input checked="" type="checkbox"/> _ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> _ _fps N/A <input checked="" type="checkbox"/>	Bank height Right: _8_ ft. Left: _8_ ft.	Bank slope Right: _75_ degrees Left: _75_ degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input checked="" type="checkbox"/> No water <input type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> NA			
% of Substrate: NA % NA % NA % NA % NA % 20 % 80 % NA %			
Width of Riparian Zone: N/A <input type="checkbox"/> _100_ ft.	Vegetative Layers: <i>(check all that apply)</i>		
	Avg. DBH of Dominants: <i>(approx.)</i> 6 in. 3 in.		
Dominant Bank Vegetation <i>(list)</i> YOUNG TULIP TREE, SYCAMORE, WILLOW, RED MAPLE, SASAFRAS, SUMAC, BLACKBERRY, POKEWEEED			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): NA			
Aquatic Organisms Observed <i>(list)</i> : NA			
T&E Species Observed <i>(list)</i> : NA			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality ^a : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low			

Waterbody ID:

SBUK041

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

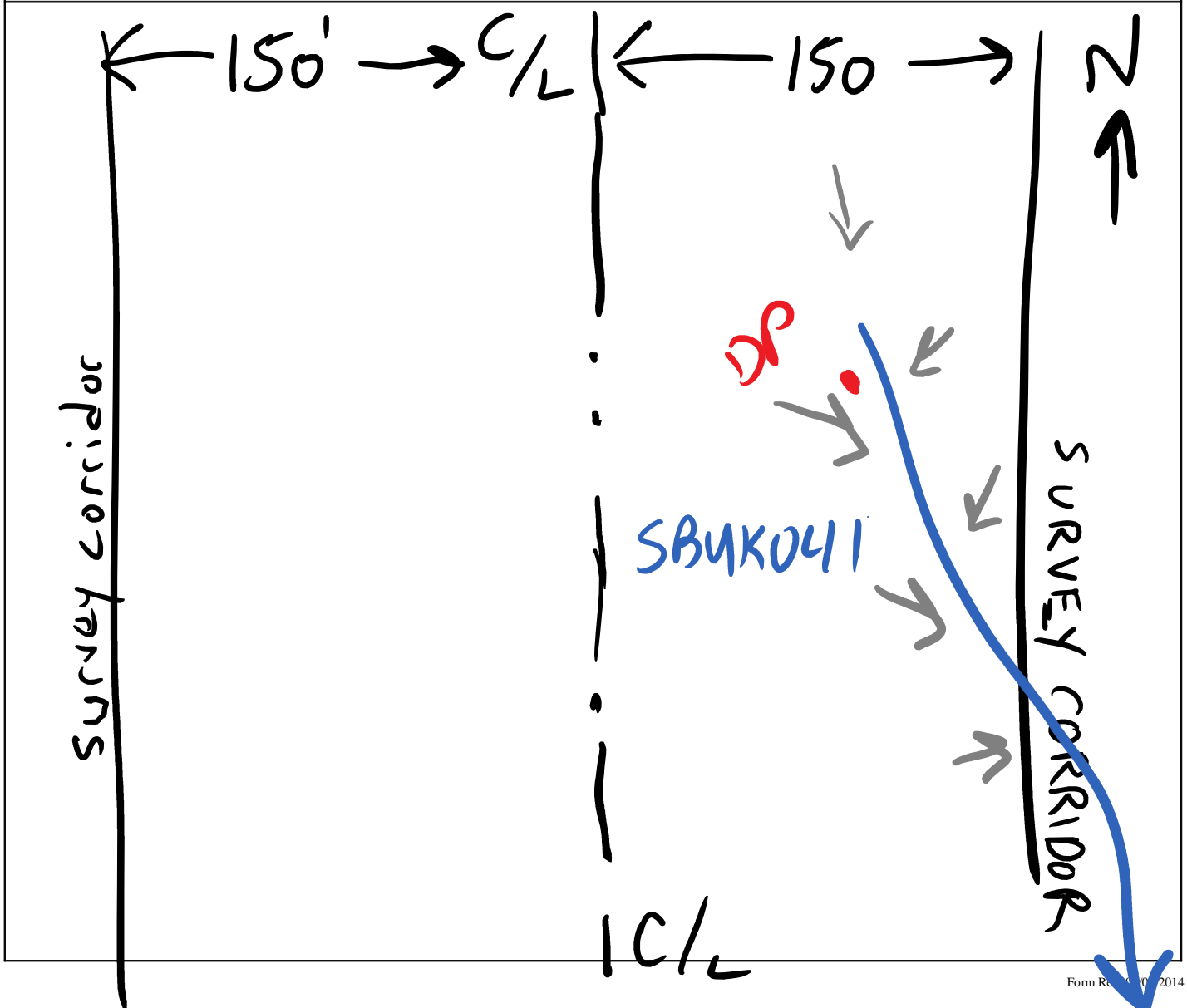
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

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

Notes:

EPHEMERAL STREAM FLOWING SOUTHEAST ALONG COORIDOR EDGE. FEATURE MORE CHARACTERISTIC OF INTERMITTENT STREAM OFF ROW. DEEP V-SHAPED GULLY WITH FEATURE ORIGINATES IN FIELD.

