



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

February 2016

PAGE ____ OF ____

STORET Station Name: Wilson Head Spring @ 20m E of Boil

Date: 03/02/2016
(mm/dd/yyyy)

STORET Station ID: G4CE0098

Latitude: 28.97974
(Decimal Degrees)

WBID: 1329R

RQ - 2016-02-29-50

ORG ID: 21FLCEN

Longitude: -82.32111
(Decimal Degrees)

Receiving Body of Water: Withlacoochee River

Field ID: G4CE0098

County: Marion

Sampling Team Members		WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Mike Linger						
Mike Drennan						

Sampling Equipment		
☒ Sample Container	☐ Van Dorn	☐ Pole
☐ Carboy	☐ Syringe	
☐ Dipper	☐ Other	
Equipment ID		

Collection Method		
☒ Wading	Via Boat	
☐ From Shore	☐ Canoe/Kayak	
☐ Other (note below)	☐ Electric Motor	
	☐ Gasoline Motor	

Water Level: Dry / Low / Normal / High / Flooded						Matrix: Fresh / Marine / DI				
Meter ID# 11C/11E			Photos: Yes / No			Tide Falling: Yes / No / NA				
Time Zone	Time	Sample Depth (m)	Total Depth (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (ppt)	Secchi Disk (m)	Sp COND (µmhos/cm)	Temp. (C°)
EST	11:10	0.15	0.3	3.8	44	7.2	0.2	0.3(s)	417	22.9
CEN										

Biological Samples Collected: None / HA / SCI / LVS / RPS / LVI / Other

Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH Check
Preserved Nutrients	☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	☒ Ice ☒ H2SO4	5259 020	7/16/16	☒ <2
Metals	☐ W-ICPMS ☐ W-ICP	☒ Ice ☐ HNO2			☐ <2
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☐ Ice			
Chlorophyll	☒ CHLSUITE-W	☒ Ice			
BOD	☒ BOD-UNIN	☒ Ice			
Physical/Aggregate (Kit A/C)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS	☒ Ice			
Physical/Aggregate (Kit B/D)	☐ Alkalinity / W-F / W-TSS / TURBIDITY	☐ Ice			
Macroinvertebrates	☐ MI-FW-QLDC	☐ Formalin			
Microbiology	☐ E Coli ☐ F Coli ☐ Entero ☐ QPCR	☐ Ice			
Periphyton	☒ ALGAE-ID	☒ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PYR-AA-R ☐ W-PC-AA-SF ☐ W-UHERB-AA ☐ W-GLYPH	☐ Ice ☐ Other			

Notes:

On the property of cattle ranch.
Large amount of periphyton in spring.

RQ-2016-02-29-50

Date: 03/02/16

Time:

G4CE0098

Field ID

STORET

G4CE0098

Signature:

Date:

3/2/16

Field Parameters Entered into LIMS:

KMW 4/4/16

Field Parameters QC in LIMS:

7R 4/6/16

Date Migrated to STORET:

7R 4/14/16

Field Sheets Scanned/Saved:

(Initials/Date)

DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID _____ ORG ID 21 FL CEN LATITUDE _____
 COUNTY Marion STORET # 64CE0098 LONGITUDE _____
 DATE 3/2/16 TIME 1100 SAMPLING AGENCY FOEP CEROC
 SITE NAME Wilson Head Springs 20m E of hert
 FIELD ID/NAME 64CE0098 RECEIVING BODY OF WATER _____

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural ☐ Silviculture ☐ Field/Pasture ☐ Agricultural ☐ Residential ☐ Commercial ☐ Industry ☐ Other (Specify) ☐ <u>100</u> ☐ ☐ ☐ ☐ ☐ ☐ ☐								Landscape Development Intensity Index (LDI) ☐	
Local Watershed Erosion (select one): ☒ None ☐ Slight ☐ Moderate ☐ Heavy Local Watershed NPS Pollution: ☒ No evidence ☐ Slight ☐ Moderate ☐ Heavy						Typical Width (m) Depth (m)/Velocity (m/sec) Transect _____ m wide _____ m/s <u>0.17</u> m/s _____ m/s _____ m deep <u>0.3</u> m deep _____ m deep			
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>>18</u> Right Bank: <u>>18</u>				Hydrologic Modification Score (per FT 3101) ☐					
High Water Mark: <u>0.5</u> + <u>0.3</u> = <u>0.8</u> (m) (above present water level) (present depth) (above bed)				Artificially Impounded ☐ Yes ☒ No					
Artificially ☒ No ☐ Mostly recovered, more sinuous Channelized: ☐ Some recovery ☐ Recent, severe				Canopy Cover % ☐ Open ☐ Lightly Shaded (11-45%) ☐ Heavily Shaded ☒ Moderate Shaded (46-80%)					

