

CALIBRATION AND VERIFICATION LOG (FDEP 507 FT 1000-FT 1500, FD 1000-FD 4000)

Boldly "X" this box if there is qualified data on this page.

Meter QUANTA #1 RQ- 08-22-14 Project SEI-Itchenbach

- Notes:** (1) Numbers ≤ 4 , are rounded down; numbers ≥ 5 are rounded up (e.g., 5.15 becomes 5.2).
 (2) Always wait for meter to stabilize before recording any readings.
 (3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Circle/Fill In: Lab Calibration or Calibration/Verification on Site _____
 Temperature (Quarterly) FT 1400 Date of Last Temperature Verification 10/7/2016

	Name	Date	Time CT-ET	Temp	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	P O'Connor	08/24/16	0725	23.5	8.49	8.45	100.0	—	—	Pass	Lab
ICV	✓	✓	0735	23.6	8.48	8.45	100.1	—	—	Pass	Lab
CCV	A Kalmbacher	8/24/16	1600	25.5	8.18	8.08	100.2	—	—	P	L
CCV											

Report DO mg/L with one decimal figure and DO % saturation as a whole number with no decimals.

DO Acceptance criteria from Table ± 0.3 mg/L.

Rapid-Pulse Sensors: DO Gain Range 0.7 to 1.4; DO Charge Range 25-75.

Optical: DO gain range 0.85 to 1.15; DO charge N/A.

Steady-state & Galvanic Sensors: DO Gain & Charge N/A.

	Name	Date	Time CT-ET	Lot #	Expir. Date	Standard μ mhos/cm	Meter Reading μ mhos/cm	Pass / Fail	Lab / Field
Calibr.	100um	08/24/16	0736	160616A	06/2017	1000	1000	Pass	Lab
ICV	✓	✓	0738	151113A	11/2016	100	100	Pass	Lab
CCV	A Kalmbacher	✓	1603	160616A	06/2017	1000	996	P	L
CCV									

Report specific conductance as a whole number with no decimal figure.

Conductivity Acceptance criteria $\pm 5\%$

	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Meter reading mV	Pass / Fail	Lab / Field
Calibr.	P O'Connor	08/24/16	0740	2606E04	06/2018	7.0	7.00	Pass	Lab
Calibr. ICV	✓	✓	0749	2602556	01/2018	4.0	3.85	Pass	Lab
Calibr. CCV	✓	✓	0750	2510A88	04/2017	10.0	10.00	Pass	Lab
ICV	A Kalmbacher	8/24/16	1607	2606E04	06/2018	7.0	7.01	P	L
CCV									
CCV									

Report pH with one decimal place; pH Acceptance criteria ± 0.2 SU;
 +180 $\pm$ 50; mV pH 10 Range -180 $\pm$ 50;
 and 180 mV

mV pH7 Range 0 $\pm$ 50;

mV pH 4 Range

Slope from 7 to 10 and 4 to 7 must be between 165

Depth (Quarterly)

Date of Last Depth Verification N/A

Depth Sensor (Gully)	Name	Time CT-ET	Zero the Sensor	ICV Value	Pass / Fail	Lab / Field
Pressure mode In air			0.000			

ICV acceptance criteria $\pm 5\%$ or ± 0.05 m, whichever is greater

Scanned 9/8/16



Ichetucknee at
US27



G1NE0531

ITAL PROTECTION
I FIELD SHEET

PAGE ____ OF ____

STORET Station Name: Date
Time

STORET Station ID: _____

WBID: 3579 RQ-2016-08-22-14 & 2016-08-22-13(LVA) SCI macroSS
ORG ID: 21 FLA

Date: 8/24/2016
(mm/dd/yyyy)

Data Qualified?
Yes / No

Latitude: 29.95344
(Decimal Degrees)

Longitude: 82.785607
(Decimal Degrees)

Receiving Body of Water: Santa Fe River

Field ID: G1NE0531

County: Columbia

Sampling Team Members					WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
Sparish									
POCONAW									

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

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

Water Level: Dry / Low / Normal / High / Flooded
Meter ID# Hydrolab Photos: Yes / No
Matrix: Fresh Marine / DI
Tide Falling: Yes / No / X

Time Zon	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	1030	0.3	0.4	5.0	57.0	5.9	0.1	0.45	331	22.1
CEN								0.45		

Biological Samples Collected: None HA SCI LVS RPS LVI Other Algae ID

Parameter Suite	Parameter Methods	Preservation	Acid Lot#	Expiration	pH
Preserved Nutrients	☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	☒ Ice ☒ H2SO4	157449	12/19/16	☒ <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)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS	☒ Ice			
Physical/Aggregate (Kit B)	☐ Alkalinity / W-F / W-TSS / TURBIDITY	☐ Ice			
Macroinvertebrates	☒ MI-FW-QLDC	☒ Formalin			
Microbiology	☐ E Coli ☐ F Coli ☐ Enterococcus ☐ 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: SCI, RPS, LVS

Signature: [Signature]

Ichetucknee at
US27

Date
Time



G1NE0531



21030050

Date: 8/24/16

Field Parameters Entered into LIMS: [Signature] 8/26/16
(Initials/Date)

Date Migrated to STORET: _____
(Initials/Date)

Field Parameters QC in LIMS: _____
(Initials/Date)

Field Sheets Scanned/Saved: _____
(Initials/Date)

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

shw#76744

SAMPLING AGENCY: <u>DEAR NEA ROC</u>	STORET STATION NUMBER: <u>21030050</u>	DATE (MM/DD/YY): <u>08/24/16</u>	RECEIVING BODY OF WATER: <u>Santa Fe River</u>
