



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PROGRAM FIELD SHEET

January 2019

Data Qualified?

Yes / No

WIN Station Name: Wakulla River at CR 365 Bridge

Date: 01/23/2019

WIN/ Field ID: 34879

WBID: 1006

Latitude: 30.21373

(mm/dd/yyyy)

County: Wakulla

ORG ID: 21FLWQA

Longitude: -84.26163

(Decimal Degrees)

Receiving Body of Water: St. Marks River

RQ- 2019-01-14-07

(Decimal Degrees)

Sampling Team Members

Jan Woods
Jade Butchett

WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
X	X	X	X	X

Sampling Equipment

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

Depth Measured with YSL
Equipment ID 155075

Collection Method

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

Water Level: Dry/ Pooled/ Low / (Normal) / High / Flooded

Meter ID# 155075

Matrix: Fresh / Marine / DI

Photos: Yes ☒ NO

Flow: No Flow / Intertidal / (Flowing) / NA

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 (umhos/cm)	Temp. (C°)
EST	1050	2.6	0.3	2.6	5.29	57.7	7.79	0.15	306	19.7
CEN	1053		2.1	S	5.11	55.9	7.76	0.15	306	19.6

Biological Samples Collected: 2/1/19 None

SBIO ID Numbers: SBIO-ID:

HA-ID: 15625

RPS-ID: 9210

Macrophyte-ID: 11260

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	4274050	10/1/19	☒ <2
Metals	☒ W-ICPMS ☒ W-ICP	☒ Ice ☒ HNO3	4197080	7/16/19	☒ <2
Filtered Nutrients	☒ W-PO4-F ☒ Field Filtered 0.45 um Filter	☒ Ice			
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 ☐ W-CT-CL-R ☐ W-E8321-DI ☐ W-PCL-SQ-R ☐ WE8321-MS ☐ W-CARB-AA	☒ Ice			
Phytoplankton	☐ DTY-QN-C ☐ PKD-QN-C	☐ Ice			

Notes:

SCI Kit
RPS, LVS, Algal ID, HA

Location

Wakulla River at CR 365

← WIN ID/Field ID
34879

Signature:

Date: 1/23/19

LIMS EVENT ID: WAS-SECT-2019 01.23.02

WIN Import ID:

Enter Field Parameters/Verify Station ID in LIMS DMT: 2/1/19

QC Station ID, Field Parameters in LIMS DMT: JB 2/1/19

Scan/Save Field Sheets

(Initials/Date)

Migrate Data to WIN:

(Initials/Date)

Verify Data in WIN:

(Initials/Date)

DEP Form FD 9000-4 Stream/River Habitat Assessment Sketch Sheet

Left Bank

Upstream

Right Bank

100

100

S L
R M
P

90

90

S L
R M
P

80

80

S L
R M
P

70

70

S L
R M
P

60

60

S L
R M
P

50

50

S L
R M
P

40

40

S L
R M
P

30

30

S L
R M
P

20

20

S L
R M
P

10

10

S L
R M
P

0

0

Location: Wakulla river at CR 365

Date: 1/23/19

Sampler: Woods/Burchett

100 m: Latitude _____
Longitude _____

0 m: Latitude _____
Longitude _____

Substrates: Code key, draw proportionate habitat abundance. %

S Snags 0.19

R Roots/undercut banks _____

L Leaf Packs (or mats) _____

M Aquatic Macrophytes 75

Rc Rock _____

P Pools total # observed = _____
range expected = _____

Average width 70 m

Average depth 2.6 m

Velocity measured at 50 meter mark.

Velocity 0.5 m/s

WQ & chemistry taken at 50 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.

Notes/Plants Observed:
2m² = 13.2 Sweeps

# of Sweeps	Conversion	m ²	%
Snag	÷ 8	m ²	
Root	÷ 8	m ²	
Leaf	÷ 8	m ²	
Macrophyte	÷ 8	m ²	
Rock	÷ 8	m ²	
Total Available Habitat		m ²	
Total Area		m ²	
Total Unavailable Habitat		m ²	

62-160.800, F.A.C

Revision Date: March 1, 2014

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

Expected Number of Pools

$$\left(\frac{100}{12 * \text{W}} \right) * 1 =$$

$$\left(\frac{100}{12 * \text{W}} \right) * 2 =$$

Meter Mark	Depth (m)	Width (m)	Velocity Measurement (Sec)
Avg.			