SEDIMENT / SUBSTRATE

Sediment Oils ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse			Sediment Odors ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ Other (Specify): _____			Smothering of Substrates Sand Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐ Silt Smothering: None ☐ Slight ☐ Moderate ☒ Severe ☐ Algae Smothering: None ☐ Slight ☐ Moderate ☐ Severe ☒																																																																														
SUBSTRATE TYPE Assessment Tool: ☐ SCI ☒ RPS ☒ LVS ☐ LCI ☐ BioRecon <table border="1"> <thead> <tr> <th></th> <th>% Coverage</th> <th>INVERT # Times Sampled</th> <th>PERI # Times Sampled</th> </tr> </thead> <tbody> <tr><td>Woody Debris (Snags)</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Undercut Banks / Roots</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Leaf Packs or Mat</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Aquatic Vegetation</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Rock or Shell Rubble..</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Sand.....</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Mud / Muck / Silt</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Other</td><td>☐</td><td>☐</td><td>☐</td></tr> <tr><td>Other</td><td>☐</td><td>☐</td><td>☐</td></tr> </tbody> </table>				% Coverage	INVERT # Times Sampled	PERI # Times Sampled	Woody Debris (Snags)	☐	☐	☐	Undercut Banks / Roots	☐	☐	☐	Leaf Packs or Mat	☐	☐	☐	Aquatic Vegetation	☐	☐	☐	Rock or Shell Rubble..	☐	☐	☐	Sand.....	☐	☐	☐	Mud / Muck / Silt	☐	☐	☐	Other	☐	☐	☐	Other	☐	☐	☐	WATER QUALITY <table border="1"> <thead> <tr> <th></th> <th>Depth (M)</th> <th>Temp. (°C)</th> <th>pH (SU)</th> <th>D.O. (MG/L)</th> <th>D.O. Sat (%)</th> <th>Cond. (UMHO/CM)</th> <th>Salinity (PPT)</th> <th>SECCHI (M)</th> </tr> </thead> <tbody> <tr> <td>Top:</td> <td><u>0.15</u></td> <td><u>22.9</u></td> <td><u>7.2</u></td> <td><u>3.8</u></td> <td><u>44</u></td> <td><u>417</u></td> <td><u>0.2</u></td> <td><u>0.3</u></td> </tr> <tr> <td>Mid:</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☒ VOB</td> </tr> <tr> <td>Bottom</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> </tbody> </table> Meter ID: <u>HC / IIE</u> TOTAL DEPTH <u>0.3</u>							Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)	Top:	<u>0.15</u>	<u>22.9</u>	<u>7.2</u>	<u>3.8</u>	<u>44</u>	<u>417</u>	<u>0.2</u>	<u>0.3</u>	Mid:	☐	☐	☐	☐	☐	☐	☐	☒ VOB	Bottom	☐	☐	☐	☐	☐	☐	☐	☐
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			Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☐ Yes ☐ No Lot Number: _____ Exp: _____			Color Tannic ☐ Green (Algae) ☐ Clear ☒ Other (Specify) ☐																																																																														
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AMBIENT FIELD CONDITIONS / NOTES: <u>Cattle Ranch</u> <u>70's cloudy</u> ☐ The antecedent hydrologic conditions have been met to my best knowledge.																																																																																				
SAMPLING TEAM <u>Michael Linger, Mike Drennon</u>					SIGNATURE: <u>[Signature]</u>		DATE: <u>3/2/16</u>																																																																													

DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

SAMPLING AGENCY: <u>FDGP</u>		STORET STATION NUMBER: <u>64CE0098</u>	DATE (MM/DD/YY): <u>03/02/16</u>	RECEIVING BODY OF WATER: <u>Withlacoochee</u>
REMARKS:	COUNTY: <u>Marian</u>	LOCATION: <u>Marian-Wilsonhead Spring @ 20m E of Barl</u>	FIELD ID/NAME: <u>64CE0098</u>	