REMARKS: <u>Itchetucknee</u> <u>River is A Spring Run</u>	COUNTY: <u>Columbia</u>	LOCATION: <u>Itch. R @ US27</u>	FIELD ID/NAME: <u>G1NE0531</u>

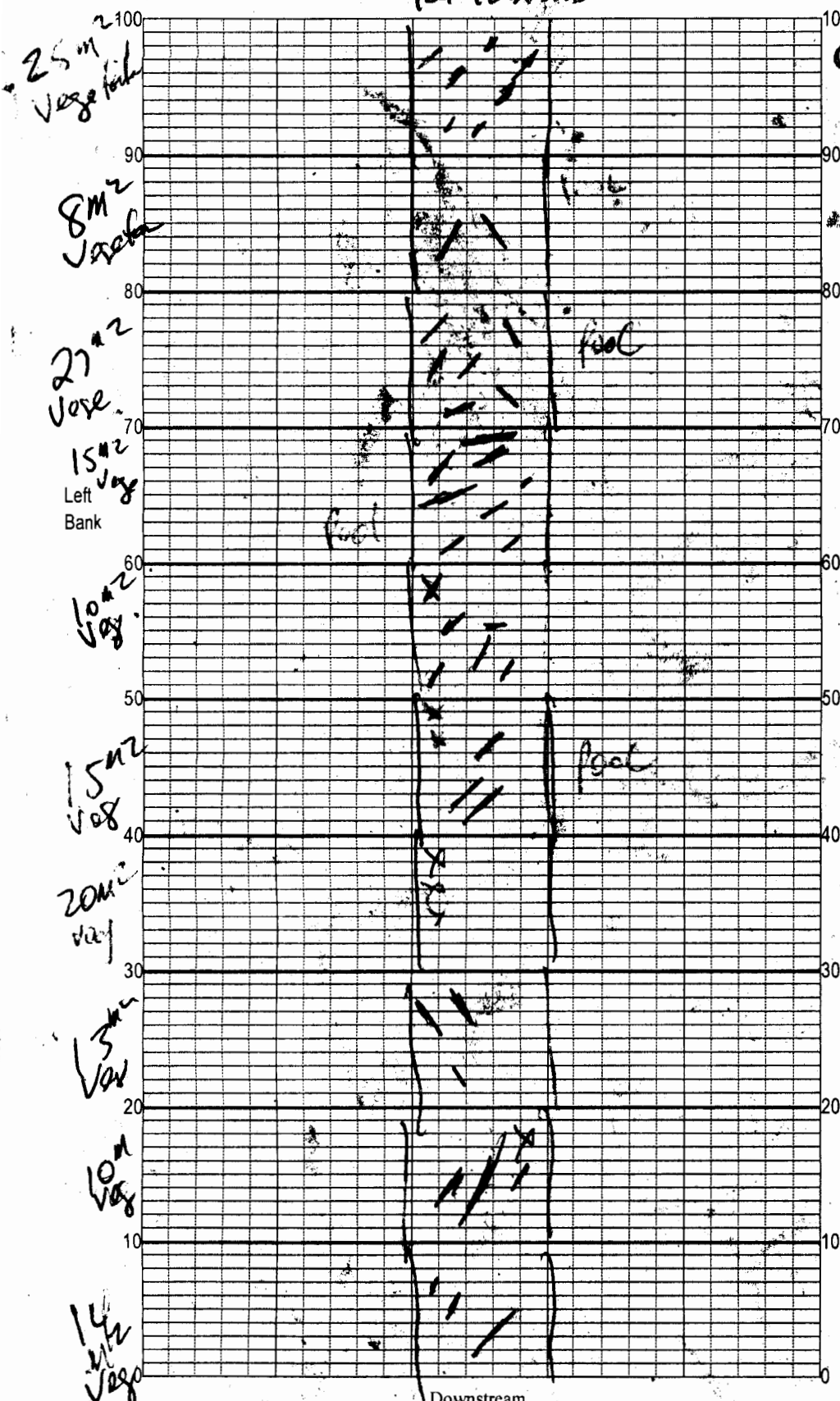
Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components	Four or more major productive habitats present (snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock)	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh 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>13</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>14</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 3 2 1
Water Velocity <u>20</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 13 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>13</u> Primary Score <u>60</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>20</u>	20 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>	10 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 18m	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>	10 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>10</u> Left Bank <u>10</u> Secondary Score <u>80</u>	10 9	8 7 6	5 4	3 2 1

140 TOTAL SCORE

Date: <u>08/24/16</u>	Analyst: <u>POConnor Patrick O'Connor</u>	Signature: <u>POConnor</u>
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DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet

10+12 m WD



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

0.4 m/s Location: Itkousan

Date: 08/24/16

Sampler: P. O'Brien

100 m: Latitude _____
Longitude _____

0 m: Latitude _____
Longitude _____

Substrates: Code key, draw proportionate habitat abundance. %

☒ Snags _____

☒ Roots/undercut banks _____

☒ Leaf Packs (or mats) _____

☒ Aquatic Macrophytes _____

☒ Rock _____

☐ _____

☐ Pools total # observed = _____
range expected = _____

Average width 10 m

Average depth 1.5 m

Velocity measured at 100/50 meter mark.

WQ & chemistry taken at 100 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:

8% SNAG
16% Veg
1% Root

SAMPLE ID _____ ORG ID 21 FLA LATITUDE _____
COUNTY COLUMBIA STORET # 21030050 LONGITUDE _____
DATE 08/24/16 TIME 1030 SAMPLING AGENCY NE ROC DEAR
SITE NAME Ich. River @ US27
FIELD ID/NAME G1 NE0531 RECEIVING BODY OF WATER SANTA FE River

RIPARIAN ZONE / STREAM FEATURES

Meter ID: QUANTA #1 DEP# 143734

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category):								Landscape Development Intensity Index (LDI)
Forest/Natural	Silviculture	Field/Pasture	Agricultural	Residential	Commercial	Industry	Other (Specify)	
							<u>St. Paul 100%</u>	
Local Watershed Erosion (select one): ☐ None ☒ Slight ☒ Moderate ☐ Heavy								Typical Width (m) Depth (m)/Velocity (m/sec) Transect
Local Watershed NPS Pollution: ☐ No evidence ☐ Slight ☐ Moderate ☐ Heavy								
Width of Riparian Vegetation (m) on Each Buffer Side				Hydrologic Modification Score (per FT 3101)				
Left Bank: <u>>18m</u> Right Bank: <u>>18m</u>								
High Water Mark: <u>0.7</u> + <u>2.2</u> = <u>2.2</u> (m) (above present water level) (present depth) (above bed)				Artificially Impounded ☐ Yes ☒ No				
Artificially ☒ No ☐ Mostly recovered, more sinuous				Canopy Cover % ☐ Open ☐ Lightly Shaded (11-45%)				
Channelized: ☐ Some recovery ☐ Recent, severe				☐ 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			WATER QUALITY Depth (M) Temp. (°C) pH (SU) D.O. (MG/L) D.O. Sat (%) Cond. (UMHO/CM) Salinity (PPT) SECCHI (M)					
Woody Debris (Snags) <u>8</u> <u>5</u> <u></u>			Top: <u>0.3</u> <u>22.1</u> <u>5.9</u> <u>5.0</u> <u>57.0</u> <u>331</u> <u>0.1</u> <u>1.5</u>					
Undercut Banks / Roots <u>1</u> <u>5</u> <u></u>			Mid: <u>0.3</u> <u>22.1</u> <u>5.9</u> <u>5.0</u> <u>57.0</u> <u>331</u> <u>0.1</u> <u>1.5</u>					
Leaf Packs or Mat <u>16</u> <u>5</u> <u></u>			Bottom: <u>0.3</u> <u>22.1</u> <u>5.9</u> <u>5.0</u> <u>57.0</u> <u>331</u> <u>0.1</u> <u>1.5</u>					
Aquatic Vegetation <u>16</u> <u>5</u> <u></u>			System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other (Specify) ☒ <u>Spring Run</u>					
Rock or Shell Rubble <u>1</u> <u>5</u> <u></u>			Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐			Water Surface Oils Normal ☒ Sheen ☐ Globs ☐ Slick ☐ Other ☐		
Sand <u>5</u> <u>4</u> <u></u>			Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>157449</u> Exp: <u>12-19-16</u>			Color Tannic ☐ Green (Algae) ☐ Clear ☒ Other (Specify) ☐		
Mud / Muck / Silt <u>10</u> <u>4</u> <u></u>			Algae Sample Taken? ☒ Yes ☐ No Sample Preserved? ☐ Yes ☒ No Lot Number: _____ Exp: _____			Clarity Clear ☒ Slightly Turbid ☐ Turbid ☐ Opaque ☐		
Other <u></u> <u></u> <u></u>			ABUNDANCE Not Obs. Rare Common Abundant					
Other <u></u> <u></u> <u></u>			Periphyton: ☐ ☐ ☐ ☒					
			Fish: ☐ ☐ ☐ ☒					
			Aquatic Plants: ☐ ☐ ☐ ☒					
			Iron/Sulfur Bacteria: ☐ ☐ ☒ ☐					
SAMPLING TEAM <u>J. Paerish, PO'Connor</u>			AMBIENT FIELD CONDITIONS / NOTES: <u>Spring Run Clear Skies 85%</u>					
			Hydrologic Disturbance Scoring ☐ 1-2 ☐ 3-4 ☒ 5-6 ☐ 7-8 ☐ 9-10 ☒ The antecedent hydrologic conditions have been met to my best knowledge.					
SIGNATURE <u>Paul A. Paerish</u>								

5610 76744

RPS 8304

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: <u>Itch. River @ US 27</u>					County: <u>COLUMBIA</u>		Date: <u>08/24/16</u>		Investigators: <u>J. Ferrish PO Conn</u>	
Transect (m)	Point 1=right	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	Transect (m)	Point 1=right	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover	
0	1	4			60	1	4			
	2	4	✓			2	4	✓		
	3	4	✓			3	4	✓		
	4	4	✓	10		4	5	✓		
	5	6	✓			5	3		60	
	6	6	✓			6	3			
	7	3	✓			7	N			
	8	4	✓			8	4			
	9	3	✓			9	4			
10	1	4			70	1	4			
	2	3	✓			2	4			
	3	3	✓			3	4			
	4	3	✓			4	3	✓		
	5	3	✓	35		5	3	✓	32	
	6	3	✓			6	3	✓		
	7	3	✓			7	3	✓		
	8	2	✓			8	3			
	9	2	✓			9	4			
20	1	4			80	1	5			
	2	3	✓			2	3	✓		
	3	3	✓			3	3	✓		
	4	3	✓			4	4	✓		
	5	3	✓	60		5	4	✓	80	
	6	3	✓			6	4	✓		
	7	3	✓			7	3			
	8	3	✓			8	3			
	9	3	✓			9	3			
30	1	3	✓		90	1	3			
	2	3	✓			2	3			
	3	3	✓			3	3			
	4	3	✓			4	3	✓	95	
	5	3	✓	58		5	3	✓		
	6	3	✓			6	3	✓		
	7	3	✓			7	3	✓		
	8	3	✓			8	3			
	9	3	✓			9	3			
40	1	3	✓		100	1	4			
	2	3	✓			2	4			
	3	3	✓			3	4			
	4	3	✓			4	3	✓	10	
	5	3	✓	90		5	3	✓		
	6	3	✓			6	3	✓		
	7	3	✓			7	3			
	8	3	✓			8	3			
	9	3	✓			9	3			
50	1	3	✓		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.					
	2	3	✓		Record "X" for points shallower than Secchi depth for which substrate cannot be seen or reached with the hand. No estimated rank.					
	3	3	✓		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.					
	4	3	✓		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%.					
	5	3	✓	90						
	6	3	✓							
	7	3	✓							
	8	3	✓							
	9	3	✓							

STORET Station Number: 21030050Secchi depth 1.55
Estimated?# points ranked 4-6 46
total points assessed 99
% points ranked 4-6 46Check accompanying data collected at same site/date.
Algal mat sample ☒
Linear Veg Survey ☒
Habitat Assessment ☒
SC Biorecon ☒
Water sample ☒
RQ-2016-08-22-14

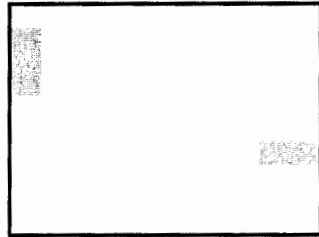
Algal Thickness Rank	
N	rough, no algae, slimy, algae up to 1mm
3	>1mm - 6mm
4	>6mm - 20mm
5	>20mm - 10 cm
6	>10 cm

4/4 +
3/4 +
4+

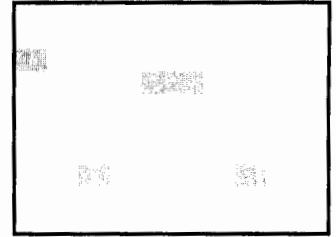
FDEP FORM FD 9000-32 LINEAR VEGETATION SURVEY FIELD SHEET

Percent Cover Categories for macrophytes in a 10 m segment of a stream 5 m wide

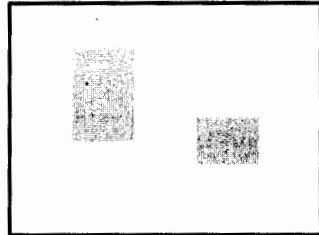
5% Macrophyte Coverage



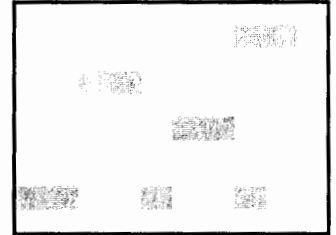
5% Macrophyte Coverage



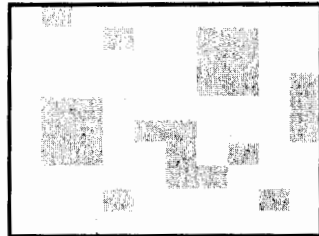
10% Macrophyte Coverage



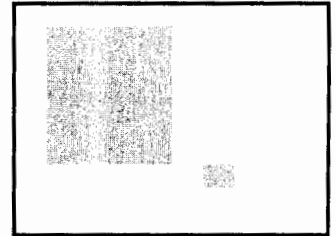
10% Macrophyte Coverage



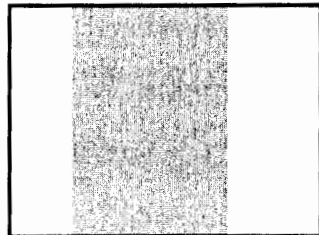
25% Macrophyte Coverage



25% Macrophyte Coverage



50% Macrophyte Coverage



50% Macrophyte Coverage

