



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

PAGE 1 OF 1

February 2016

Date Qualified?
Yes / No

STORET Station Name:

Davenport Creek @ E of SR 545

Date:

04/25/2016
(mm/dd/yyyy)

STORET Station ID:

64CE0023

Latitude:

28.2713

(Decimal Degrees)

WBID:

3170K

RQ:

2016-04-25-53

ORG ID:

21FLCEN

Longitude:

-81.5904

(Decimal Degrees)

Receiving Body of Water:

Kissimmee River

Field ID:

64CE0023

County:

Osceola

Sampling Team Members						WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Natalie Ayala										
Leif Boman						X	X	X	X	X

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# Betty Boop			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	13:45	0.1	0.2	7.6	87.4	7.1	0.1	VOB 0.2(s)	201	22.6	
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	SA-525900	9/16	☐ <2
Metals	☐ W-ICPMS ☒ W-ICP					☒ Ice ☒ HNO3			☒ <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 ☐ Enteroc ☐ QPCR					☒ Ice			
Periphyton	☐ ALGAE-ID					☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-AHERB-AA ☐ W-PYR-AA-R					☐ Ice			
	☐ W-PC-AA-SF ☐ W-UHERB-AA ☐ W-GLYPH					☐ Other			

Contains 1:1 Nitric Acid NA-525900 EXP: 09/16/16 Warning! See MSDS

Place Preservative Sticker (If Available)

Notes:		Place Label Here (If Available)	
Signature:		Date:	

Field Parameters Entered into LIMS: _____ (Initials/Date)	Field Parameters QC in LIMS: _____ (Initials/Date)
Date Migrated to STORET: _____ (Initials/Date)	Field Sheets Scanned/Saved: _____ (Initials/Date)

SAMPLE ID 76108 ORG ID ZIFLCEN LATITUDE _____
 COUNTY Osceola STORET # 64CE0023 LONGITUDE _____
 DATE 04/25/2016 TIME _____ SAMPLING AGENCY CEN DIST
 SITE NAME Davenport Creek @ E of
 FIELD ID/NAME _____ RECEIVING BODY OF WATER Kissimmee River

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural <u>30</u> Silviculture _____ Field/Pasture _____ Agricultural <u>20</u> Residential <u>30%</u> Commercial _____ Industry _____ Other (Specify) <u>Golf</u> <u>10</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 <u>5</u> m wide <u>0.25</u> m/s <u>0.17</u> m/s <u>0.2</u> m/s <u>45</u> m deep <u>0.2</u> m deep <u>0.3</u> 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>0.2</u> = <u>0.7</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 Invert ☐ PERI % Coverage # Times Sampled # Times Sampled			WATER QUALITY Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. Sat (%) Cond. (UMHO/CM) Salinity (PPT) SECCHI (M) Top: <u>0.1</u> <u>22.4</u> <u>7.1</u> <u>7.6</u> <u>87.4</u> <u>201</u> <u>0.1</u> <u>0.2(5)</u> Mid: _____ Bottom: _____ TOTAL DEPTH <u>0.2</u>					
Woody Debris (Snags) <u>1.5</u> <u>7</u> <u>7</u> Undercut Banks / Roots <u>1.5</u> <u>7</u> <u>7</u> Leaf Packs or Mat _____ <u>2</u> <u>7</u> Aquatic Vegetation _____ Rock or Shell Rubble _____ Sand _____ Mud / Muck / Silt _____ Other _____ Other _____			Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐			Water Surface Oils Normal ☒ Sheen ☐ Globbs ☐ Slick ☐ Other ☐		
Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: _____ Exp: _____			Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) _____			Clarity Clear ☒ Slightly Turbid ☐ Turbid ☐ Opaque ☐		
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☒ ☐ ☐ ☐ Fish: ☐ ☐ ☒ ☐ Aquatic Plants: ☐ ☒ ☐ ☐ Iron/Sulfur Bacteria: ☒ ☐ ☐ ☐			System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other (Specify) _____ AMBIENT FIELD CONDITIONS / NOTES: <u>Sediment sandy/silt.</u> ☐ The antecedent hydrologic conditions have been met to my best knowledge.					

SAMPLING TEAM

N Ayala / L. Borman

SIGNATURE:

[Signature]

DATE:

4/25/2016

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

SAMPLING AGENCY: <u>ZIFLCEN</u>		STORET STATION NUMBER: <u>64CE0023</u>	DATE (MM/DD/YY): <u>04/25/2016</u>	RECEIVING BODY OF WATER:
REMARKS:	COUNTY: <u>Oscola</u>	LOCATION: <u>Davenport Creek</u>	FIELD ID/NAME: <u>64CE0023</u>	