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

SAMPLING AGENCY: Florida Department of Environmental Protection		STORET STATION NUMBER: <u>34679</u>	DATE (MM/DD/YY): <u>1/23/19</u>	RECEIVING BODY OF WATER: <u>Gulf of Mexico</u>
REMARKS:	COUNTY: <u>Wakulla</u>	LOCATION: <u>Wakulla River at ER365</u>	FIELD ID/NAME:	

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components Snag Leaf Aquatic Vegetation Roots Rock Substrate Diversity <u>6</u>	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
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>20</u> <u>75</u> %	Major productive habitat present at site (>30% 27.2% 25.8% 24.4% 26.6%)	Major productive habitat, by aerial extent (21.6% 20.2% 18.8% 17.4% 16%)	6% to 15% major productive habitat (15% 13% 11% 9% 6%)	Less than 5% major productive habitat
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Water Velocity <u>20</u> <u>0.5</u> m/s	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05	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
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Habitat Smothering <u>16</u> ----- Primary Score <u>64</u>	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae.	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae.	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth).	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation.
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Secondary Habitat Components Artificial Channelization <u>20</u>	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. May have spoil banks.	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. May have spoil banks.	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks.
	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability Right Bank <u>10</u> Left Bank <u>10</u> If Banks are PipeClay, BedRock or Concrete at Bank full: Optimal	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. (+,-,+)	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. (-,-,-)
		8 7 6	5 4	3 2 1
Riparian Buffer Zone Width Right Bank <u>10</u> Left Bank <u>5</u>	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m 8 7 6 (18m 15m 12m)	Width of vegetation 6 to 12 m. human activities close to system 5 4 (9m)	Less than 6 m of buffer zone due to intensive human activities 3 2 1 (6-5m) (4-3m) (<2m)
Riparian Zone Vegetation Quality Right Bank <u>10</u> Left Bank <u>6</u> ----- Secondary Score <u>71</u>	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance. 10 9	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed. 8 7 6	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious. 5 4	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). 3 2 1

135

TOTAL SCORE

Date: <u>1/23/19</u>	Analyst: <u>Woods</u>	Signature: 
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DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID _____ ORG ID 4034 LATITUDE _____
 COUNTY Wakulla STORET # 34879 LONGITUDE _____
 DATE 1/23/19 TIME 1040 SAMPLING AGENCY 8034
 SITE NAME Wakulla River at CR 365 Bridge
 FIELD ID/NAME _____ RECEIVING BODY OF WATER Gulf of Mexico