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





Waterbody point sbuk041 facing East and
across



Waterbody point sbuk041 facing North and
upstream



Waterbody point sbuk041 facing South and downstream

Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: Unnamed Tributary to Willis River	
Waterbody ID: SBUK042		Date: 8/15/2014	
State: Virginia	County: Buckingham	Company: WOODARD & CURRAN	Crew Member Initial: JD, SG
Photos: IMG 2330 to 2332 x,u,d			
Tract Number(s): 09-100		Nearest Milepost: 201	Associated Wetland ID: NA
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attribute			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: <u>4</u> ft. Height: <u>1</u> ft. N/A <input type="checkbox"/>		OHWM Indicator: <i>(check all that apply)</i> <input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: <u>6</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>4</u> ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> <u>0.5</u> ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> <u>0.2</u> ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> <u>0.1</u> fps N/A <input type="checkbox"/>	Bank height Right: <u>6</u> ft. Left: <u>4</u> ft.	Bank slope Right: <u>70</u> degrees Left: <u>85</u> degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> NA <input checked="" type="checkbox"/> Bedrock <input checked="" type="checkbox"/> Boulder <input checked="" type="checkbox"/> Cobble <input checked="" type="checkbox"/> Gravel <input type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:			
% of Substrate: <u>15</u> % <u>20</u> % <u>50</u> % <u>15</u> % <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>NA</u> %			
Width of Riparian Zone: N/A <input type="checkbox"/> <u>100</u> ft.	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs Avg. DBH of Dominants: <i>(approx.)</i> <u>8</u> in. <u>3</u> in.		
Dominant Bank Vegetation <i>(list)</i> BLACK WALNUT, SYCAMORE, BLACKJACK OAK, RED BUD, TULIP TREE, SPICEBUSH, DEER TONGUE, CHRISTMAS FERN, ROSE, GREENBRIAR			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): NA			
Aquatic Organisms Observed (list): NA			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality ^a : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low			

Waterbody ID:
SBUK042

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

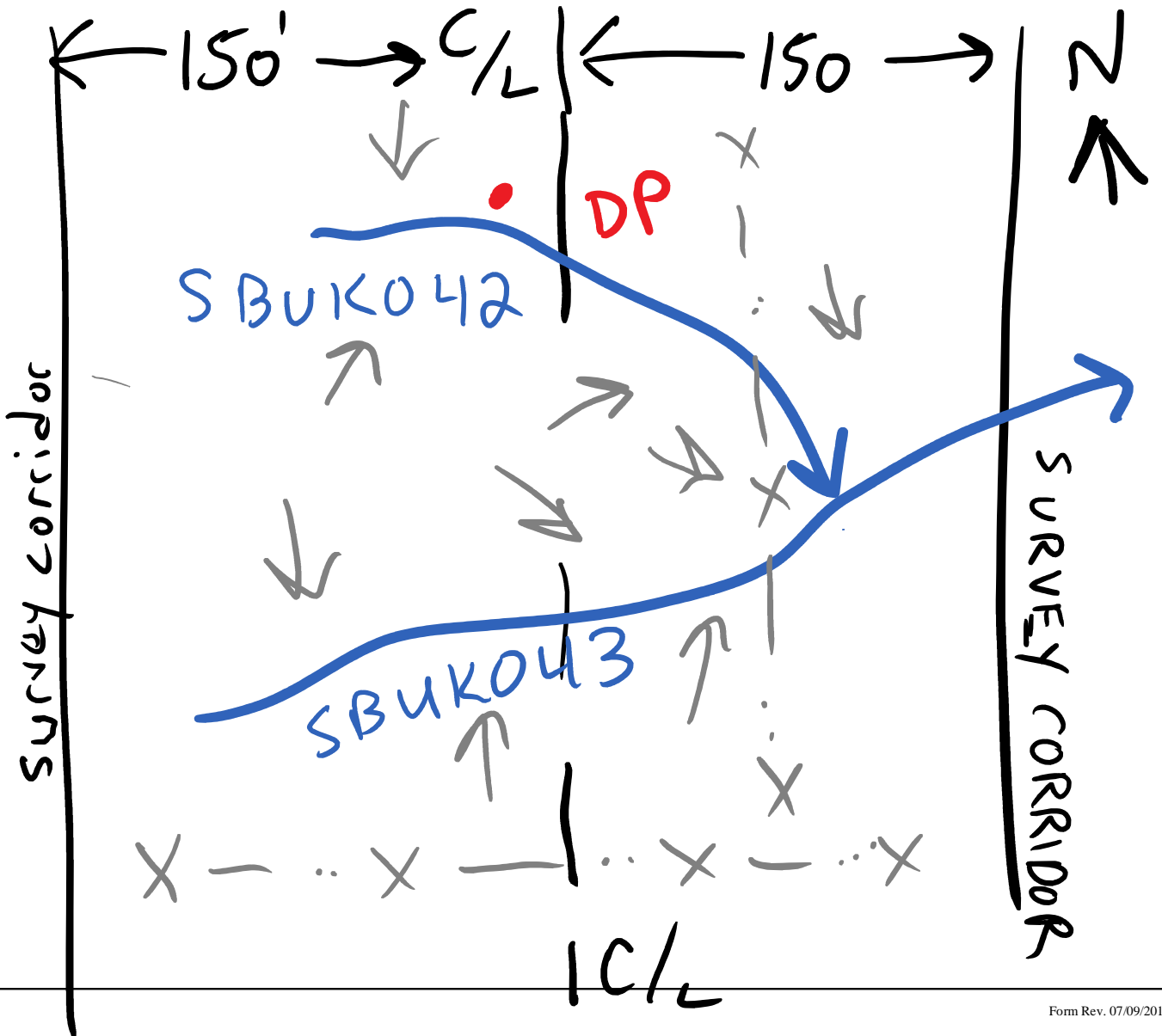
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

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

Notes:

INTERMITTENT STREAM IN CUTOVER AREA WITH FEW LARGE TREES, MOSTLY YOUNG GROWTH. CROSSES ROW, TIES INTO SBUK043. HIGH GRADIENT, SPORADIC AERAS OF FLOW. ORIGINATES FROM SIDE OF BANK AT SUBSURFACE SEEP OR SPRING.