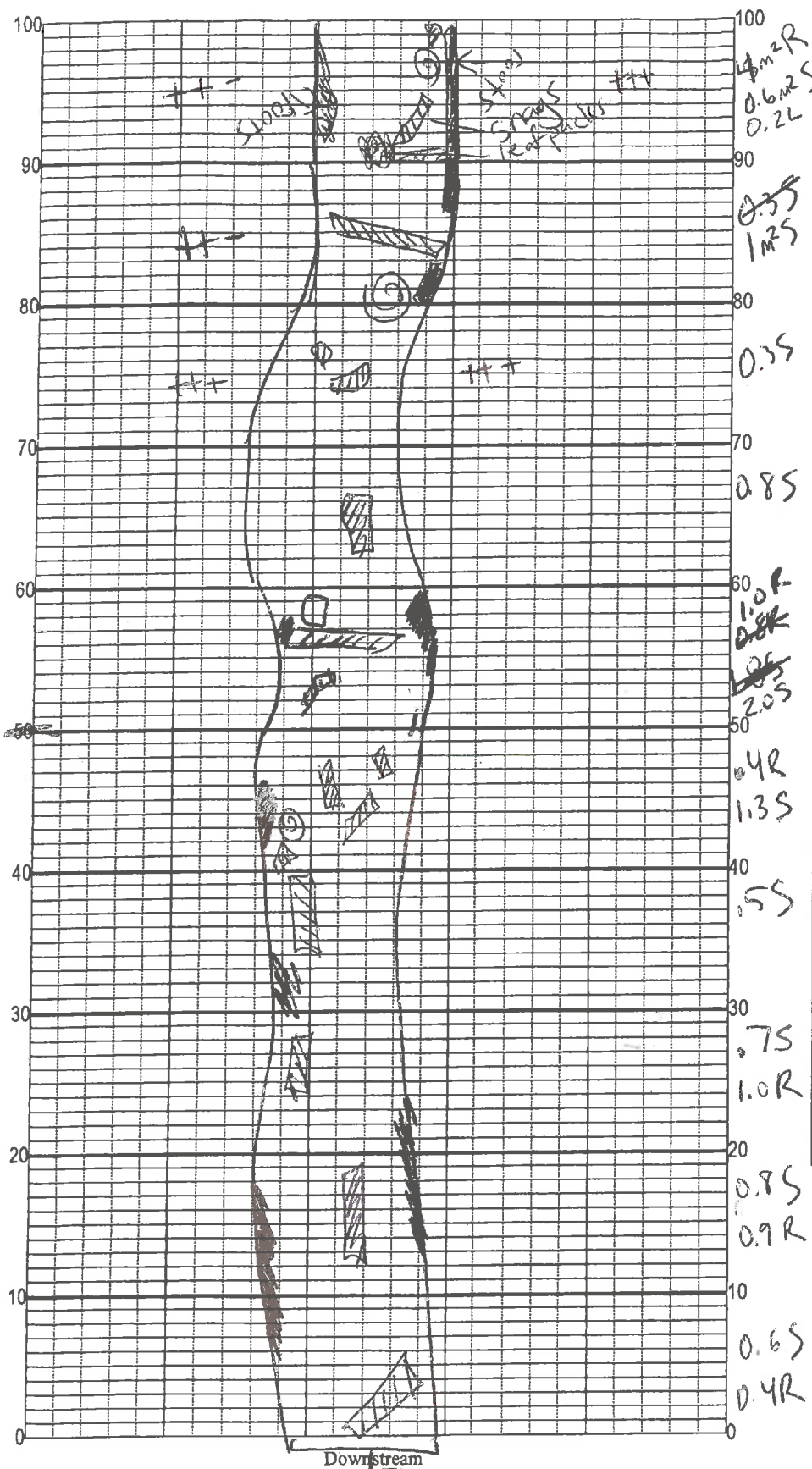
Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock]	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh 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>9</u>	20 19 18 17 16	15 14 13 12 11	10 <u>9</u> 8 7 6	5 4 3 2 1
Substrate Availability <u>3</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 7 6	Less than 5% major productive habitat 5 4 <u>3</u> 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>17</u> ----- Primary Score <u>42</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 12 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>18</u>	20 19 <u>18</u> 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability Right Bank <u>8</u> Left Bank <u>10</u>	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. <u>10</u> 9	Only meets 2 of the 3 requirements for optimal bank stability. <u>8</u> 7 6	Only meets 1 of the 3 requirements for optimal bank stability. 5 4	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank <u>9</u> Left Bank <u>10</u>	Width of vegetation greater than 18 m <u>10</u> <u>9</u>	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system 5 4	Less than 6 m of buffer zone due to intensive human activities 3 2 1
Riparian Zone Vegetation Quality Right Bank <u>10</u> Left Bank <u>10</u> ----- Secondary Score <u>75</u>	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. 10 9	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

117 TOTAL SCORE

Date: <u>4/25/2016</u>	Analyst: <u>N. Ayala</u>	Signature: <u>[Signature]</u>
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DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet

Left Bank



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

Location: Davenport.
Date: 04/25/2016
Sampler: N. Ayala/L. Borman

100 m: Latitude _____	Longitude _____
0 m: Latitude _____	Longitude _____
Substrates: Code key, draw proportionate habitat abundance. %	
Snags	1.5%
Roots/undercut banks	1.5%
Leaf Packs (or mats)	_____
Aquatic Macrophytes	_____
_____	_____
_____	_____
Pools	total # observed = <u>3</u> # range expected = <u>1-2</u>
Average width <u>4.5</u> m	
Average depth <u>0.2</u> m	
Velocity measured at <u>90</u> meter mark.	
WQ & chemistry taken at <u>90</u> 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:

2.0R NA 7.7R
4.7S NA 7.6S
15.3 total

Waterbody: Davenport Creek

Date: 4/25/16

County: Osceola Co

Store Number: 04160027

Analyst: N. Avda/C Buman

Signature: *[Handwritten Signature]*

Comments:

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1 m² of taxa present). Note in the boxes below if no dominant are selected, and note total macrophyte abundance rank for each section. Only the most common taxa are listed, so use blank spaces for additional taxa names.

HERBACEOUS SPECIES	Meter Mark										Specimen collected (check)	HERBACEOUS SPECIES	Meter Mark										Specimen collected (check)
	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100			0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	
<i>Alternanthera philoxeroides</i>												<i>Micranthemum glomeratum</i>											
<i>Bacopa caroliniana</i>												<i>Micranthemum umbrosum</i>											
<i>Bacopa monnieri</i>												<i>Myriophyllum aquaticum</i>											
<i>Bidens mitis</i>												<i>Najas guadelupensis</i>											
<i>Boehmeria cylindrica</i>												<i>Nuphar luteum</i>											
<i>Centella asiatica</i>												<i>Orontium aquaticum</i>											
<i>Cephalanthus occidentalis</i>												<i>Panicum hemitomon</i>											
<i>Ceratophyllum demersum</i>												<i>Panicum repens</i>											
<i>Chara</i>												<i>Panicum rigidulum</i>											
<i>Cicuta maculata</i>												<i>Pistia stratioides</i>											
<i>Cladium jamaicense</i>												<i>Polygonum glabra</i>											
<i>Colocasia esculenta</i>												<i>Polygonum hydropiperoides</i>											
<i>Crinum americanum</i>												<i>Polygonum punctatum</i>											
<i>Diodia virginiana</i>												<i>Pontedaria cordata</i>											
<i>Eichhornia crassipes</i>												<i>Potamogeton illinoensis</i>											
<i>Eleocharis (wispy viviparous)</i>												<i>Ruellia simplex</i>											
<i>Hydrilla verticillata</i>												<i>Sagittaria striata</i>											
<i>Hydrocotyle</i>												<i>Sagittaria kurziana</i>											
<i>Hygrophila polysperma</i>												<i>Sagittaria lancifolia</i>											
<i>Hymenocallis</i>												<i>Sagittaria latifolia</i>											
<i>Itea virginica</i>												<i>Salix caroliniana</i>											
<i>Lachnanthes caroliniana</i>												<i>Salvinia minima</i>											
<i>Landoltia punctata</i>												<i>Samolus parviflora</i>											
<i>Lemna</i>												<i>Saururus cernuus</i>											
<i>Limnophila sessiflora</i>												<i>Typha</i>											
<i>Ludwigia leptocarpa</i>												<i>Vallisneria americana</i>											
<i>Ludwigia palustris</i>												<i>Zizania aquatica</i>											
<i>Ludwigia peruviana</i>																							
<i>Ludwigia repens</i>																							
<i>Luziola fluitans</i>																							
					</																		

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: <u>Davenport Creek</u>					County: <u>Osceola</u>		Date: <u>04/25/2016</u>		Investigators: <u>N. Ayala/L. Boman</u>	
									STORET Station Number: <u>G4C50023</u>	

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1	N			60	1	N		
	2					2			
	3					3			
	4			96 NR		4			96 NR
	5			100		5			100
	6					6			
	7					7			
	8					8			
	9					9			
10	1				70	1			
	2					2			
	3					3			
	4					4			
	5			87		5			85
	6					6			
	7					7			
	8					8			
	9					9			
20	1				80	1			
	2					2			
	3					3			
	4					4			
	5			84		5			X
	6					6			X
	7					7			X
	8					8			
	9					9			
30	1				90	1			
	2					2			
	3					3			
	4					4			
	5			93		5			97 NR
	6					6			94
	7					7			
	8					8			
	9					9			
40	1				100	1			
	2					2			
	3					3			
	4					4			
	5			95 NR		5			98 NR
	6					6			92
	7					7			
	8					8			
	9					9			

Secchi depth	<u>105</u>
Estimated?	<u>0</u>

# points ranked 4-6	<u>0</u>
total points assessed	<u>90</u>
% points ranked 4-6	<u>0</u>

Check accompanying data collected at same site/date.	
Algal mat sample	
Linear Veg Survey	
Habitat Assessment	☒
SCI/Biorecon	☒
Water sample	☒
RQ- <u>2016-04-25-53</u>	

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%.