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural <u>70</u> Silviculture <u>20</u> Field/Pasture <u>20</u> Agricultural <u>10</u> Residential <u>10</u> Commercial <u>10</u> Industry <u>10</u> Other (Specify) <u>10</u>							Landscape Development Intensity Index (LDI) _____	
Local Watershed Erosion (select one): ☒ None ☐ Slight ☐ Moderate ☐ Heavy Local Watershed NPS Pollution ☒ No evidence ☐ Slight ☐ Moderate ☐ Heavy							Typical Width (m) Depth (m)/Velocity (m/sec) Transect <u>70</u> m wide <u>0.3</u> m/s <u>0.5</u> m/s <u>0.3</u> m/s	
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>6-12</u> Right Bank: <u>716</u>				Hydrologic Modification Score (per FT 3101) _____		<u>0.3</u> m/s <u>0.5</u> m/s <u>0.3</u> m/s		
High Water Mark: <u>0.5</u> + <u>2.6</u> = <u>3.1</u> (m) (above present water level) (present depth) (above bed)				Artificially Impounded ☐ Yes ☒ No		<u>1.0</u> m deep <u>2.6</u> m deep <u>1.2</u> 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: <u>0.19</u> # Times Sampled: <u>7</u>			WATER QUALITY Depth (M): <u>0.3</u> Temp. (°C): <u>19.7</u> pH (SU): <u>7.79</u> D.O. (MG/L): <u>5.29</u> D.O. Sat (%): <u>57.7</u> Cond. (UMHO/CM): <u>308</u> Salinity (PPT): <u>0.15</u> SECCHI (M): <u>2.6</u> Top: <u>0.3</u> Mid: _____ Bottom: <u>2.1</u>			Meter ID: <u>B5075</u>		
Woody Debris (Snags) <u>0.19</u> <u>7</u> Undercut Banks / Roots _____ Leaf Packs or Mat _____ Aquatic Vegetation <u>75</u> <u>7</u> Rock or Shell Rubble.. _____ Sand..... <u>25</u> <u>6</u> Mud / Muck / Silt _____ Other _____ Other _____			Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐ Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: <u>8274050</u> Exp: <u>10/1/19</u>			Water Surface Oils Normal ☒ Sheen ☐ Globbs ☐ Slick ☐ Other ☐ Color Tannic ☒ Green (Algae) ☐ Clear ☐ Other (Specify) _____		
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☐ ☐ ☒ ☐ Fish: ☐ ☐ ☒ ☐ Aquatic Plants: ☐ ☐ ☐ ☒ Iron/Sulfur Bacteria: ☒ ☐ ☐ ☐			System Type: Stream ☐ Lake ☐ Wetland ☐ Estuary ☐ Other (Specify) <u>River</u>			Clarity Clear ☒ Slightly Turbid ☐ Turbid ☐ Opaque ☐		
AMBIENT FIELD CONDITIONS / NOTES: ☒ The antecedent hydrologic conditions have been met to my best knowledge.								
SAMPLING TEAM <u>Woods/Butchett</u>			SIGNATURE <u>[Signature]</u>			DATE <u>1/23/19</u>		

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: Wakulla River at CR 365 County: Wakulla Date: 1/23/19 Investigators: Woods/Buckett

Transect (m) Point 1=right 9=left Algal Thickness Rank (N-6, X) Estimated Canopy Cover STORET Station Number: 34879

0	1	X			60	1	X			
	2					2				
	3					3				
	4	3	✓			4	3	✓		
	5		✓	0		5	5	✓	0	
	6		✓			6	6	✓		
	7					7	X			
	8	5				8				
	9					9				
10	1	3			70	1	3			
	2					2	X			
	3		✓			3				
	4		✓			4				
	5	6	✓	0		5			0	
	6		✓			6				
	7	X	✓			7				
	8					8				
	9					9	X			
20	1	X			80	1	X			
	2	X				2				
	3	3	✓			3				
	4		✓			4	3	✓		
	5		✓	0		5	3		0	
	6	4	✓			6	X			
	7	4	✓			7				
	8	3	✓			8				
	9					9				
30	1	3			90	1	3			
	2					2	X			
	3		✓			3				
	4		✓			4				
	5	6	✓	0		5	6	✓	0	
	6		✓			6	X			
	7		✓			7				
	8					8				
	9					9				
40	1	3			100	1	X			
	2					2	4	✓		
	3		✓			3	4	✓		
	4		✓			4				
	5	X	✓	0		5	3	✓	0	
	6		✓			6	X			
	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%.

(N to 1 mm)
(3) 6mm

(4) 20mm
points ranked 4-6 15
total points assessed 50
% points ranked 4-6 30

(Exclude X's)
Check accompanying data collected at same site/date.
Algal mat sample ☒
Linear Veg Survey ☒
Habitat Assessment ☒
SCI/Biorecon ☒
Water sample ☒
RQ- 2019-01-14-07

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

(> 3 considered smothered)
(5) 10cm
(6)

DEP FORM FD 9000-32: LINEAR VEGETATION SURVEY FIELD SHEET

Waterbody: <u>Wakulla River</u>		Date: <u>1/23/19</u>	County: <u>Wakulla</u>	Storet Number: <u>34679</u>
Analyst: <u>Woods</u>		Signature: <u>[Signature]</u>		
Comments: BMAP Sampling				
Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if 1 m ² of taxa present). Note in the boxes below if no dominant are selected, and note total macrophyte abundance rank for each section. Only the most common taxa are listed, so use blank spaces for additional taxa names.				

