



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION WATER QUALITY MONITORING PROGRAM FIELD SHEET

Data Qualified?

Yes / No

WIN / Field ID:



21030086

January 2018

Date: 5/8/2018
(mm/dd/yyyy)

COW CREEK AT SR 138

WBID: 3649 Latitude: 27.855888

County: Suwannee ORG ID: 21FLA Longitude: -82.756658

Receiving Body of Water: Santa Fe River RQ-2018-04-30-48

Sampling Team Members					WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
B. P. ...									
J. P. ...									

Sampling Equipment		
☒ Sample Container	☐ Van Dorn	☐ Pole
☐ Carboy	☐ Syringe	
☐ Dipper	☐ Other	
Depth Measured with YSI 7		
Equipment ID Q-467		

Collection Method		
☒ Wading	☐ Canoe/Kayak	
☐ From Shore	☐ Electric Motor	
☐ Other	☐ Gasoline Motor	

Water Level: Dry / Pooled / Low / Normal / High / Flooded
Photos: Yes / No / Flow: No Flow / Interstitial / Flowing / NA
Meter ID# YSI 7 Matrix: Fresh / Marine / DI
Tide: Rising / Falling / Slack / NA Tide Times: High / Low

Time Zone	Time	Total Depth (m)	Sample Depth (m)	Secchi Disk (m)	DO (mg/L)	DO (%SAT)	pH	Salinity (PPT)	Sp COND (µmhos/cm)	Temp. (C°)
EST	1255	0.2	0.1	0.25	6.6	73.8	7.41	0.13	278	20.26
CEN										

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

SBIO ID Numbers: SBIO-ID: HA-ID: RPS-ID: Macrophyte-ID: LIMS#:

Parameter Suite	Parameter Methods	Preservation	Lot#	Expiration	pH Check
Preserved Nutrients	☒ W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	☒ Ice ☐ H2SO4	754/1020	12/7/18	☒ <2
Metals	☐ W-ICPMS ☐ W-ICP	☐ Ice ☐ HNO3			☐ <2
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 µm Filter	☐ Ice	R74A24559		
Chlorophyll	☒ CHLSUITE-W	☐ Ice			
Physical/Aggregate (Fresh)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-CLIC / W-COLOR / W-SO4-IC / W-TDS	☐ Ice			
Physical/Aggregate (Marine)	☐ Alkalinity / W-F / W-TSS / TURBIDITY	☐ Ice			
Macroinvertebrates	☐ MI-FW-QLDC	☐ Formalin			
Periphyton	☐ ALGAE-ID	☐ Ice			
Microbiology	☒ E Coli ☐ F Coli ☐ Enterococci	☐ Ice			
Molecular	☒ PCR-FILTER ☐ PCR-HF183 ☐ PCR-BacR ☐ PCR-GULL2 ☐ PCR-GFD	☒ Ice			
Tracers	☐ W-SUC-AA-R ☐ W-UHERB-AA ☐ W-AHERB-AA	☐ Ice			
Pesticides	☐ W-PSNP-TQ ☐ W-UHERB-AA ☐ W-AHERB-AA ☐ W-CARB-AA ☐ W-PCL-SQ-R ☐ W-PYR-AA-R ☐ W-GLYPH ☐ W-SUC-AA-R	☒ Ice ☐ Other			

V-E8321-M5 V-E8321-TI

Notes:

Place Label Here

Signature: [Signature] Date: 5/8/18

Enter Field Parameters, Verify Station ID In LIMS DMT: [Signature] QC Station ID, Field Parameters In LIMS DMT: [Signature]

Scan/Save Field Sheets [Signature] Migrate Data to WIN: [Signature] Verify Data In WIN: [Signature]

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

AK

SAMPLING AGENCY: NE ROC		STORET STATION NUMBER: 21030086	DATE (MM/DD/YY): 5/8/18	RECEIVING BODY OF WATER: Sante Fe
REMARKS:	COUNTY:	LOCATION: COW@ 138	FIELD ID/NAME:	

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 <u>13</u> 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>12</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 <u>12</u> 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>19</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 <u>19</u> 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>15</u> ----- Primary Score <u>59</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. <u>15</u> 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>19</u>	20 <u>19</u> 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability Right Bank <u>7</u> Left Bank <u>7</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. 10 9	Only meets 2 of the 3 requirements for optimal bank stability. 8 <u>7</u> 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>10</u> Left Bank <u>6</u>	Width of vegetation greater than 18 m <u>10</u> 9	Width of vegetation >12 to 18m 8 7 <u>6</u>	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>7</u> ----- Secondary Score <u>66</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. <u>10</u> 9	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 <u>7</u> 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

125 TOTAL SCORE

Date: <u>5/8/18</u>	Analyst: <u>J. Bar</u>	Signature:
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2m Rock = 17m

Average width	<u>20</u>	m
Average depth	<u>0.2</u>	m
Velocity measured at	<u>100</u>	meter mark.
WQ & chemistry taken at	<u>0</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.		

~~<2 M of Macrophytes was observed while doing~~
the LVS? YES or NO

the LVS? YES or NO
X ~~1.5m~~
□ = 11m
0.2 depth
0.3 flow
Rock = 11m

Waterbody: <u>Cow Creek @ 138</u>	Date: <u>5/8/18</u>	County: <u>Sulphur</u>	Storet Number: <u>2103008</u>
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Comments: $< 2m^2$ of Veg in section

[illegible]

62-160.800, F.A.C. page 1 of 2 Revision Date: March 1, 2014

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

SAMPLE ID _____ ORG ID 21FLA LATITUDE 29.855888
COUNTY St. Johns STORET # 21020086 LONGITUDE -82.756638
DATE 5/8/18 TIME 1255 SAMPLING AGENCY VEAR VED
SITE NAME Cow Creek @ 138
FIELD ID/NAME _____ RECEIVING BODY OF WATER St. Johns River

RIPARIAN ZONE / STREAM FEATURES

Meter ID: YSZ 77

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural ☐ Silviculture ☐ Field/Pasture ☐ Agricultural ☐ Residential ☐ Commercial ☐ Industry ☐ Other (Specify) ☐								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 ☐ m/s ☐ m/s ☐ m deep ☐ m deep ☐ m deep
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>218.7</u> Right Bank: <u>68.7</u>				Hydrologic Modification Score (per FT 3101) ☐				☐ m/s ☐ m/s ☐ m/s ☐ m deep ☐ m deep ☐ m deep
High Water Mark: <u>1.0</u> + <u>0.2</u> = <u>1.2</u> (m) (above present water level) (present depth) (above bed)				Artificially Impounded ☐ Yes ☒ No				☐ m/s ☐ m/s ☐ m/s ☐ m deep ☐ m deep ☐ m deep
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 % Coverage ☐ INVERT ☐ PERI # 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>0.2</u> <u>20.26</u> <u>7.41</u> <u>6.6</u> <u>73.8</u> <u>278</u> <u>0.13</u> <u>0.2</u> Mid: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ Bottom: ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☐					
Woody Debris (Snags) <u>5</u> Undercut Banks / Roots <u>7</u> Leaf Packs or Mat Aquatic Vegetation Rock or Shell Rubble.. <u>5</u> Sand..... <u>83</u> Mud / Muck / Silt Other Other			Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐			Water Surface Oils Normal ☒ Sheen ☐ Globs ☐ Slick ☐ Other ☐		
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☒ ☐ ☐ ☐ Fish: ☐ ☒ ☐ ☐ Aquatic Plants: ☒ ☐ ☐ ☐ Iron/Sulfur Bacteria: ☐ ☐ ☒ ☐			Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>7341026</u> Exp: <u>12/7/18</u>			Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) ☐		
AMBIENT FIELD CONDITIONS / NOTES: Hydrologic Disturbance Scoring ☐ 1-2 ☐ 3-4 ☐ 5-6 ☐ 7-8 ☐ 9-10 ☐ The antecedent hydrologic conditions have been met to my best knowledge.			Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: _____ Exp: _____			Clarity Clear ☒ Slightly Turbid ☐ Turbid ☐ Opaque ☐		
SAMPLING TEAM <u>BP, JP</u>			SIGNATURE: <u>BP</u>					

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78384 2r

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Cow Creek @ 188 County: Calaveras Date: 5/8/18 Investigators: DP, JP

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					4			
	5			71		5			96
	6					6			
	7					7			
	8					8			
	9	N				9	N		
10	1	N			70	1	N		
	2					2			
	3					3			
	4					4			96
	5			82		5			
	6					6			
	7					7			
	8					8			
	9	N				9	N		
20	1	N			80	1	N		
	2					2			
	3					3			
	4					4			
	5			95		5			96
	6					6			
	7					7			
	8					8			
	9	N				9	N		
30	1	N			90	1	N		
	2					2			
	3					3			
	4					4			
	5			96		5			95
	6					6			
	7					7			
	8					8			
	9	N				9	N		
40	1	N			100	1	N		
	2					2			
	3					3			
	4					4			
	5			96		5			96
	6					6			
	7					7			
	8					8			
	9	N				9	N		
50	1	N				1	N		
	2					2			
	3					3			
	4					4			
	5			94		5			
	6					6			
	7					7			
	8					8			
	9	N				9	N		

STORET Station Number:
21030086

Secchi depth 0.2
Estimated? NO

points ranked 4-6 0
total points assessed 99
% points ranked 4-6 0

Check accompanying data collected at same site/date:
Algal mat sample ☐
Linear Veg Survey ☒
Habitat Assessment ☒
SCI/Biorecon ☐
Water sample ☒
RQ- 2015-04-30-48

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%.

Florida Department of Environmental Protection
Central Laboratory Submittal Form

Customer: NE-DIST

Requester: Jeremy M. Parrish

Field Report Prepared By: B. Davis

Project ID: SMP

Collected By: B. Davis

Sampling Agency: WEB BEAR

WIN / Field ID:		Collection (comp begin or grab)		Eastern Composite end		Bottle Group(s)
21030086		Comp	Grab	Date	Time	(See pg 2)
SANTA FE RIVER @ HOLLINGSWORTH BLUFF		Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		A
Temp (C) 22.4		pH 7.42		Sample Depth 0.3		
Salinity (ppt) 0.19		Comments		ft Sp. Conductance (umho/cm) 401		
WIN / Field ID: COW CREEK AT SR 138		Collection (comp begin or grab)		Eastern Composite end		Bottle Group(s)
21030086		Comp	Grab	Date <td>Time</td> <td></td>	Time	
Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		Total Res. Chlorine		B
Temp (C) 20.26		pH 7.41		Sample Depth 0.1		
Salinity (ppt) 0.13		Comments		ft Sp. Conductance (umho/cm) 228		
Location		Collection (comp begin or grab)		Eastern Composite end		Bottle Group(s)
Field ID		Comp	Grab	Date <td>Time</td> <td></td>	Time	
Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		Total Res. Chlorine		
Temp (C)		pH		Sample Depth		
Salinity (ppt)		Comments		ft Sp. Conductance (umho/cm)		
Location		Collection (comp begin or grab)		Eastern Composite end		Bottle Group(s)
Field ID		Comp	Grab	Date <td>Time</td> <td></td>	Time	
Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		Total Res. Chlorine		
Temp (C)		pH		Sample Depth		
Salinity (ppt)		Comments		ft Sp. Conductance (umho/cm)		
Location		Collection (comp begin or grab)		Eastern Composite end		Bottle Group(s)
Field ID		Comp	Grab	Date <td>Time</td> <td></td>	Time	
Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		Total Res. Chlorine		
Temp (C)		pH		Sample Depth		
Salinity (ppt)		Comments		ft Sp. Conductance (umho/cm)		
Latitude		Longitude		Comments		
dd dms		dd dms				
WIN/STORET #		Collection (comp begin or grab)		Eastern Composite end		Bottle Group(s)
Field ID		Comp	Grab	Date <td>Time</td> <td></td>	Time	
Matrix (type, e.g., Salt, Fresh, etc)		Diss. Oxygen		Total Res. Chlorine		
Temp (C)		pH		Sample Depth		
Salinity (ppt)		Comments		ft Sp. Conductance (umho/cm)		
Latitude		Longitude		Comments		
dd dms		dd dms				

Relinquished By: B. Davis	Date/Time: 5/8/18 1630	Shipping Method: FedEx	Number of Coolers Shipped: 2	Received By:	Date/Time:
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Group: A	Bottle Type: ALKALINITY TURBIDITY W-CL-IC W-COLOR W-F W-SO4-IC W-TDS W-TSS	P-1L	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab	/
Group: A	Bottle Type: CHLSUITE-W	BP-1L	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1
Group: A	Bottle Type: NED-AEG-EC	P-120ML-WC-THI	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1 to AEL
Group: A	Bottle Type: W-NH3 W-NO2NO3 W-S-A-TP W-TKN W-TOC	P-500ML	# of Bottles: 1	Preservative:	ICE And H2SO4	Enter Number of Bottles Sent to Lab	1
Group: A	Bottle Type: W-PO4-F	P-125ML	# of Bottles: 1	Preservative:	FILTER-ICE	Enter Number of Bottles Sent to Lab	1
Group: B	Bottle Type: ALKALINITY TURBIDITY W-CL-IC W-COLOR W-F W-SO4-IC W-TDS W-TSS	P-1L	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab	/
Group: B	Bottle Type: CHLSUITE-W	BP-1L	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1
Group: B	Bottle Type:	P-120ML-WC-THI	# of Bottles: 1	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1

Group: B	Bottle Type: NED-AEG-EC	P-120ML-WC-THI	# of Bottles: 1	Preservative: ICE	Enter Number of Bottles Sent to Lab	1 to AEL
Group: B	Bottle Type: PCR-FILTER	QPCR-P-500ML	# of Bottles: 1	Preservative: ICE	Enter Number of Bottles Sent to Lab	1
Group: B	Bottle Type: W-E8321-DI W-E8321-MS	BG-500ML	# of Bottles: 1	Preservative: ICE	Enter Number of Bottles Sent to Lab	1
Group: B	Bottle Type: W-NH3 W-NO2NO3 W-S-A-TP W-TKN W-TOC	P-500ML	# of Bottles: 1	Preservative: ICE And H2SO4	Enter Number of Bottles Sent to Lab	1
Group: B	Bottle Type: W-PO4-F	P-125ML	# of Bottles: 1	Preservative: FILTER-ICE	Enter Number of Bottles Sent to Lab	1
Group: C	Bottle Type: MI-FW-QLDC	PJ-2L	# of Bottles: 2	Preservative: Formalin	Enter Number of Bottles Sent to Lab	2



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[illegible]