

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

SAMPLE ID 79873 ORG ID 21FLWQSP LATITUDE 30.252631
 COUNTY Lafayette STORET # 21020030 LONGITUDE -83.26654
 DATE 4/30/2019 TIME 955 AM SAMPLING AGENCY FDEP/AEQA
 SITE NAME Bethel @ mill
 FIELD ID/NAME Bethel @ mill RECEIVING BODY OF WATER Suwannee R.

RIPARIAN ZONE / STREAM FEATURES

RD-2019-04-29-64

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) <u>1.4</u>
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>8</u> m wide <u>0.33</u> m/s <u>0.3</u> m deep				
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>>15</u> Right Bank: <u>>18</u>				Hydrologic Modification Score (per FT 3101) <u>1-2</u>				
High Water Mark: <u>0.7</u> + <u>0.3</u> = <u>1.0</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					
Woody Debris (Snags) <u>1%</u> <u>5</u> Undercut Banks / Roots <u>1%</u> <u>5</u> Leaf Packs or Mat <u>0.5%</u> <u>2</u> Aquatic Vegetation Rock or Shell Rubble.. <u>19%</u> <u>5</u> Sand..... <u>78.5</u> <u>3</u> Mud / Muck / Silt Other Other			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>20.4</u> <u>8.9</u> <u>7.57</u> <u>84.0</u> <u>153.1</u> Mid: <u>0.3</u> <u>20.4</u> <u>8.9</u> <u>7.57</u> <u>84.0</u> <u>153.1</u> Bottom: <u>0.3</u> <u>20.4</u> <u>8.9</u> <u>7.57</u> <u>84.0</u> <u>153.1</u> Meter ID: <u>154185</u> TOTAL DEPTH <u>0.3</u>					
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☐ ☒ ☐ ☐ Fish: ☒ ☐ ☐ ☐ Aquatic Plants: ☒ ☐ ☐ ☐ Iron/Sulfur Bacteria: ☒ ☐ ☐ ☐			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: <u>101232</u> Exp: <u>10/13/19</u>			Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) ☐		
			Algae Sample Taken? ☐ Yes ☐ No Sample Preserved? ☐ Yes ☐ No Lot Number: <u>101246</u> Exp: <u>8-20-20</u>			Clarity Clear ☒ Slightly Turbid ☐ Turbid ☐ Opaque ☐		
			System Type: Stream ☒ Lake ☐ Wetland ☐ Estuary ☐ Other (Specify) ☐					
			AMBIENT FIELD CONDITIONS / NOTES: <u>I qualify pH - probe would not stabilize in field.</u> ☒ The antecedent hydrologic conditions have been met to my best knowledge.					
SAMPLING TEAM <u>A. O'Neal, J. Jackson, S. Noble</u>			SIGNATURE: <u>Sarah Noble</u>			DATE: <u>4/30/2019</u>		

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

SAMPLING AGENCY: <u>FDEP/AEPA</u>		STORET STATION NUMBER: <u>21020030</u>	DATE (MM/DD/YY): <u>4/30/19</u>	RECEIVING BODY OF WATER: <u>Suwannee R.</u>
REMARKS:	COUNTY: <u>Lafayette</u>	LOCATION: <u>Bethel @ Mill</u>	FIELD ID/NAME:	

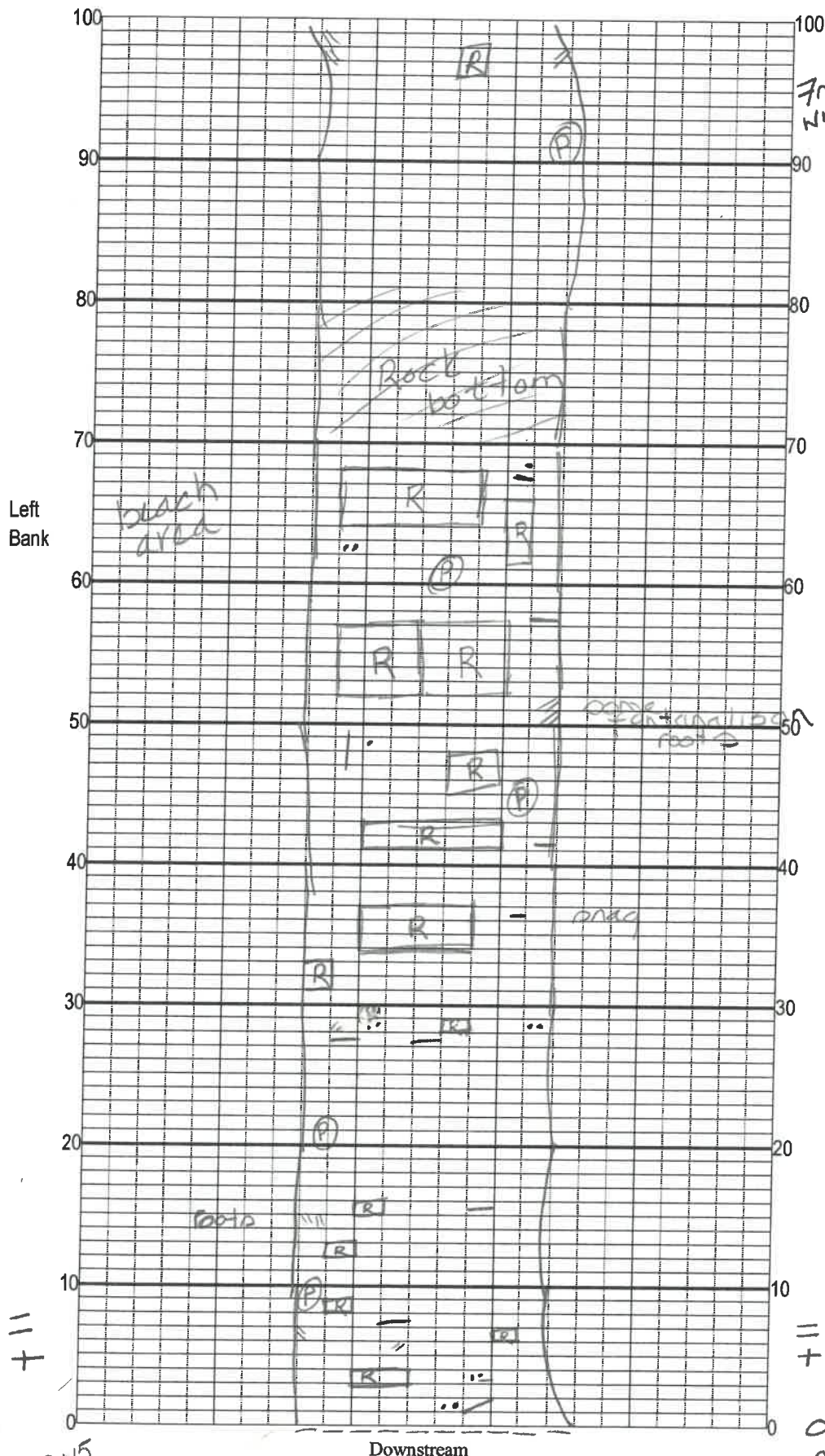
Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components	Four or more major productive habitats present (snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock)	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh 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>18</u>	20 19 <u>18</u> 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>13</u>	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent <u>21.5%</u> 15 14 <u>13</u> 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>18</u>	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 <u>18</u> 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
Primary Score <u>69</u>				
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	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>6</u> Left Bank <u>6</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>7</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>8</u>	10 9	8 7 6	5 4	3 2 1
Secondary Score <u>66</u>				

135

TOTAL SCORE

Date: <u>4/30/2019</u>	Analyst: <u>B. Noble</u>	Signature: <u>Brian Noble</u>
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DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet



Location: Bethel @ Mill

Date: 4/30/19

Sampler: S. Noble

100 m: Latitude _____
Longitude _____

0 m: Latitude _____
Longitude _____

Substrates: Code key, draw proportionate habitat abundance. %

1 Snags 15 1%

1 Roots/undercut banks 10 1%

1 Leaf Packs (or mats) 5 0.5%

1 Aquatic Macrophytes _____

R Rock 185 19%

1 _____

P Pools total # observed = _____
range expected = _____

Average width 10 m

Average depth 0.3 m

Velocity measured at _____ meter mark.

WQ & chemistry taken at _____ meter mark.

Habitat Smothering:
Note areas (on map) where sand or silt is smothering substrates, limiting habitability.

Bank Stability:
Note areas (on map) with unstable, eroding banks.

Riparian Buffer Width:
Note areas (on map) where natural vegetation is altered or eliminated.

Plants observed / other notes:

some algae
smothering on rocks
steep banks
worse on R than L

0.3m depth
~10.5m width
velocity 1/3 m/s

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

Revision Date: March 1, 2014

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Bethel @ mill County: Lafayette Date: 4/30/19 Investigators: S. Noble

STORET Station Number:
21020030

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	N				2	N		
	3	N				3	N		
	4	N				4	N		
	5	N		96		5	N	✓	92
	6	N	✓			6	N	✓	
	7	N	✓			7	N		
	8	N	✓			8	N		
	9	N	✓			9	N		
10	1	N			70	1	N		
	2	N				2	N		
	3	N				3	N		
	4	N		90		4	N		
	5	N				5	N		94
	6	N				6	N		
	7	N	✓			7	N		
	8	N	✓			8	N		
	9	N				9	N		
20	1	N			80	1	N		
	2	N				2	N		
	3	N				3	N		
	4	N				4	N		
	5	N		96		5	N	✓	96
	6	N				6	N	✓	
	7	N				7	N	✓	
	8	N				8	N		
	9	N				9	N		
30	1	N			90	1	N	✓	
	2	N				2	N	✓	
	3	N				3	N	✓	
	4	N				4	N	✓	
	5	N		95		5	N	✓	96
	6	N				6	N	✓	96
	7	N				7	N	✓	
	8	N				8	N		
	9	N				9	N		
40	1	N			100	1	N	✓	
	2	N				2	N	✓	
	3	N				3	N	✓	
	4	N				4	N	✓	
	5	N		80		5	N	✓	96
	6	N				6	N	✓	
	7	N				7	N	✓	
	8	N				8	N	✓	
	9	N				9	N	✓	
50	1	N				1	N		
	2	N				2	N		
	3	N	✓			3	N		
	4	N	✓			4	N		
	5	N	✓	96		5	N		
	6	N	✓			6	N		
	7	N	✓			7	N		
	8	N				8	N		
	9	N				9	N		

Secchi depth
Estimated?

points ranked 4-6 5N
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-2019-04-29-64

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

some algae smothering on rocks
steep banks worse on R than L
approx?

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%.

Waterbody: Bethel @ Mill	Date: 4/30/19	County: Lafayette	Storet Number: 21020030
Analyst: G. Noble	Signature: G. Noble		

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.

Revision Date: March 1, 2014

SITE NAME: Bethel @ MillDATE: 4/30/19 TIME 955 EST CST DEPTH: 0.1 ft (m) FIELD ID: Bethel @ Mill

SAMPLING TEAM MEMBERS	WQ MEASUREMENTS	DOCUMENTATION	SAMPLE COLLECTION	PRESERVATION	PRESERVATION CHECK
A. O'Neal	X		X	X	X
J. Jackson					
S. Noble		X			

SAMPLING EQUIPMENT	
☒ Sample Container	☐ Tubing type: _____
☒ Pole	☐ Other: _____
☐ Pump ID#: _____	☐ Other: _____
WATER QUALITY MEASUREMENTS	
Instrument ID: <u>154185</u>	
COLLECTION MODE	
☒ Wading	☐ Via Boat
☐ Diving	☐ Canoe
☐ From Shore	☐ Electric Motor
☐ Other	☐ Gasoline Motor

Parameter Suite	Parameter(s)/Method	Matrix Code*	Preservation**	Preservative Lot #	pH Check	# Bottles ***
Preserved Nutrients	☐ TKN ☐ TP ☐ NOx ☐ NH3 ☐ TOC ☐ Total N ☐ Other: _____	W	☐ Ice ☐ H2SO4		☐ <2	
Filtered Nutrients	☐ oP ☐ Other: _____	W	☐ Ice ☐ .45 um Filter			
Unpreserved Nutrients	☐ NO2 ☐ NO3 ☐ SO4 ☐ Other: _____	W	☐ Ice			
Physical/Aggregate Properties	☐ TDS ☐ TSS ☐ TS ☐ Turbidity ☐ Alk ☐ Color ☐ Other: _____	W	☐ Ice			
Chlorophyll	☐ CHL-PPTN-W	W	☐ Ice			
BOD	☐ BOD-INHB ☐ BOD-UNIN	W	☐ Ice			
Microbiology	MF: ☐ E coli ☐ T Coli ☐ F Coli ☐ Entero ☐ F Strep	W	☐ Ice			
Macroinvertebrates	☐ MI-FW-QLDC ☐ MI-FW-QLBR ☐ MI-FW-QNNC ☐ MI-MN-QNNC	W	☐ Formalin			
Phytoplankton	☐ PKD-QN-C ☐ DTY-QN-C	W	☐ Lugol's			
Periphyton	☐ PRN-QL-C ☐ DTM-QL-C ☐ PRN-QN-C ☐ DTM-QN-C	W	☐ Formalin			
AGP	☐ AA-AGP ☐ AA-LIM-NUT	W	☐ Ice			
Metals	☐ W-ICP ☐ W-FIAS ☐ W-ICPMS ☐ W-ICP-Tr	W	☐ HNO3		☐ <2	
Filtered Metals	☐ W-ICP-F ☐ W-FIAS-F ☐ W-ICPMS-F ☐ W-ICP-Tr-F	W	☐ HNO3 ☐ .45 um Filter		☐ <2	
Mercury	☐ W-HG-AF	W				
Base/Neutral / Acid Extractable	☐ W-BNA ☐ W-AE ☐ W-BN ☐ W-PAH ☐ W-FL-PRO ☐ W ☐ Other: _____	W	☐ Ice ☐ H2SO4		☐ <2	
Pesticides	☐ W-PEST-CL ☐ W-PCB ☐ W-PEST-NP ☐ W-PSCL-PCB ☐ W-NP-AA-SF ☐ W-PC-AA-SF ☐ W-PSHRB-NP ☐ W-SLFN-UREA ☐ W-SULFN-LC ☐ Other: _____ ☐ W-ACIDHERB ☐ W-CARB	W	☐ Ice ☐ H2SO4 ☐ Ice ☐ MCAA			
Purgeables	☐ W-VOC-MS ☐ W-VOC-MS-A	W	☐ Ice ☐ HCl			
Bioassay	Specify Test: _____	W	☐ Ice			
OTHER		W	☐ Other: _____			

Notes: _____

Use one line for each set of sample (as supplied by the laboratory) containers. Use separate sheet for field or laboratory duplicate or blank or different water depth

^Enter "S" for surface if collected at a depth less than or equal to 1 foot

*Matrix Codes (Insert prefix): SW = Surface Water GW = Groundwater DW = Drinking Water WW = Wastewater O = Other: _____

**PRESERVATIVES: 1 ml added unless otherwise noted

***Enter number of containers supplied by the laboratory for the test (e.g., 3 for volatile organics, etc.)

DEP Bureau of Laboratories Water Sample Collection Record

(Use with FDEP SOP-001/01 Form FD 9000-3 Physical/Chemical Characterization Field Sheet)