HERBACEOUS SPECIES	Meter Mark										Specimen collected (check)	HERBACEOUS SPECIES	Meter Mark										Specimen collected (check)
	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100			0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	
Alternanthera philoxeroides												Myriophyllum heterophyllum											
Bacopa caroliniana												Najas guadelupensis											
Bacopa monnieri												Nuphar luteum											
Bidens mitis												Orontium aquaticum											
Boehmeria cylindrica												Panicum hemitomon											
Centella asiatica												Panicum repens											
Ceratophyllum demersum												Panicum rigidulum											
Chara												Peltandra virginica											
Cicuta maculata				✓	✓		✓	✓				Pistia stratioides											
Cladium jamaicense												Polygonum glabra			✓								
Colocasia esculenta												Polygonum hydropiperoides											
Commelina diffusa												Polygonum punctatum											
Commelina virginica												Pontedaria cordata	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Crinum americanum				✓		✓						Potamogeton illinoensis											
Diodia virginiana												Rhynchospora inundata											
Eichhornia crassipes												Rosa palustris											
Eleocharis (wispy viviparous)												Ruellia simplex											
Hydrilla verticillata												Rumex verticillatus			✓	✓	✓	✓	✓	✓	✓	✓	
Hydrocotyle												Sacciolepis striata											
Hygrophila polysperma												Sagittaria kurziana	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Hymenocallis												Sagittaria lancifolia	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Lachnanthes caroliniana												Sagittaria latifolia											
Landoltia punctata												Salvinia minima											
Lemna												Samolus parviflora											
Limnophila sessiflora												Saururus cernuus											
Ludwigia leptocarpa												Scirpus (schenoplectus) californicus										✓	
Ludwigia palustris												Sparganium americanum											
Ludwigia peruviana												Typha			✓	✓	✓	✓	✓	✓	✓	✓	
Ludwigia repens												Vallisneria americana			✓	✓	✓	✓	✓	✓	✓	✓	
Luziola fluitans												Zizania aquatica											
Micranthemum glomeratum												<u>Polygonum sp</u>											
Micranthemum umbrosum												<u>Rhynchospora sp</u>							✓	✓	✓	✓	
Mikania scandens																							
Myriophyllum aquaticum																							
If no Dominant or Co-Dominant were selected, indicate with "X"																							
Indicate % cover macrophytes per section												Notes:											
0-5% Macrophyte Coverage																							
>5 and ≤10% Macrophyte Coverage																							
>10 and ≤25% Macrophyte Coverage																							
>25 and ≤50% Macrophyte Coverage																							
> 50% Macrophyte Coverage																							

☐ < 2m2

Florida Department of Environmental Protection

Central Laboratory Submittal Form

Customer: WAS-SECT

Project ID: BMAP

Requester: Curtis Musson

Field Report Prepared By: WoodsCollected By: Woods / BruchettSampling Agency: 6034

Location		Location ↓  Wakulla River at CR 365  34879 ← WIN ID/Field ID		☐ Comp ☒ Grab	Collection (comp begin or grab) Date <u>1/23/19</u> Time <u>1050</u>	☒ Eastern ☐ Central	Composite end Date _____ Time _____	Bottle Group(s) (See pg 2) A
Field ID			Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen <u>5.29</u> ☒ mg/L ☐ % sat	Total Res. Chlorine (mg/L)			
WIN/STORET #			Temp (C) <u>19.7</u>	pH <u>7.79</u>	Sample Depth <u>0.3</u> ☐ ft ☒ m	Sp. Conductance (umho/cm) <u>308</u>		
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt) <u>0.15</u>	Comments					
Location		Location ↓  Wakulla River at CR 365  34879 ← WIN ID/Field ID		☐ Comp ☐ Grab	Collection (comp begin or grab) Date _____ Time _____	☐ Eastern ☐ Central	Composite end Date _____ Time _____	Bottle Group(s) B
Field ID			Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)			
WIN/STORET #			Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)		
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments					
Location				☐ Comp ☐ Grab	Collection (comp begin or grab) Date _____ Time _____	☐ Eastern ☐ Central	Composite end Date _____ Time _____	Bottle Group(s)
Field ID			Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)			
WIN/STORET #			Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)		
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments					
Location				☐ Comp ☐ Grab	Collection (comp begin or grab) Date _____ Time _____	☐ Eastern ☐ Central	Composite end Date _____ Time _____	Bottle Group(s)
Field ID			Matrix (type, e.g., Salt, Fresh, etc)	Diss. Oxygen ☐ mg/L ☐ % sat	Total Res. Chlorine (mg/L)			
WIN/STORET #			Temp (C)	pH	Sample Depth ☐ ft ☐ m	Sp. Conductance (umho/cm)		
Latitude ☐ dd ☐ dms	Longitude ☐ dd ☐ dms	Salinity (ppt)	Comments					