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





Waterbody point sbuk042 facing South and across



Waterbody point sbuk042 facing West and upstream



Waterbody point sbuk042 facing East and
downstream

Linear Waterbody Data Sheet

Survey Description				
Project Name: Southeast Reliability		Waterbody Name: Unnamed Tributary to Willis River		Waterbody ID: SBUK043
State: Virginia		County: Buckingham	Company: WOODARD & CURRAN	Crew Member Initial: JD, SG
Tract Number(s): 09-100		Nearest Milepost: 201		Photos: IMG 2334 to 2336 x,u,d
Associated Wetland ID NA				
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attribute				
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial				
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: _ 8 ft.		OHWM Indicator: <i>(check all that apply)</i>		
Height: _ 2 ft.		<input checked="" type="checkbox"/> Clear line on bank <input checked="" type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change		
N/A <input type="checkbox"/>				
Width of Waterbody - Top of Bank to Top of Bank: _ 15 ft.		Width of Waterbody - Toe of Slope to Toe of Slope: _ 8 ft.		Depth of Water: <i>(Approx.)</i> _ 0.3 ft.
		N/A <input type="checkbox"/>		N/A <input type="checkbox"/>
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering		Water velocity: <i>(Approx.)</i> _ 0.1 fps		Bank height Right: _ 3 ft. Left: _ 6 ft.
N/A <input type="checkbox"/>		N/A <input type="checkbox"/>		Bank slope Right: _ 85 degrees Left: _ 75 degrees
Qualitative Attributes				
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: <i>(check all that apply)</i> NA				
<input checked="" type="checkbox"/> Bedrock <input checked="" type="checkbox"/> Boulder <input checked="" type="checkbox"/> Cobble <input checked="" type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other:				
% of Substrate: 10 % 5 % 40 % 30 % 5 % 10 % NA % NA %				
Width of Riparian Zone: _ 100 ft.		Vegetative Layers: <i>(check all that apply)</i>		
N/A <input type="checkbox"/>		<input checked="" type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs Avg. DBH of Dominants: _ 8 in. _ 3 in.		
Dominant Bank Vegetation <i>(list)</i> BLACK WALNUT, SYCAMORE, BLACKJACK OAK, RED BUD, TULIP TREE, SPICEBUSH, DEER TONGUE, CHRISTMAS FERN, ROSE, GREENBRIAR				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): RIFFLS, RUNS, POOLS, OVERHANGING BANKS, LARGE WOODY DEBRIS				
Aquatic Organisms Observed <i>(list)</i> : FISH, FROGS, WATER STRIDER				
T&E Species Observed <i>(list)</i> : NA				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA				
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality ^a : <i>(check one)</i> <input checked="" type="checkbox"/> High <input type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:

SBUK043

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

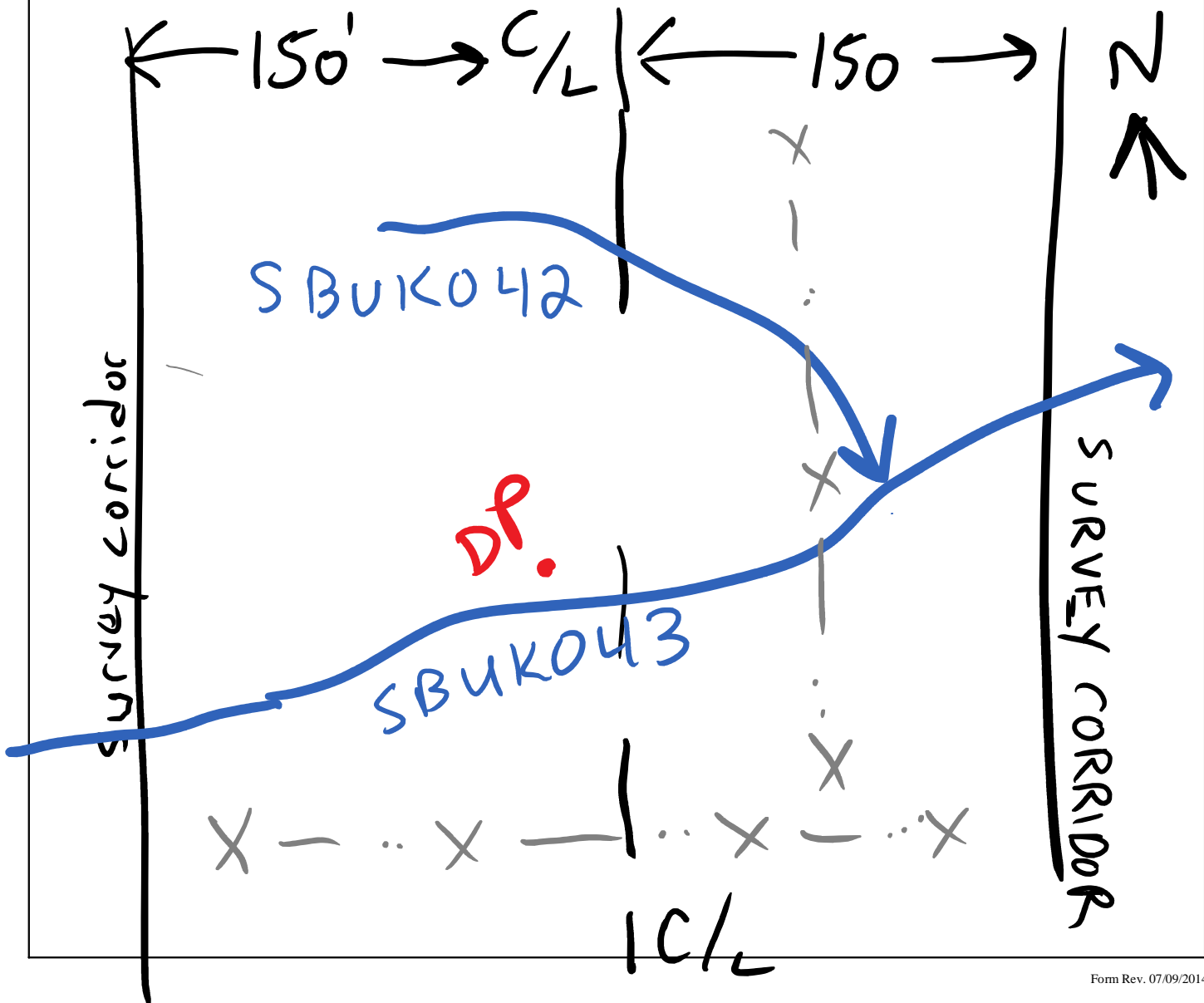
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

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

Notes:

PERRENIAL STREAM IN CUTOVER AREA WITH FEW LARGE TREES, MOSTLY YOUNG GROWTH. CROSSES ROW, TIES INTO SBUK042. LOW GRADIENT, HIGH AMOUNT OF WOODY DEBRIS, SOME POOLS

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





Waterbody point sbuk043 facing South and
across



Waterbody point sbuk043 facing West and
upstream



Waterbody point sbuk043 facing East and downstream

Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: Unnamed Tributary to Willis River	
Waterbody ID: SBUK044		Date: 8/15/2014	
State: Virginia	County: Buckingham	Company: WOODARD & CURRAN	Crew Member Initial: JD, SG
Photos: IMG 2342 to 2344 x,u,d			
Tract Number(s): 09-101		Nearest Milepost: 201	Associated Wetland ID: NA
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attribute			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input checked="" type="checkbox"/> Other:			
OHWM Width: <u>4</u> ft. Height: <u>0.3</u> ft. N/A <input type="checkbox"/>		OHWM Indicator: <i>(check all that apply)</i> <input type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining <input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: <u>15</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>4</u> ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> <u>3</u> ft.	Depth of Water: <i>(Approx.)</i> N/A <input checked="" type="checkbox"/> <u>0.3</u> ft.
Sinuosity: <i>(check one)</i> <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> <u>0.1</u> fps N/A <input checked="" type="checkbox"/>	Bank height Right: <u>3</u> ft. Left: <u>2</u> ft.	Bank slope Right: <u>45</u> degrees Left: <u>25</u> degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> NA <input checked="" type="checkbox"/> Bedrock <input checked="" type="checkbox"/> Boulder <input checked="" type="checkbox"/> Cobble <input checked="" type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other:			
% of Substrate: <u>5</u> % <u>5</u> % <u>10</u> % <u>30</u> % <u>15</u> % <u>15</u> % <u>20</u> % <u>NA</u> %			
Width of Riparian Zone: N/A <input type="checkbox"/> <u>100</u> ft.	Vegetative Layers: <i>(check all that apply)</i> <input checked="" type="checkbox"/> Trees: <u>35</u> in. <input checked="" type="checkbox"/> Saplings/Shrubs: <u>3</u> in. <input checked="" type="checkbox"/> Herbs		
Dominant Bank Vegetation <i>(list)</i> RED OAK, RED MAPLE, IRONWOOD, TULIP TREE, SPICEBUSH, DEER TONGUE, CHRISTMAS FERN, JEWELWEED, GREENBRIAR			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): NA			
Aquatic Organisms Observed <i>(list)</i> : NA			
T&E Species Observed <i>(list)</i> : NA			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality ^a : <i>(check one)</i> <input type="checkbox"/> High <input type="checkbox"/> Moderate <input checked="" type="checkbox"/> Low			

Waterbody ID:

SBUK044

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

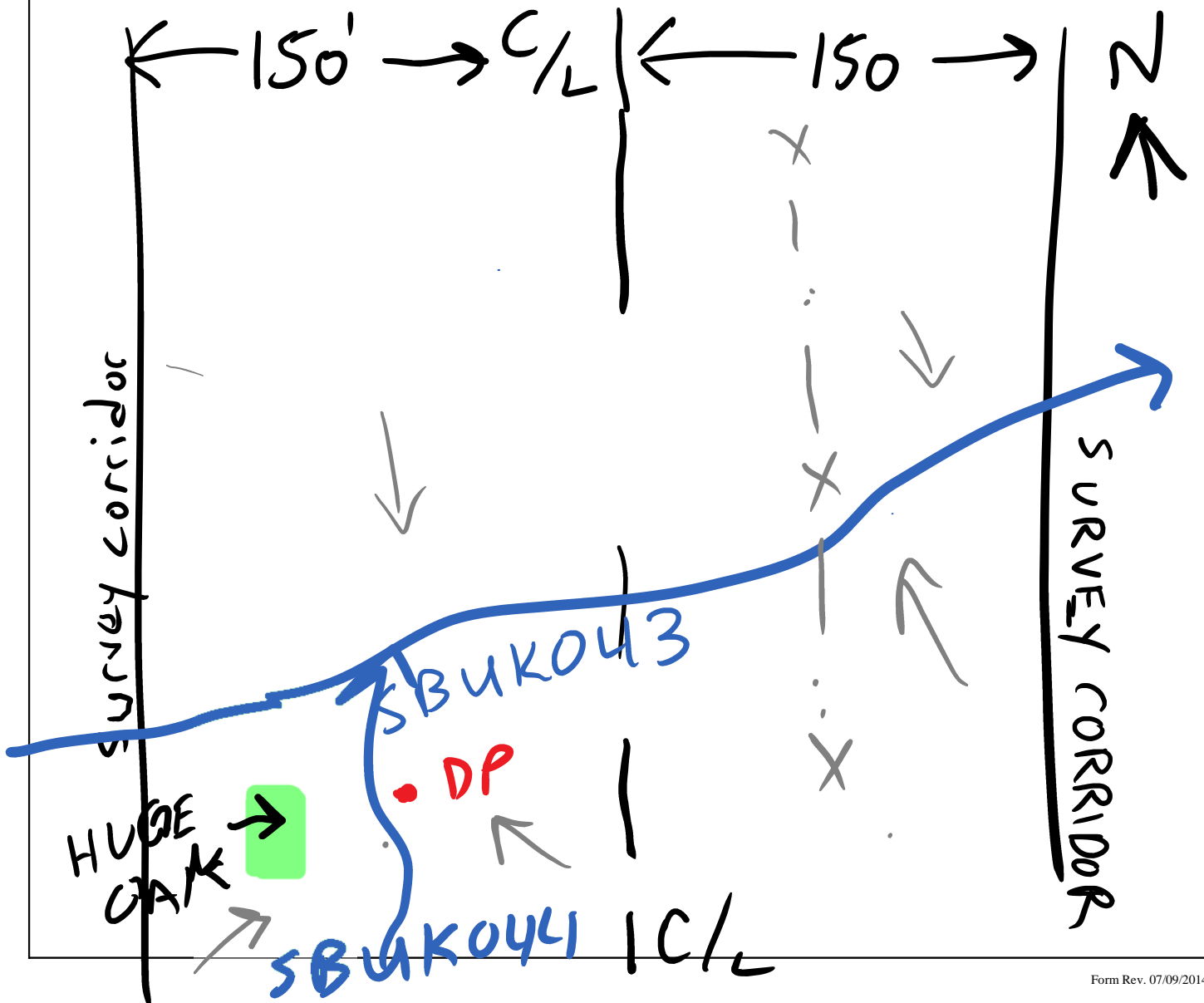
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

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

Notes:

INTERMITTENT STREAM/SEEP ORIGINATES FROM HILLSIDE, IN CUTOVER AREA WITH FEW LARGE TREES (EXCEPT A 52-INCH RED OAK LOCATED 12 FT TO WEST OF STREAM), MOSTLY YOUNG GROWTH. TIES INTO SBUK043. LOW GRADIENT, SEEP, HIGH AMOUNT OF EMERGENT VEGETATION IN UPPER REACHES.

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





Waterbody point sbuk044 facing North and
across



Waterbody point sbuk044 facing West and
upstream



Waterbody point sbuk044 facing East and downstream

Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: Unnamed Tributary to Willis River	
Waterbody ID: SBUK045		Date: 8/15/2014	
State: Virginia	County: Buckingham	Company: WOODARD & CURRAN	Crew Member Initial: JD, SG
Photos: IMG 2347 to 2349 x,u,d			
Tract Number(s): 09-100		Nearest Milepost: 201	Associated Wetland ID: NA
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attribute			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: <u>4</u> ft. Height: <u>1</u> ft. N/A <input type="checkbox"/>		OHWM Indicator: <i>(check all that apply)</i> <input type="checkbox"/> Clear line on bank <input checked="" type="checkbox"/> Shelving <input type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining <input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: <u>25</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>4</u> ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> <u>3</u> ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> <u>0.4</u> ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> <u>0.1</u> fps N/A <input type="checkbox"/>	Bank height Right: <u>2</u> ft. Left: <u>7</u> ft.	Bank slope Right: <u>80</u> degrees Left: <u>45</u> degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> N/A <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input type="checkbox"/> Cobble <input checked="" type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input checked="" type="checkbox"/> Silt/ clay <input checked="" type="checkbox"/> Organic <input type="checkbox"/> Other:			
% of Substrate: <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>15</u> % <u>20</u> % <u>40</u> % <u>25</u> % <u>NA</u> %			
Width of Riparian Zone: N/A <input type="checkbox"/> <u>100</u> ft.	Vegetative Layers: <i>(check all that apply)</i> <input type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs Avg. DBH of Dominants: <i>(approx.)</i> <u>4</u> in.		
Dominant Bank Vegetation <i>(list)</i> RED MAPLE, TULIP TREE, ALDER, WILLOW, VIRGINIA PINE, JUNIPERUS, VIRGINIA PUNE, HONEYSUCKLE, GREENBRIAR			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): OVERHANGING BANKS/ROOT, ABUNDANT WOODY DEBRIS, RIFFLES, RUNS AND MEDIUM POOLS			
Aquatic Organisms Observed (list): FISH, FROGS, WATER STRIDERS			
T&E Species Observed <i>(list)</i> : NA			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality ^a : <i>(check one)</i> <input checked="" type="checkbox"/> High <input type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:

SBUK045

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

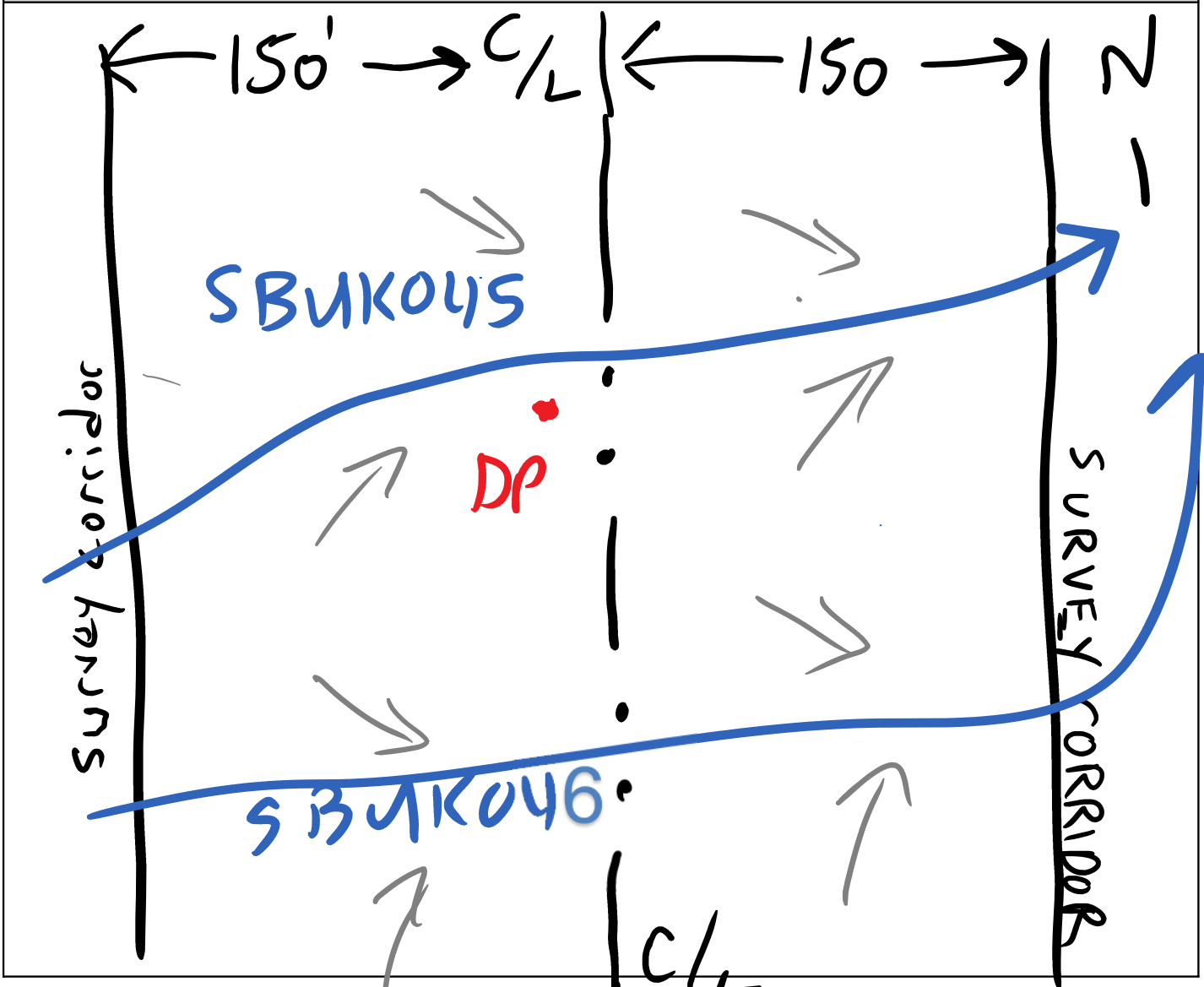
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

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

Notes:

PERRENIAL STREAM EXTENDING FROM POND/MAPPED PEM WETLAND OFF ROW TO WEST. IN CUTOVER AREA, ALL YOUNG GROWTH. CROSSES ROW. LOW GRADIENT, FLOW TO NORTHEAST. SHELVES AND BARS IN CHANNEL DOMINATED BY EMERGENT VEGETATION. SBUK046 TUES INTO THIS FEATURE OFF ROW.

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





Waterbody point sbuk045 facing North and
across



Waterbody point sbuk045 facing West and
upstream



Waterbody point sbuk045 facing East and downstream

Linear Waterbody Data Sheet

Survey Description			
Project Name: Southeast Reliability		Waterbody Name: Unnamed Tributary to Willis River	
Waterbody ID: SBUK046		Date: 8/15/2014	
State: Virginia	County: Buckingham	Company: WOODARD & CURRAN	Crew Member Initial: JD, SG
Photos: IMG 2351 to 2353 x,u,d			
Tract Number(s): 09-100		Nearest Milepost: 202	Associated Wetland ID: NA
Survey Type: <i>(check one)</i> <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:			
Physical Attribute			
Stream Classification: <i>(check one)</i> <input type="checkbox"/> Ephemeral <input checked="" type="checkbox"/> Intermittent <input type="checkbox"/> Perennial			
Waterbody Type: <i>(check one)</i> <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:			
OHWM Width: <u>3</u> ft. Height: <u>0.5</u> ft. N/A <input type="checkbox"/>		OHWM Indicator: <i>(check all that apply)</i> <input type="checkbox"/> Clear line on bank <input checked="" type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input checked="" type="checkbox"/> Scouring <input checked="" type="checkbox"/> Water staining <input checked="" type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input checked="" type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input type="checkbox"/> Soil characteristic change	
Width of Waterbody - Top of Bank to Top of Bank: <u>4</u> ft.	Width of Waterbody - Toe of Slope to Toe of Slope: <u>3</u> ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> <u>2</u> ft.	Depth of Water: <i>(Approx.)</i> N/A <input type="checkbox"/> <u>0.3</u> ft.
Sinuosity: <i>(check one)</i> <input checked="" type="checkbox"/> Straight <input type="checkbox"/> Meandering	Water velocity: <i>(Approx.)</i> <u>0.1</u> fps N/A <input type="checkbox"/>	Bank height Right: <u>1</u> ft. Left: <u>1.5</u> ft.	Bank slope Right: <u>25</u> degrees Left: <u>45</u> degrees
Qualitative Attributes			
Water Appearance: <i>(check one)</i> <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:			
Substrate: <i>(check all that apply)</i> N/A % of Substrate: <u>NA</u> % <u>NA</u> % <u>NA</u> % <u>5</u> % <u>15</u> % <u>45</u> % <u>35</u> % <u>NA</u> %			
Width of Riparian Zone: N/A <input type="checkbox"/> <u>100</u> ft.	Vegetative Layers: <i>(check all that apply)</i> <input type="checkbox"/> Trees: <input checked="" type="checkbox"/> Saplings/Shrubs: <input checked="" type="checkbox"/> Herbs Avg. DBH of Dominants: <i>(approx.)</i> <u> </u> in. <u>4</u> in.		
Dominant Bank Vegetation <i>(list)</i> RED MAPLE, TULIP TREE, ALDER, WILLOW, VIRGINIA PINE, JUNIPERUS, VIRGINIA PUNE, HONEYSUCKLE, GREENBRIAR			
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): NA			
Aquatic Organisms Observed (list): NA			
T&E Species Observed <i>(list)</i> : NA			
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): NA			
Tributary is: <i>(check one)</i> <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated			
Stream Quality ^a : <i>(check one)</i> <input type="checkbox"/> High <input checked="" type="checkbox"/> Moderate <input type="checkbox"/> Low			

Waterbody ID:

SBUK046

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

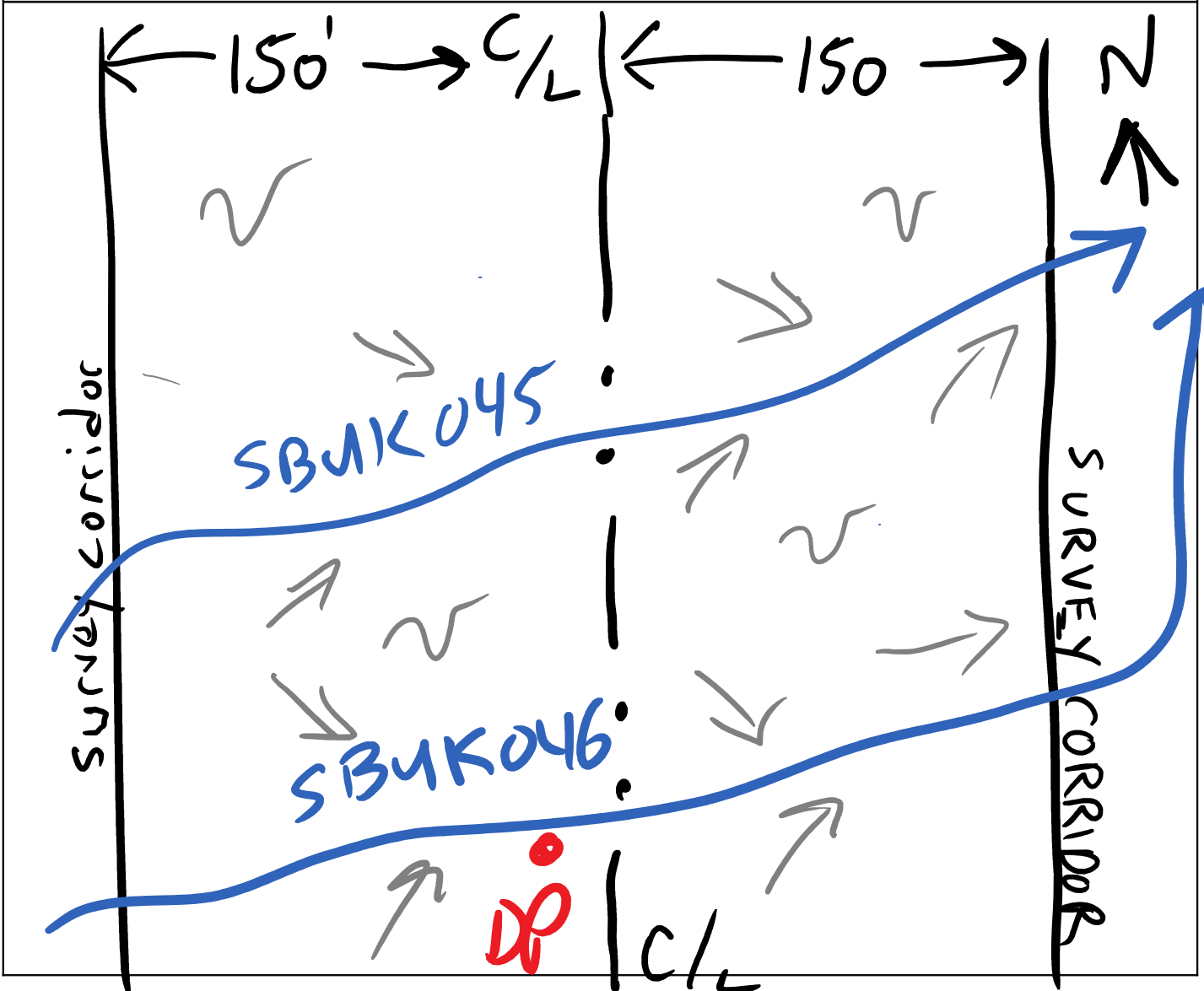
Moderate Quality: Altered channel evidenced by rip-rap; natural vegetation extends 1/3-1/2 of the active channel width on each side; filtering function or riparian vegetation only moderately compromised; banks moderately unstable; water color is cloudy, submerged objects covered with greenish film; moderate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

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

Notes:

INTERMITTENT STREAM FLOWING TO WEST. IN CUTOVER AREA, ALL YOUNG GROWTH. CROSSES ROW. LOW GRADIENT, SHELVES AND BARS IN CHANNEL DOMINATED BY EMERGENT VEGETATION. TIES INTO SBUK045. OVER 3 FT OF SEDIMENT IN SOME AREAS OF STREAM BASE.