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components	Four or more major productive habitats present (snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock)	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags)	Two major productive habitats present. Less than desirable habitat; frequently disturbed or removed	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered
Substrate Diversity <u>16</u>	20 19 18 17 <u>(16)</u>	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>7</u>	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 <u>(7)</u> 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity <u>13</u>	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥ 0.33 0.31 0.29 0.27 > 0.25 20 19 18 17 16	Max. observed at typical transect: > 0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 > 0.1 15 14 <u>(13)</u> 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: < 0.05 m/sec; or spate occurring: > 1 m/sec < 0.05 0.04 0.03 0.01 < 0.01 5 4 3 2 1
Habitat Smothering <u>6</u> ----- Primary Score <u>4842</u>	Adequate number of stable pools (1-2 per 12 times width) and < 25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and > 25% of habitats affected by sand, silt, or algae. 15 14 13 <u>(12)</u> 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (< 2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks.	Good sinuosity within old channelized area. Evidence of dredging in the past (> 25 yrs) but mostly recovered.	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area.	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks.
Artificial Channelization <u>20</u>	<u>(20)</u> 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankfull to top of bank. Bankfull is within or above the root zone with few raw, eroded areas.	Only meets 2 of the 3 requirements for optimal bank stability.	Only meets 1 of the 3 requirements for optimal bank stability.	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas.
Right Bank <u>10</u> Left Bank <u>10</u> <u>20</u>	<u>(10)</u> 9	8 7 6	5 4	3 2 1
Riparian Buffer Zone Width	Width of vegetation greater than 18 m	Width of vegetation > 12 to 18 m	Width of vegetation 6 to 12 m. human activities close to system	Less than 6 m of buffer zone due to intensive human activities
Right Bank <u>10</u> Left Bank <u>10</u> <u>20</u>	<u>(10)</u> 9	8 7 6	5 4	3 2 1
Riparian Zone Vegetation Quality	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance.	> 50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed.	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious.	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions).
Right Bank <u>8</u> Left Bank <u>8</u> <u>16</u> ----- Secondary Score <u>76</u>	10 9	<u>(8)</u> 7 6	5 4	3 2 1

1129 118 TOTAL SCORE

Date: <u>3/2/16</u>	Analyst: <u>Mike Linger</u>	Signature: <u>[Signature]</u>
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DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet

Location: Wilson head springs

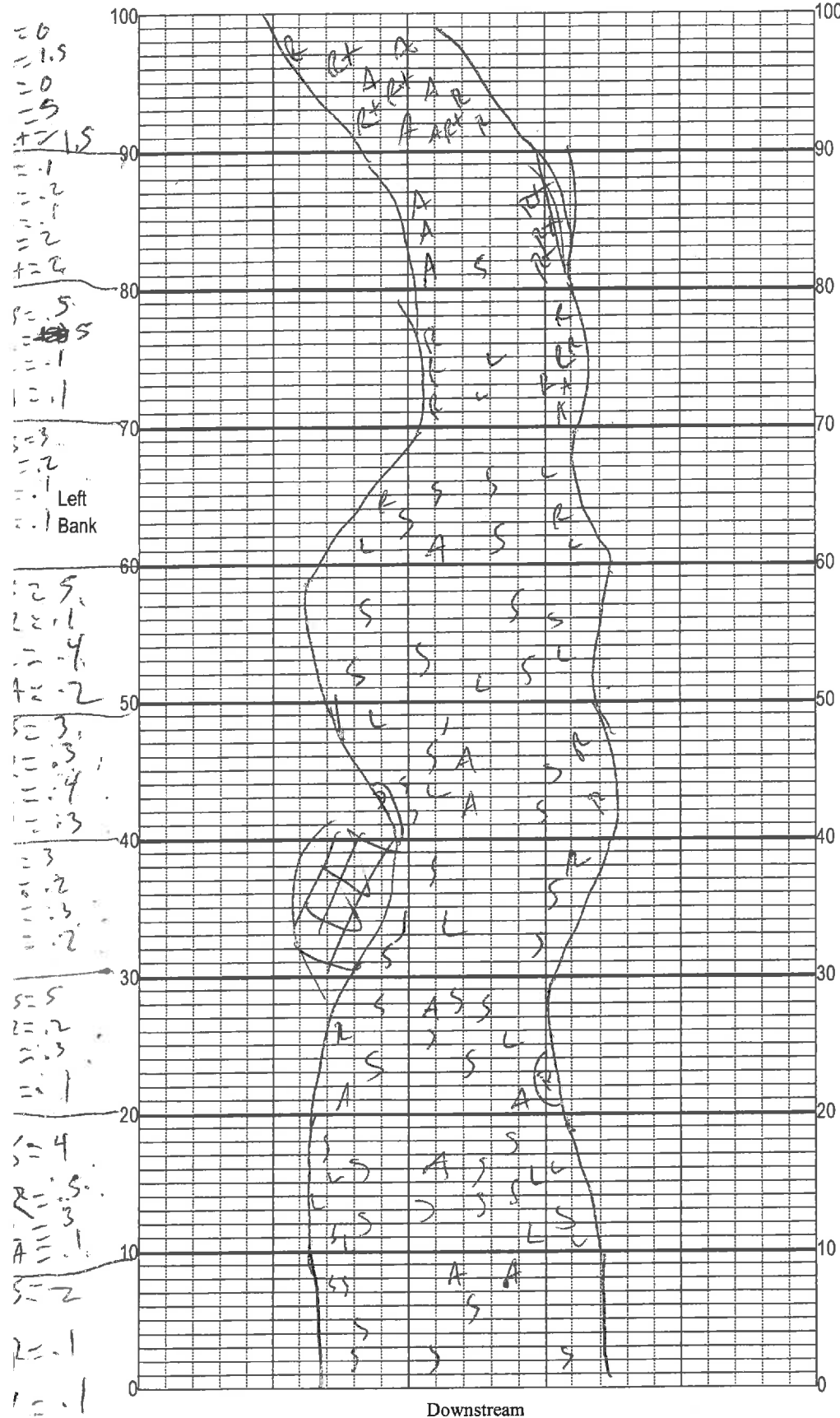
Date: 3/2/16

Sampler: _____

100 m: Latitude _____	
Longitude _____	
0 m: Latitude _____	
Longitude _____	
Substrates: Code key, draw proportionate habitat abundance. %	
<u>S</u> Snags	<u>50</u>
<u>R</u> Roots/undercut banks	<u>16</u>
<u>L</u> Leaf Packs (or mats)	<u>11</u>
<u>A</u> Aquatic Macrophytes	<u>16</u>
<u>Rt</u> Rock	<u>7</u>
<u> </u>	<u> </u>
<u> </u>	<u> </u>
total # observed = _____	
# range expected = _____	
Average width <u>7</u> m	
Average depth <u>3</u> m	
Velocity measured at <u>60</u> meter mark. <u>.15 m/s</u>	
WQ & chemistry taken at _____ meter mark.	
Habitat Smothering: Note areas (on map) where sand or silt is smothering substrates, limiting habitability.	
Bank Stability: Note areas (on map) with unstable, eroding banks.	
Riparian Buffer Width: Note areas (on map) where natural vegetation is altered or eliminated.	

Plants observed / other notes:

Eichornia, Eleocharis, Ludwigia repens, hydrocotyl, Saururus, cornus, lernae, sparganium, Microanthemum, Chara



Length of grid represents 100 m of stream (not linear meters).
(Horizontal scale is double vertical scale, draw proportionately).

62-160.800, F.A.C

23
25
48

S = 25.6
R = 8.3
L = 4.8
A = 8.4
Rt = 3.5

$$50.6 \text{ m}^2 / 700 \text{ m}^2 = 7.2\%$$

Revision Date: March 1, 2014

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Wilson Head Springs @ 20m E of Rail County: Marion Date: 3/2/16 Investigators: Mike Linger

Transect (m) Point 1=right 9=left Algal Thickness Rank (N-6, X) Estimated Canopy Cover

Transect (m)	Point	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1	4		
	2	5		
	3	6		
	4	6		
	5	5		60
	6	4		
	7	4		
	8	4		
	9	N		
10	1	5		
	2	6		
	3	5		
	4	5		
	5	5		68
	6	4		
	7	N		
	8	N		
	9	4		
20	1	4		
	2	4		
	3	4		
	4	N		
	5	N		64
	6	N		
	7	5		
	8	6		
	9	6		
30	1	4		
	2	5		
	3	6		
	4	N		
	5	N		72
	6	N		
	7	5		
	8	5		
	9	5		
40	1	N		
	2	5		
	3	6		
	4	5		
	5	N		56
	6	N		
	7	N		
	8	5		
	9	5		
50	1	4		
	2	4		
	3	5		
	4	5		
	5	N		52
	6	N		
	7	5		
	8	5		
	9	5		

STORET Station Number: 64 G4CE0098

Secchi depth 0.3
Estimated?

points ranked 4-6 71
total points assessed 99
% points ranked 4-6 71

Check accompanying data collected at same site/date.
Algal mat sample ☒
Linear Veg Survey ☒
Habitat Assessment ☒
SCI/Biorecon ☒
Water sample ☒
RQ-2016-02-29-50

Algal Thickness Rank	
N	rough, no algae, slimy, algae up to 1mm
3	>1mm - 6mm
4	>6mm - 20mm
5	>20mm - 10 cm
6	>10 cm

Record "N" and check "Estimated" for points deeper than the Secchi depth; algae are presumed absent. Check "Estimated" if thickness estimated for deep points which can be seen but not reached.

Record "X" for points shallower than Secchi depth for which substrate cannot be seen or reached with the hand. No estimated rank.

Record canopy cover as the number of small densiometer quadrants (out of 96) that HAVE canopy cover. Measure facing upstream at point 4, 5, or 6.

Collect algal mat sample following DEP SOP FS 7240 if the percentage of total sampled points with a thickness rank of 4, 5, or 6 is >20%.