Relinquished By: <u>Woods</u>	Date/Time <u>1/23/19 1546</u>	Shipping Method <u>HD</u>	Number of Coolers Shipped: <u>1</u>	Received By: <u>ABJ</u>	Date/Time <u>1-23-19 15:46</u>
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Group: A	Bottle Type:	P-1L	# of Bottles: 2	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1
	ALKALINITY						
	TURBIDITY						
	W-CL-IC						
	W-COLOR						
	W-F						
	W-SO4-IC						
	W-TDS						
	W-TSS						
Group: A	Bottle Type:	BP-1L	# of Bottles: 2	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1
	CHLSUITE-W						
Group: A	Bottle Type:	BG-500ML	# of Bottles: 2	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1
	W-E8321-DI						
	W-E8321-MS						
Group: A	Bottle Type:	P-500ML	# of Bottles: 2	Preservative:	HNO3	Enter Number of Bottles Sent to Lab	1
	W-ICP				8197060		
	W-ICPMS						
Group: A	Bottle Type:	P-500ML	# of Bottles: 2	Preservative:	ICE And H2SO4	Enter Number of Bottles Sent to Lab	1
	W-NH3				8274050		
	W-NO2NO3						
	W-S-A-TP						
	W-TKN						
	W-TOC						
Group: A	Bottle Type:	P-125ML	# of Bottles: 2	Preservative:	FILTER-ICE	Enter Number of Bottles Sent to Lab	1
	W-PO4-F						
Group: A	Bottle Type:	BG-1L	# of Bottles: 6	Preservative:	ICE	Enter Number of Bottles Sent to Lab	2
	W-PSNP-TQ						
Group: B	Bottle Type:	PT-50ML	# of Bottles: 2	Preservative:	ICE	Enter Number of Bottles Sent to Lab	1
	ALGAL_ID						
Group: B	Bottle Type:	PJ-2L	# of Bottles: 4	Preservative:	Formalin	Enter Number of Bottles Sent to Lab	1
	MI-FW-QLDC						

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: 155075

RQ: 2019-01-14-47

Project: Z15T1901

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 12/18

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.	J. Burtchett	1/23/19	739	19.0	761.9	9.28	9.34	100	-	1.05	P/F	L/F
ICV	↓	↓	749	18.5	762.1	9.37	9.38	100.1	-	-	P/F	L/F
CCV	↓	↓	1413	17.5	762.1	9.57	9.41	98.9	-	-	P/F	L/F
CCV											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. Burtchett	1/23/19	741	K0621C	07/19	1000	1000	P/F	L/F
ICV	↓	↓	751	K065F81	06/20	100	102	P/F	L/F
CCV	↓	↓	1118	K0326B	4/2019	1000	996	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. Burtchett	1/23/19	743	K0403C	10/19	7.03	17.4	7.03	-6.6	P/F	L/F
Calibr.	↓	↓	745	K0621D	07/19	4.00	17.3	4.00	167.9	P/F	L/F
Calibr.	↓	↓	747	K0403F	01/20	10.09	18.0	10.08	-175.3	P/F	L/F
ICV	↓	↓	753	K0403F	06/20	10.08	18.8	10.09	-177.0	P/F	L/F
CCV			1420	K0927A	10/2019	4.0	20.7	4.11	163	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 _____, slope from 4 to 7 _____ (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: 1/19

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. Burtchett	1/23/19	737	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: