

RQ-2019-03-18-24

Field Personnel processing steps

☐ New Field IDs created (when using a new station) Date: _____ initials: _____ ☒ NA

☐ Create entry in SMPStationCreationFile if new station is used

\\Fidep1\wqap\NW ROC\TMDL\WIN_Station Creation

☒ Date sampled Date: 7/31/19 initials: SS

☐ Update MAT Date: _____ initials: _____

☒ Update "SMP Tracker" Date: 8/1/19 initials: SS

☒ Photos put into archive Date: 8/7/19 initials: SS ☐ NA

☒ RQ Sheet – from LIMS (display/print request)

☒ Field Sheets initialed/dated @ "Scan/Save Field Sheets" then scanned (with calibration logs) and saved into:

Scans_ToBeProcessed Date: 8/7/19 initials: SS

☒ Update "Data Tracker"

\\publicfiles\pubfds\DEAR\WQAPmonitoring\StrategicMonitoring\2019\21FLPNS

Ready for folder system (top)

LIMS processing (to be completed by LIMS data personnel) (MC)

☐ Field parameters entered into LIMS Date: _____ initials: _____

☐ Digital RQ packet put into

SMP 2019/Data/Scanned Field Sheets Date: _____ initials: _____

☐ Digital field Sheets put into archive Date: _____ initials: _____

☐ Date submitted for QA/QC Date: _____ initials: _____

☐ Update "Data Tracker"

Database processing (Cheryl)

☐ Field parameters QA/QC in LIMS Date: _____ initials: _____

☐ Lab results put into archive (CB) Date: _____ initials: _____

☐ Data migrated to WINS Date: _____ initials: _____

☐ Update "Data Tracker"

Notes:

Date of Request: 18-FEB-2019
 Created By: KING_M On: 18-FEB-2019
 Modified By: JASROTIA_P On: 27-FEB-2019
 Customer: NW-DIST
 Project: SMP
 Division: Division of Environmental Assessment and Restoration
 District: Northwest District NWROC
 Sampling Event: SMP Bioassessment

Send Coolers To:

Phone: 850-595-0605
 160 Government Center
 Suite 208
 Pensacola, FL 32502-5794
 Attn: Michael King

Program Module Number:

Priority: 3
 Event Status: R
 Criminal Investigation: NO
 Chemistry Request Reviewed By: WATTS_J On: 27-FEB-2019
 Biology Request Reviewed By: JASROTIA_P On: 27-FEB-2019
 Sampling Kit Required: YES Ship on: 08-MAR-2019
 Sampling Kit Shipped: YES On: 28-FEB-2019
 Sampling Kit Packed By: SHAIK_A
 Preservatives Needed: NO
 Date to Receive Samples: 18-MAR-2019
 Received By: KLUG_K On: 01-AUG-2019

Send Final Report To:

160 Government Center
 Suite 208
 Pensacola, FL 32502-5794
 Attn: Cheryl Bunch

Report Type: Final Only
 FTP Data: NO
 QC Report: YES
 Date Log: NO
 Authorization Log: NO

Comments: Group A: Nutrients, Metals, Tracers, Q-PSNP-TQ
 Group B: SCI, Algae_ID

Bottle Group A (Water) With 3 Samples:

Bottle Type: P-1L	Number of Bottles: 3	Preserved With: ICE
ALKALINITY	Template: DEFAULT	(SM 2320 B-97) Alkalinity in aqueous matrices as mg CaCO ₃ /L
Total Alkalinity		
TURBIDITY	Template: DEFAULT	(EPA 180.1 Rev. 2.0) Turbidity in aqueous matrices
Turbidity		
W-CL-IC	Template: DEFAULT	(EPA 300.0 Rev. 2.1) Chloride in aqueous matrices
Chloride		
W-COLOR	Template: DEFAULT	(SM 2120 B) True Color measured at 450 nm
Color (true)		
W-F	Template: DEFAULT	(SM 4500 F-C-97) Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)
Fluoride		
W-SO4-IC	Template: DEFAULT	(EPA 300.0 Rev. 2.1) Sulfate in aqueous matrices
Sulfate		
W-TDS	Template: DEFAULT	(SM 2540 C-97) Total Dissolved Solids in aqueous matrices
TDS		
W-TSS	Template: DEFAULT	(SM 2540 D-97) Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample
TSS		
Bottle Type: BP-1L	Number of Bottles: 3	Preserved With: ICE
CHLSUITE-W	Template: DEFAULT	(SM 10200 H (mod.)) Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry
Chlorophyll-a, Corrected		
Chlorophyll-a, Uncorrected		
Phaeophytin-a		
Bottle Type: TEST HAS NO	Number of Bottles: 3	Preserved With: ICE

Bottle Group A (Water) With 3 Samples:

Bottle Type: TEST HAS NO	Number of Bottles: 3	Preserved With: ICE
NW-UWF-ECQ	Template: DEFAULT	(SM 9223 B Quanti-Tray) E. coli by Colilert-18/QT by UWF in Pensacola
Escherichia Coli-Quanti-Tray		
Bottle Type: BG-500ML	Number of Bottles: 3	Preserved With: ICE
W-E8321-DI	Template: DEFAULT	(EPA 8321B) Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS
*Acesulfame K		
*AMPA		
*Endothall		
*Glufosinate		
*Glyphosate		
*Sucralose		
W-E8321-MS	Template:	(EPA 8321B) Pesticides, herbicides, and other chemicals in water matrices by HPLC/MS/MS
*Acetaminophen		
*Carbamazepine		
*Fluridone		
*Hydrocodone		
*Ibuprofen		
*Imazapyr		
*Naproxen		
*Primidone		
*Pyraclostrobin		
*Triclopyr		
2,4-D		
Bentazon		
Diuron		
Fenuron		
Imidacloprid		
Linuron		
MCP		
Bottle Type: P-500ML	Number of Bottles: 3	Preserved With: HNO3
W-ICP	Template:	(EPA 200.7 Rev. 4.4) Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects
Barium		
Calcium		
Iron		
Magnesium		
Potassium		
Sodium		
Zinc		
W-ICPMS	Template:	(EPA 200.8 Rev. 5.4) Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects
*Boron		
Aluminum		
Antimony		
Arsenic		
Cadmium		
Chromium		
Copper		
Lead		
Nickel		
Selenium		
Silver		
Thallium		
Bottle Type: P-500ML	Number of Bottles: 3	Preserved With: ICE And H2SO4
W-NH3	Template: DEFAULT	(EPA 350.1 Rev. 2.0) Ammonia in aqueous matrices as mg N/L
Ammonia-N		
W-NO2NO3	Template: DEFAULT	(EPA 353.2 Rev. 2.0) Nitrite/Nitrate in aqueous matrices as mg N/L
NO2NO3-N		
W-S-A-TP	Template: DEFAULT	(EPA 365.1 Rev. 2.0) Total Phosphorus in aqueous matrices as mg P/L
Total-P		
W-TKN	Template: DEFAULT	(EPA 351.2 Rev. 2.0) Total Kjeldahl Nitrogen in aqueous matrices

Bottle Group A (Water) With 3 Samples:

Bottle Type: P-500ML Number of Bottles: 3 Preserved With: ICE And H2SO4
 W-TKN Template: DEFAULT (EPA 351.2 Rev. 2.0) Total Kjeldahl Nitrogen in aqueous matrices
 Kjeldahl Nitrogen
 W-TOC Template: DEFAULT (SM 5310 B-00) Nonpurgeable Organic Carbon in aqueous matrices
 Organic Carbon
 Bottle Type: P-125ML Number of Bottles: 3 Preserved With: FILTER-ICE
 W-PO4-F Template: DEFAULT (EPA 365.1 Rev. 2.0) Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L
 O-Phosphate-P
 Bottle Type: BG-1L Number of Bottles: 8 Preserved With: ICE
 W-PSNP-TQ Template: DEFAULT (EPA 8270E) Organonitrogen and phosphorus pesticides in water matrices by GC/MS/MS

*Dimethenamid
 *Dithiopyr
 *Fipronil Desulfinyl
 *Oxadiazon
 *Prodiamine
 *Tebuconazole
 Acetochlor
 Alachlor
 Ametryn
 Atrazine
 Atrazine Desethyl
 Azinphos Methyl
 Bromacil
 Butylate
 Chlorpyrifos Ethyl
 Chlorpyrifos Methyl
 Cyanazine
 Demeton
 Diazinon
 Disulfoton
 EPTC
 Ethion
 Ethoprop
 Fenamiphos
 Fipronil
 Fipronil Sulfide
 Fipronil Sulfone
 Fonofos
 Hexazinone
 Malathion
 Metalaxyl
 Metolachlor
 Metribuzin
 Mevinphos
 Molinate
 Norflurazon
 Parathion Ethyl
 Parathion Methyl
 Pendimethalin
 Phorate
 Prometon
 Prometryn
 Simazine
 Terbufos
 Terbutylazine

Bottle Group B (Biological) With 3 Samples:

Bottle Type: PJ-2L Number of Bottles: 6 Preserved With: Formalin
 MI-FW-QLDC Template: DEFAULT (SOP-IZ06) No. Taxa of FW macroinverts, qual samp, 20 dipnets.
 *Macroinvert-FW-Qual-DipnetX20-#Taxa-Rep2
 *Stream Condition Index (SCI)
 Bottle Type: PT-50ML Number of Bottles: 3 Preserved With: ICE

Bottle Group B (Biological) With 3 Samples:

Bottle Type: PT-50ML

Number of Bottles: 3

Preserved With: ICE

ALGAL_ID

Template: DEFAULT

(SOP-AB05) Qualitative assessment of algal taxa present without counts

*Dominant sample taxon

* - The laboratory is not NELAP certified for this analyte/method, or certification is not applicable.

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

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

Meter ID: 154179

RQ: 2019-03-18-24

Project: smp

- Notes: (1) Always wait for meter to stabilize before recording any readings.
 (2) Report all digits displayed. Do not round before reporting measurements. (See special instructions for depth).
 (3) For Calibrations, record calibrated meter reading. Do not record initial meter reading before calibration.

Temperature (Quarterly) FT 1400

Date of Last Temperature Verification 6/13/19

DO DEP SOP FT 1500	Name	Date	Time CT-ET	Temp °C	Baro-meter mmHg	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.											P / F	L / F
TCV CCV	J. Hode	7/31/19	1632	27.3	765.6	8.0	8.02	100.5			P / F	L / F
CCV ICL	J. Hode	7/31/19	0717	23.8	767.0	8.5	8.57	100.6	-	-	P / F	L / F
CCV	J. Hode	7/31/19	0729	23.8	767.1	8.5	8.58	100.6	-	-	P / F	L / F

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 (Pro DSS 0.75 to 1.50); DO charge N/A. Steady-state & Galvanic Sensors: DO Gain & Charge N/A.

Spec. Cond. FT 1200	Name	Date	Time CT-ET	Lot #	Expir. Date	Standard μ hos/cm	Meter Reading μ hos/cm	Pass / Fail	Lab / Field
Calibr.	J. Hode	7/31/19	0721	190116A	Jan '20	1000	(000)	P / F	L / F
ICV	J. Hode	7/31/19	0723	190618A	June '20	100	103.8	P / F	L / F
CCV	J. Hode	7/31/19	1635	190116A	Jan '20	9000	994	P / F	L / F
CCV								P / F	L / F

Conductivity Acceptance criteria $\pm 5\%$

pH DEP SOP FT 1100	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Temp °C	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	J. Hode	7/31/19	0725	284803	Oct '20	7.	24.6	7.01	-62.8	P / F	L / F
Calibr.	J. Hode	7/31/19	0727	2902818	Jan '21	4.	22.0	4.00	112.1	P / F	L / F
Calibr.	J. Hode	7/31/19	0729	4904209	Sep '20	10.	24.5	10.01	231.1	P / F	L / F
ICV	J. Hode	7/31/19	0731	2902818	Jan '21	4.0	22.2	3.96	117.6	P / F	L / F
CCV	J. Hode	7/31/19	1637	284803	Oct '20	7.6	24.1	6.99	-56.8	P / F	L / F
CCV										P / F	L / F

pH Acceptance criteria ± 0.2 SU; mV pH 7 Range 0 ± 50 ;

mV pH 4 Range $+180 \pm 50$;

mV pH 10 Range -180 ± 50 ;

If mV are recorded: slope from 7 to 10 169.3, slope from 4 to 7 181.9 (both must be between 165 and 180 mV)

Does meter have a depth sensor that will be used to measure total depth & sample depth? YES NO / NA (not surf. water project)

If YES, complete daily Calibr. & ICV below and list date of last quarterly depth verification: 6/13/19

If NO, what will be used? (circle one) Secchi Disk Line / Sonar Unique ID: _____; Date of last verification: _____

Depth Sensor (Daily Calibration & ICV)	Name	Date	Time CT-ET	Calibrated Value (0.00 or Offset), meters	ICV Value, meters	Pass / Fail	Lab / Field
Pressure mode in air	J. Hode	7/31/19	0733	0.00	0.00	P / F	L / F

Report two decimal places. Round numbers ≤ 4 down, ≥ 5 up. ICV acceptance criteria $\pm 5\%$ or ± 0.05 m, whichever is greater.

COMMENTS:

Site Name Yellow River above METTS Creek Date: 07/31/19
Field ID G4NW0370 Storet G4NW0370 Project: Smp
Visit ID 80061 RQ: 2019-03-18-2 y
RPS ID 9414 LIMS ID: N/A
VPDB ID N/A
HA ID 16167

☐ LVI

☐ RPS/LVS Only

☒ Sample Site Created in SBIO

☒ Phys/Chem entered in SBIO

☒ HA entered in SBIO

Initial JS

☐ Date and Initial QA: _____

☒ RPS entered in SBIO

Initial JS

☐ Date and Initial QA: _____

☐ LVI entered in SBIO

Initial _____

☐ Date and Initial QA: _____

☒ < 2 m² vegetation

☐ Plants getting verified

Date submitted: _____

☐ Plants verified

Date returned: _____

☐ RPS authorized in SBIO

☐ Date and Initial: _____

☐ RPS score: _____

☐ VPDB authorized in SBIO

☐ Date and Initial: _____

☐ VPDB score: _____

☐ SCI complete: _____

SCI Score: _____



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2019

Data Qualified?

Yes / No

WIN Station Name: Yellow River above Metts Creek

Date: 07/31/19
(mm/dd/yyyy)

WIN/ Field ID: G4NW0370

WBID: 30C

Latitude: 30.672800

County: Okaloosa

ORG ID: 21FLPNS

Longitude: -86.738460
(Decimal Degrees)

Receiving Body of Water: Blackwater Bay

RQ-2019- 03-18-24
(Decimal Degrees)

Sampling Team Members					WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check	Sampling Equipment				
<i>S. Hodge</i> <i>N. Mulkey</i>										☒ Sample Container	☐ Van Dorn	☐ Pole		
										☐ Carboy	☒ Syringe			
										☐ Dipper	☐ Other			
										Depth Measured with				
										Equipment ID				
										Collection Method				
										☒ Wading	☐ Canoe/Kayak			
										☐ From Shore	☐ Electric Motor			
										☐ Other	☐ Gasoline Motor			
Water Level: Dry/ Pooled/ <u>Low</u> / Normal / High / Flooded					Meter ID# <u>154179</u>					Matrix: <u>Fresh</u> / Marine / DI				
Photos: <u>Yes</u> / No					Flow: No Flow / Intestinal / <u>Flowing</u> / NA					Tide: Rising/ Falling/ Slack/ <u>NA</u>				
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 (umhos/cm)	Temp. (C°)				
EST		<u>1.4</u>		<u>VOB</u>										
<u>CEN</u>	<u>1020</u>		<u>0.2</u>		<u>7.63</u>	<u>93.9</u>	<u>6.14</u>	<u>0.02</u>	<u>43.6</u>	<u>26.5</u>				
Biological Samples Collected: None <u>HA</u> <u>SCI</u> <u>RPS</u> 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		<u>9010030</u>	<u>4/10/20</u>	☒ 2			
Metals		☒ W-ICPMS ☒ W-ICP					☒ Ice ☒ HNO3		<u>9099030</u>	<u>4/09/20</u>	☒ 2			
Filtered Nutrients		☒ W-PO4-F ☒ Field Filtered 0.45 um Filter					☒ Ice		<u>15159049</u>					
Chlorophyll		☒ CHLSUITE-W					☒ Ice							
Physical/Aggregate (Fresh)		☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS					☒ Ice							
Physical/Aggregate (Marine)		☐ Alkalinity / W-BR-IC / 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-BacR ☐ PCR-GULL2 ☐ PCR-HF183 ☐ PCR-DG3 ☐ PCR-GFD					☐ Ice							
Tracers		☒ W-E8321-DI ☒ W-E8321-MS					☐ Ice							
Pesticides		☒ W-PSNP-TQ					☒ Ice							
Phytoplankton		☐ DTY-QN-C ☐ PKD-QN-C												

Notes:

Field/WIN ID →



G4NW0370

Location:

Yellow River above Metts Creek

Signature:

S. Hodge

Date:

7/31/19

LIMS EVENT ID:

WIN Import ID:

Enter Field Parameters, Verify Station ID In LIMS DMT:

QC Station ID, Field Parameters In LIMS DMT:

Scan/Save Field Sheets

22

8/7/19

Migrate Data to WIN:

Verify Data In WIN:

(Initials/Date)

(Initials/Date)

(Initials/Date)

(Initials/Date)

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

SAMPLE ID 80061 ORG ID 21FLPNS LATITUDE 30.672982
 COUNTY Oklahoma STORET # CHNW0370 LONGITUDE 96.78032
 DATE 7/31/19 TIME 1420 SAMPLING AGENCY FDEP NWROC
 SITE NAME Yellow River above Meigs Creek
 FIELD ID/NAME CHNW0370 RECEIVING BODY OF WATER Blackwater Bay

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) ☐								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>60</u> m wide <u>0.4</u> m/s <u>0.4</u> m/s <u>0.33</u> m/s <u>71.8</u> m deep <u>1.4</u> m deep <u>0.5</u> m deep
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>714</u> Right Bank: <u>718</u>				Hydrologic Modification Score (per FT 3101) ☐				
High Water Mark: <u>2.0</u> + <u>1.4</u> = <u>3.4</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			WATER QUALITY							
Invert ☐ PERI ☐ % Coverage # Times Sampled # Times Sampled			Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)
Woody Debris (Snags) <u>14</u> <u>57</u>			Top: <u>0.3</u>	<u>26.5</u>	<u>6.14</u>	<u>7.63</u>	<u>93.9</u>	<u>43.6</u>	<u>0.02</u>	<u>1.4</u>
Undercut Banks / Roots <u>14</u> <u>57</u>			Mid:							☒ VOB
Leaf Packs or Mat <u>105</u> <u>8</u>			Bottom:							TOTAL DEPTH <u>1.4</u>
Aquatic Vegetation			Meter ID: <u>154179</u>							
Rock or Shell Rubble			Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐			Water Surface Oils Normal ☒ Sheen ☐ Globbs ☐ Slick ☐ Other ☐				
Sand <u>98.2</u> <u>43</u>			Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: Exp:			Color Tannic ☐ Green (Algae) ☐ Clear ☒ Other (Specify)				
Mud / Muck / Silt <u>1</u> <u>1</u>			Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: Exp:			Clarity Clear ☐ Slightly Turbid ☒ Turbid ☐ Opaque ☐				
Other			System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify)							
ABUNDANCE Not Obs. Rare Common Abundant			AMBIENT FIELD CONDITIONS / NOTES: <u>low water level</u> ☒ The antecedent hydrologic conditions have been met to my best knowledge.							
Periphyton: ☐ ☒ ☐ ☐			SAMPLING TEAM <u>Nathan Miley / Stephen Sule</u> SIGNATURE: <u>Nathan Miley</u> DATE: <u>7/31/19</u>							
Fish: ☐ ☐ ☒ ☐										
Aquatic Plants: ☒ ☐ ☐ ☐										
Iron/Sulfur Bacteria: ☒ ☐ ☐ ☐										

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

SAMPLING AGENCY: <i>FDOP NWROC</i>		STORET STATION NUMBER: <i>6YMWQ370</i>	DATE (MM/DD/YYYY): <i>07/31/19</i>	RECEIVING BODY OF WATER: <i>Blackwater Bay</i>
REMARKS: <i>low water level</i>	COUNTY: <i>Cherokee</i>	LOCATION: <i>Yellow River above Mills</i>	FIELD ID/NAME: <i>6YMWQ370</i>	

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 <i>7</i>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <i>3</i>	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 <i>20</i>	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 <i>5</i> ----- Primary Score <i>35</i>	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 <i>20</i>	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 <i>10</i> Left Bank <i>10</i>	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 <i>10</i> Left Bank <i>10</i>	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 <i>10</i> Left Bank <i>10</i> ----- Secondary Score <i>80</i>	10 9	8 7 6	5 4	3 2 1

115 TOTAL SCORE

Date: <i>7/29/19</i>	Analyst: <i>Nathan Mills</i>	Signature: <i>[Signature]</i>
----------------------	------------------------------	-------------------------------

Stream/River Habitat Sketch Sheet, Form FD 9000-4 (June 1, 2001)

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

STORET: 64W0370

Location: Yellow River
above Miller Creek

Project: SMP

Sampled By: N. Mulkey / S. Jank

Date: 7/31/19

100	BF	+	Snag 1.0	Depth	
	%S	+	Root 0.1	Width	
	Vg	-	LP		
90	BF	+	Plant		
	%S	+	OTR		
	Vg	-	Snag 3.0	Depth	
	BF	+	Root 0.2	Width	
	%S	+	LP		
	Vg	-	Plant		
80	BF	+	OTR		
	%S	+	Snag 4.0	Depth	
	Vg	-	Root 0.2	Width	
70	BF	+	LP 0		
	%S	+	Plant		
	Vg	-	OTR		
60	BF	+	Snag 1.0	Depth	
	%S	+	Root	Width	
	Vg	-	LP		
50	BF	+	Plant		
	%S	+	OTR		
	Vg	-	Snag 0.7	Depth	
	BF	+	Root 1.0	Width	
	%S	+	LP		
	Vg	-	Plant		
40	BF	+	OTR		
	%S	-	Snag 7.0	Depth	
	Vg	-	Root	Width	
30	BF	+	LP 3		
	%S	-	Plant		
	Vg	-	OTR		
20	BF	+	Snag 0.7	Depth	
	%S	-	Root 4.5	Width	
	Vg	-	LP		
10	BF	+	Plant		
	%S	+	OTR		
	Vg	-	Snag 6.0	Depth	
	BF	+	Root	Width	
	%S	-	LP		
	Vg	-	Plant		
	BF	+	OTR		
	%S	+	Snag 5.0	Depth	
	Vg	-	Root	Width	
	BF	+	LP		
	%S	+	Plant		
	Vg	-	OTR		

Left Bank

Downstream

Substrates: Code key, draw proportionate habitat abundance.



Snags

8.4



Roots/undercut banks



Leaf Packs (or mats)



Macrophytes



Velocity:

Note where velocity measures were taken: 80 m

Habitat Smothering:

Note areas (on map) where sand or silt is something 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.

Average width 60 m

Average depth 1.4 m

WQ & chemistry taken @ m

0 m Latt.

0 m Long.

100 m Latt 30.67339

100 m Long -86.73728

6000

RPS ID: 9414

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: <u>Yellow River above Motts Creek</u>					County: <u>Oklahoma</u>		Date: <u>7/31/19</u>		Investigators: <u>Nathan Walker / Stephen Shade</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					4				
	5			0		5			0	
	6					6				
	7					7				
	8					8				
	9					9				
10	1	N			70	1	N			
	2					2				
	3					3				
	4					4				
	5			0		5			0	
	6					6				
	7					7				
	8					8				
	9					9				
20	1	N			80	1	N			
	2					2				
	3					3				
	4					4				
	5			0		5			0	
	6					6				
	7					7				
	8					8				
	9					9				
30	1	N			90	1	N			
	2					2				
	3					3				
	4					4				
	5			0		5			0	
	6					6				
	7					7				
	8					8				
	9					9				
40	1	N			100	1	N			
	2					2				
	3					3				
	4					4				
	5			0		5			0	
	6					6				
	7					7				
	8					8				
	9					9				
50	1	N				1	N			
	2					2				
	3					3				
	4					4				
	5			0		5			0	
	6					6				
	7					7				
	8					8				
	9					9				

STORET Station Number: CHW0370
 1.4 fathoms

Secchi depth VOB
 Estimated? N
 # 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 ☒
 RO 2019-03-18-24

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%.

[illegible]

Site Name Shoal River abv Baird Rd

Date: 07/31/19

Field ID G4NW0375 Storet G4NW0375

Project: Smp

Visit ID 80062

RQ: 2019-03-18-24

RPS ID 9415

LIMS ID: NA

VPDB ID N/A

HA ID 16168

☐ LVI

☐ RPS/LVS Only

☒ Sample Site Created in SBIO

☒ Phys/Chem entered in SBIO

☒ HA entered in SBIO Initial ss

☐ Date and Initial QA: _____

☒ RPS entered in SBIO Initial ss

☐ Date and Initial QA: _____

☐ LVI entered in SBIO Initial _____

☐ Date and Initial QA: _____

☐ < 2 m² vegetation

☐ Plants getting verified

Date submitted: _____

☐ Plants verified

Date returned: _____

☐ RPS authorized in SBIO

☐ Date and Initial: _____

☐ RPS score: _____

☐ VPDB authorized in SBIO

☐ Date and Initial: _____

☐ VPDB score: _____

☐ SCI complete: _____

SCI Score: _____



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2019

Data Qualified?

Yes / No

WIN Station Name: Shoal River abv Laird Road

Date: 07/31/19
(mm/dd/yyyy)

WIN/ Field ID: G4NW0375

WBID: 160

Latitude: 30.78495

County: Walton

ORG ID: 21FLPNS

Longitude: -86.38103
(Decimal Degrees)

Receiving Body of Water: Yellow River

RQ-2019-03-24-18 03-18-24
(Decimal Degrees)

Sampling Team Members					WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
S. Slater									
M. Mulkey									

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

Depth Measured with _____
Equipment ID _____

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 / Intestinal / Flowing / NA
Meter ID# 154179 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	1150	0.6	0.3	0.6	973	8.12	5.63	0.01	22.7	24.8
<u>CEN</u>				VOB						

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	9010030	4/10/19	☐ <2
Metals	☒ W-ICPMS ☒ W-ICP	☒ Ice ☐ HNO3	9099030	4/1/19	☐ <2
Filtered Nutrients	☒ W-PO4-F ☐ Field Filtered 0.45 µm Filter	☒ Ice	15159049		
Chlorophyll	☒ CHLSUITE-W	☒ Ice			
Physical/Aggregate (Fresh)	☒ Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS	☒ Ice			
Physical/Aggregate (Marine)	☐ Alkalinity / W-BR-IC / 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-BacR ☐ PCR-GULL2 ☐ PCR-HF183 ☐ PCR-DG3 ☐ PCR-GFD	☐ Ice			
Tracers	☐ W-E8321-DI ☐ W-E8321-MS	☒ Ice			
Pesticides	☒ W-PSNP-TQ	☐ Ice			
Phytoplankton	☐ DTY-QN-C ☐ PKD-QN-C				

Notes:

Field/WIN ID → G4NW0375

Location: Shoal River abv Laird Road

Signature: [Signature] Date: 7/31/19

LIMS EVENT ID: WIN Import ID: Enter Field Parameters, Verify Station ID In LIMS DMT: QC Station ID, Field Parameters In LIMS DMT: Scan/Save Field Sheets 8/2/19 Migrate Data to WIN: Verify Data In WIN:

Ref:
Dep:

Date: 28Feb19
Wgt: 40.00 LBS

DV:

Sumo: PRIORITY OVERNIGHT Master 4751 8777 3730
TRACK: 4751 8777 3730

SHIPPING:	0.00
SPECIAL:	0.00
HANDLING:	0.00
0.00 TOTAL:	0.00

Ref:
Dep:

Date: 28Feb19
Wgt: 40.00 LBS

DV:

Sumo: PRIORITY OVERNIGHT Master 4751 8777 3730
TRACK: 4751 8777 3752

SHIPPING:	0.00
SPECIAL:	0.00
HANDLING:	0.00
0.00 TOTAL:	0.00

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

SAMPLE ID 16 80062 ORG ID 21ELPNS LATITUDE 30.78437
 COUNTY Walton STORET # G4NW0375 LONGITUDE 86.38149
 DATE 7/31/19 TIME 1150 SAMPLING AGENCY FDEP NWROC
 SITE NAME Shoal River abv Laird Rd
 FIELD ID/NAME G4NW0375 RECEIVING BODY OF WATER Yellow River

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) ☐								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 @ 50m ☒ 18 m wide 6.33 m/s 6.33 m/s 0.33 m/s 0.4 m deep 0.4 m deep 0.4 m deep
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>718</u> Right Bank: <u>719</u>				Hydrologic Modification Score (per FT 3101) ☐				
High Water Mark: <u>2.5</u> + <u>0.6</u> = <u>3.1</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			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>0.3</u></td> <td><u>24.9</u></td> <td><u>5.63</u></td> <td><u>8.12</u></td> <td><u>97.3</u></td> <td><u>22.7</u></td> <td><u>0.01</u></td> <td><u>0.6</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>							Depth (M)	Temp. (°C)	pH (SU)	D.O. (MG/L)	D.O. Sat (%)	Cond. (UMHO/CM)	Salinity (PPT)	SECCHI (M)	Top:	<u>0.3</u>	<u>24.9</u>	<u>5.63</u>	<u>8.12</u>	<u>97.3</u>	<u>22.7</u>	<u>0.01</u>	<u>0.6</u>	Mid:								☒ VOB	Bottom:								
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Mid:								☒ VOB																																				
Bottom:																																												
Woody Debris (Snags) <u>1.75</u> <u>5</u> Undercut Banks / Roots <u>0.55</u> <u>5</u> Leaf Packs or Mat <u>0.12</u> <u>5</u> Aquatic Vegetation Rock or Shell Rubble..... Sand..... <u>97.58</u> <u>5</u> Mud / Muck / Silt Other Other			Water Odors Normal ☐ Petroleum ☐ Sewage ☐ Chemical ☒ Other ☐ Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: _____ Exp: _____			Water Surface Oils Normal ☒ Sheen ☐ Globbs ☐ Slick ☐ Other ☐ Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) ☐																																						
ABUNDANCE <table border="1"> <thead> <tr> <th></th> <th>Not Obs.</th> <th>Rare</th> <th>Common</th> <th>Abundant</th> </tr> </thead> <tbody> <tr> <td>Periphyton:</td> <td>☐</td> <td>☒</td> <td>☐</td> <td>☐</td> </tr> <tr> <td>Fish:</td> <td>☐</td> <td>☐</td> <td>☒</td> <td>☐</td> </tr> <tr> <td>Aquatic Plants:</td> <td>☐</td> <td>☐</td> <td>☒</td> <td>☐</td> </tr> <tr> <td>Iron/Sulfur Bacteria:</td> <td>☒</td> <td>☐</td> <td>☐</td> <td>☐</td> </tr> </tbody> </table>				Not Obs.	Rare	Common	Abundant	Periphyton:	☐	☒	☐	☐	Fish:	☐	☐	☒	☐	Aquatic Plants:	☐	☐	☒	☐	Iron/Sulfur Bacteria:	☒	☐	☐	☐	Algae Sample Taken? ☐ Yes ☒ No Sample Preserved? ☐ Yes ☐ No Lot Number: _____ Exp: _____			Clarity Clear ☒ Slightly Turbid ☐ Turbid ☐ Opaque ☐													
	Not Obs.	Rare	Common	Abundant																																								
Periphyton:	☐	☒	☐	☐																																								
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System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other(Specify) ☐			AMBIENT FIELD CONDITIONS / NOTES: <u>low water level</u> ☒ The antecedent hydrologic conditions have been met to my best knowledge.																																									
SAMPLING TEAM <u>Stephen Slade / Nathan Mulkey</u>			SIGNATURE: <u>Stephen Slade</u>			DATE: <u>7/31/19</u>																																						

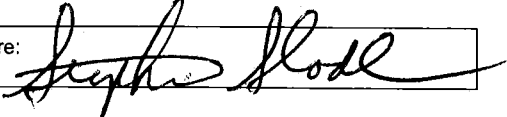
DEP Form FD 9000-5 Stream/River Habitat Assessment Field Sheet

SAMPLING AGENCY: FDEP NWROC		STORET STATION NUMBER: G4NW0375	DATE (MM/DD/YY): 07/31/19	RECEIVING BODY OF WATER: Yellow River
REMARKS:	COUNTY: Walton	LOCATION: Shoal R. abv Laird Rd.	FIELD ID/NAME: G4NW0375	

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 13	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability 2	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 20	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 15 Primary Score 50	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 8	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 4 Left Bank 4	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 10 Left Bank 10	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 10 Left Bank 10 Secondary Score 56	10 9	8 7 6	5 4	3 2 1

106

TOTAL SCORE

Date: 7/31/19	Analyst: S. Hade	Signature: 
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Length of grid represents 100 m of stream (not linear meters).
(Horizontal scale is double vertical scale, draw proportionately).

Location: Shoal River
abv Laird Rd

Sampled By: S. Staele

S

☒	Snags	31.6 m ²	1.75%
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	Roots/undercut banks	1568
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L Leaf Packs (or mats)

☒ Macrophytes

The diagram shows a rectangular box. A horizontal line runs across the middle of the box. The area above the line is labeled with the letter 'I'. The area below the line is labeled with the letter 'II'. The line itself is labeled with the letter 'f'.

[illegible]

Velocity:
Note where velocity
measures were taken: 50 m

Habitat Smothering:
Note areas (on map) where sand or silt is something 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.

Average width 18 m

Average depth 0.40 m

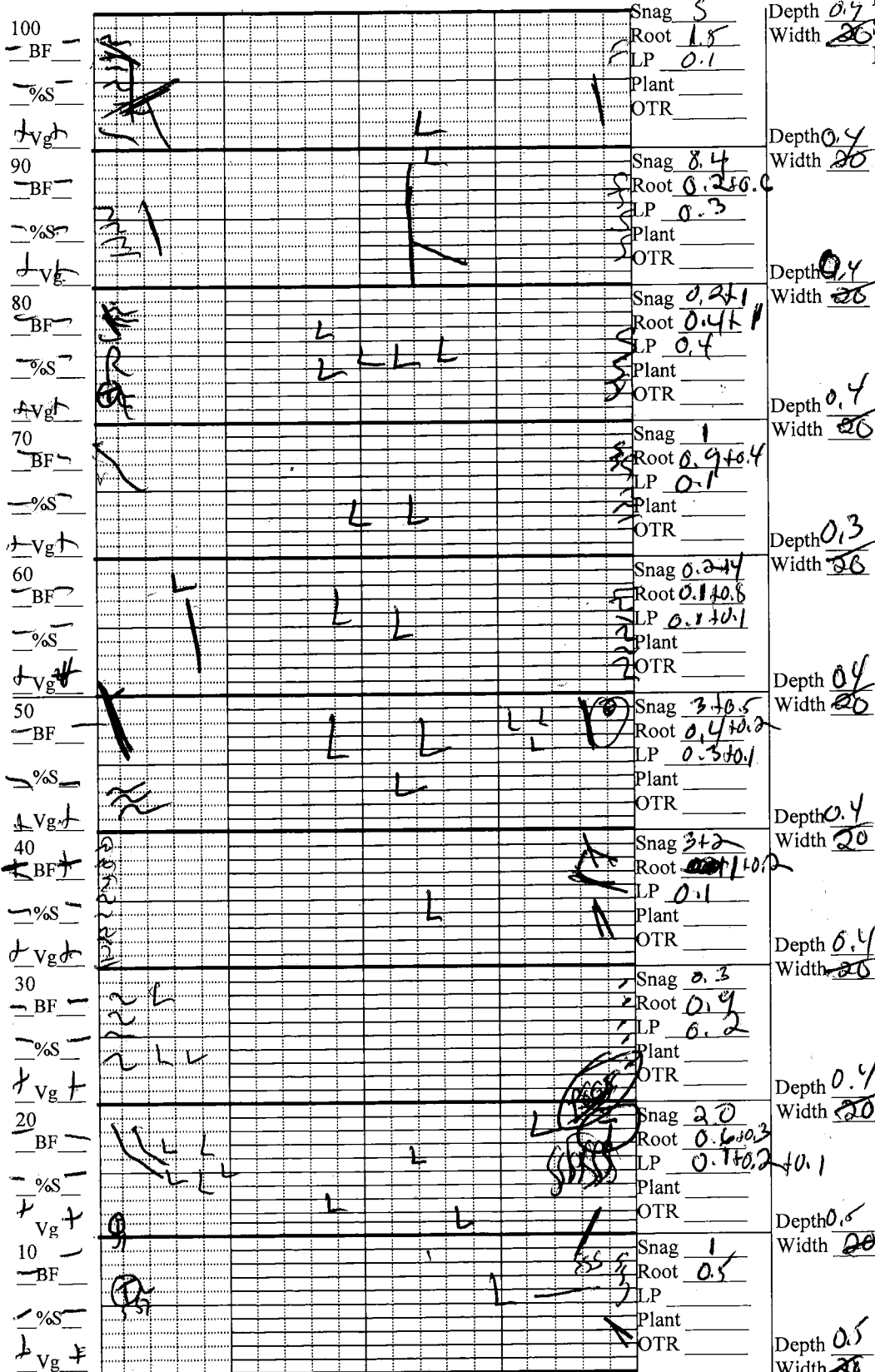
WQ & chemistry taken @ 0 m

0 m Latt. 30.78437

0 m Long: 86.38149

100 m Lätt 30.78509

100 m Long 86.38085

Left
Bank

Downstream

RPS ID: 9415

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: <u>Shoal River</u>					County: <u>Walton</u>		Date: <u>7/31/19</u>		Investigators: <u>S. Slade / N. Mulkey</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	N		60	1	N	N		
	2					2				
	3					3				
	4					4				
	5			15		5				27
	6					6				
	7					7				
	8					8				
	9	X				9				
10	1	N			70	1	N			
	2					2				
	3					3				
	4					4				
	5			21		5				26
	6					6				
	7					7				
	8					8				
	9					9				
20	1	N			80	1	N			
	2					2				
	3					3				
	4					4				
	5			80		5				9
	6					6				
	7					7				
	8					8				
	9					9				
30	1	N			90	1	N			
	2					2				
	3					3				
	4					4				
	5			16		5				442
	6					6				
	7					7				
	8					8				
	9					9				
40	1	N			100	1	N			
	2					2				
	3					3				
	4					4				
	5			9		5				65
	6					6				
	7					7				
	8					8				
	9					9				
50	1	N			50	1	N			
	2					2				
	3					3				
	4					4				
	5			85		5				
	6					6				
	7					7				
	8					8				
	9					9				

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%.

STORET Station Number:

G4NW0375

Secchi depth	<u>0.4</u>
Estimated?	

# points ranked 4-6	<u>8</u>
total points assessed	<u>99</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>2019-03-18-24</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

100 m

30.78510

86.38084

30

[illegible]