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





Waterbody point sbuk046 facing North and
across



Waterbody point sbuk046 facing West and
upstream



Waterbody point sbuk046 facing East and
downstream

Linear Waterbody Data Sheet

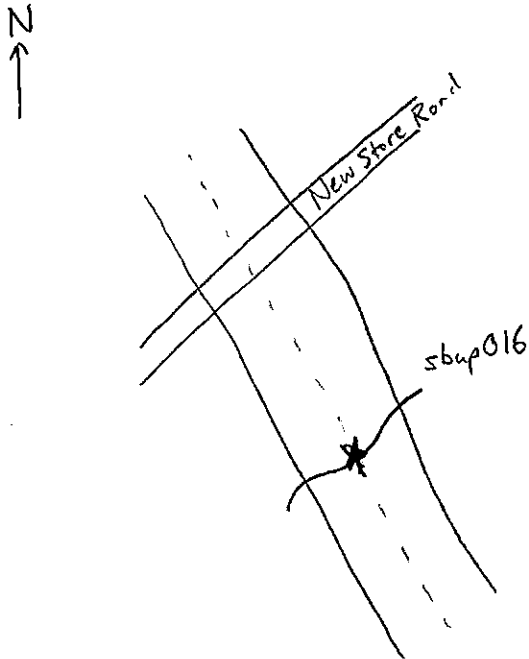
Survey Description				
Project Name: ACP	Waterbody Name: UNT to Willis River	Waterbody ID: Subp 016	Date: 8/7/15	
State: VA	County/Parish: Buckingham	Company: ESI	Crew Member Initials: RT, CM	Photos: Facing SW, NE, SE
Tract Number(s): 09-103	Nearest Milepost: 200.5	Associated Wetland ID(s): NA		
Survey Type: (check one) <input checked="" type="checkbox"/> Centerline <input type="checkbox"/> Re-Route <input type="checkbox"/> Access Road <input type="checkbox"/> Other:				
Physical Attributes				
Stream Classification: (check one) <input type="checkbox"/> Ephemeral <input type="checkbox"/> Intermittent <input checked="" type="checkbox"/> Perennial				
Waterbody Type: (check one) <input type="checkbox"/> River <input checked="" type="checkbox"/> Stream <input type="checkbox"/> Ditch <input type="checkbox"/> Canal <input type="checkbox"/> Other:				
OHWM Width: 8 ft. Height: 2 ft. N/A <input type="checkbox"/>		OHWM Indicator: (check all that apply) <input checked="" type="checkbox"/> Clear line on bank <input type="checkbox"/> Shelving <input checked="" type="checkbox"/> Wrested vegetation <input type="checkbox"/> Scouring <input type="checkbox"/> Water staining <input type="checkbox"/> Bent, matted, or missing vegetation <input type="checkbox"/> Wrack line <input type="checkbox"/> Litter and debris <input type="checkbox"/> Abrupt plant community change <input checked="" type="checkbox"/> Soil characteristic change		
Width of Waterbody - Top of Bank to Top of Bank: 12 ft.	Width of Waterbody - Toe of Slope to Toe of Slope: 6 ft.	Width of Waterbody - Water Edge to Water Edge: N/A <input type="checkbox"/> 7 ft.	Depth of Water: (Approx.) N/A <input type="checkbox"/> 1 ft.	
Sinuosity: (check one) <input type="checkbox"/> Straight <input checked="" type="checkbox"/> Meandering	Water velocity: (Approx.) 41 fps N/A <input type="checkbox"/>	Bank height Right: 5 ft. Left: 3 ft.	Bank slope Right: 60 degrees Left: 70 degrees	
Qualitative Attributes				
Water Appearance: (check one) <input type="checkbox"/> No water <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Turbid <input type="checkbox"/> Sheen on surface <input type="checkbox"/> Surface scum <input type="checkbox"/> Algal mats <input type="checkbox"/> Other:				
Substrate: (check all that apply) <input type="checkbox"/> Bedrock <input type="checkbox"/> Boulder <input checked="" type="checkbox"/> Cobble <input checked="" type="checkbox"/> Gravel <input checked="" type="checkbox"/> Sand <input type="checkbox"/> Silt/ clay <input type="checkbox"/> Organic <input type="checkbox"/> Other: % of Substrate: _____% _____% 60% 30% 10% _____% _____% _____%				
Width of Riparian Zone: N/A <input type="checkbox"/> 30 ft.	Vegetative Layers: (check all that apply) Avg. DBH of Dominants: (approx.) <input checked="" type="checkbox"/> Trees: 10 in. <input checked="" type="checkbox"/> Saplings/Shrubs: 1 in. <input checked="" type="checkbox"/> Herbs: N/A in.			
Dominant Bank Vegetation (list): Acer rubrum, Polystichum acrostichoides, Lonicera japonica				
Aquatic Habitats (ex: submerged or emerged aquatic vegetation, overhanging banks/roots, leaf packs, large submerged wood, riffles, deep pools): Pools, leaf packs, overhanging banks				
Aquatic Organisms Observed (list): Crayfish, Frogs				
T&E Species Observed (list): none				
Disturbances (ex: livestock access, manure in waterbody, waste discharge pipes): none				
Tributary is: (check one) <input checked="" type="checkbox"/> Natural <input type="checkbox"/> Artificial, man-made <input type="checkbox"/> Manipulated				
Stream Quality ² : (check one) <input checked="" type="checkbox"/> High <input type="checkbox"/> Moderate <input type="checkbox"/> Low				

Waterbody ID:
sbup016

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

Notes:

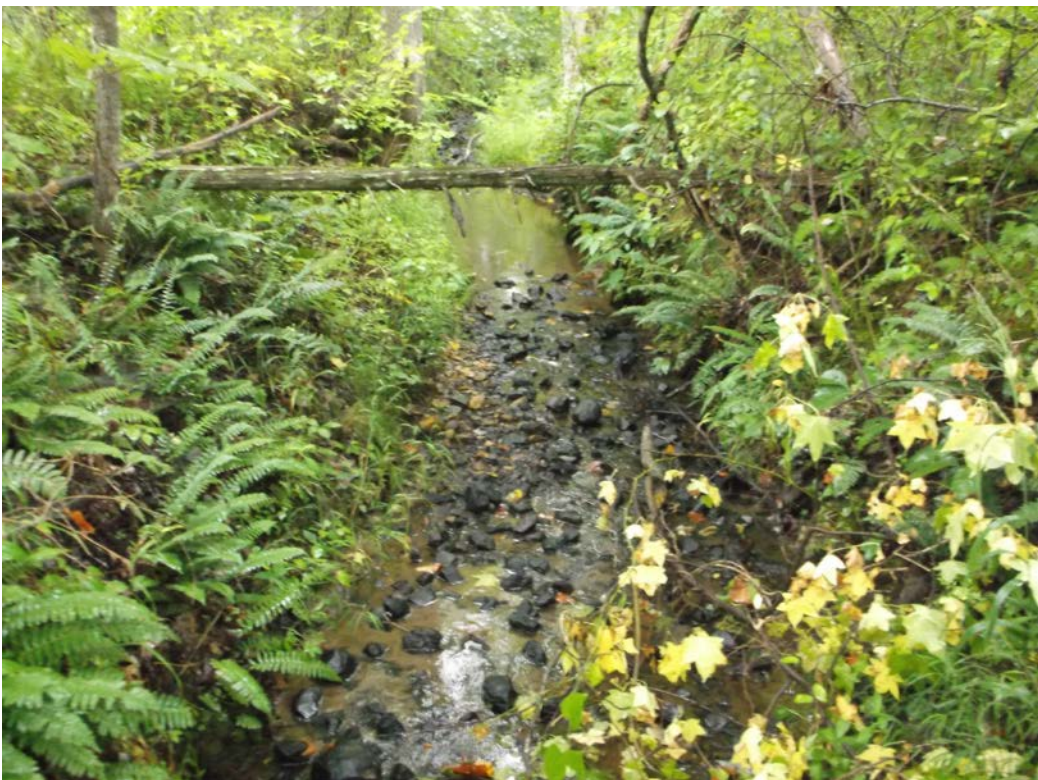
Waterbody Sketch (Include north arrow, centerline, distance from centerline, data point location, survey boundary, and IDs of associated features)



Environmental Field Surveys
Waterbody Photo Page



Waterbody sbup016 facing southwest upstream.



Waterbody sbup016 facing northeast downstream.