



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STRATEGIC MONITORING PROGRAM FIELD SHEET

Data Qualified?

Yes / No

January 2018

WIN Station Name: Owens Spring

Date: 10-24-2018
(mm/dd/yyyy)

WIN/ Field ID: G1TLHR0036

WBID: 3568

Latitude: 30.04596

(Decimal Degrees)

County: Lafayette

ORG ID: 21FLTLHR

Longitude: 83.04121

(Decimal Degrees)

Receiving Body of Water: Suwannee River

RQ-2018- 10-08-15

Sampling Team Members				WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check	Sampling Equipment			
Chris Green				✓	✓	✓	✓	✓	☒ Sample Container	☐ Van Dorn	☐ Pole	
Mike Eckles				✓	✓	✓	✓	✓	☐ Carboy	☒ Syringe		
									☐ Dipper	☐ Other		
									Depth Measured with <u>Sonde</u>			
									Equipment ID <u>#1</u>			
									Collection Method			
									☐ Wading	☐ Canoe/Kayak		
									☒ From Shore	☐ Electric Motor		
									☐ Other	☐ Gasoline Motor		
Water Level: Dry/ Pooled/ Low / <u>Normal</u> / High / Flooded				Meter ID# <u>EXO 3</u>				Matrix: <u>Fresh</u> / Marine / DI				
Photos: <u>Yes</u> / No				Flow: No Flow / Intertidal / <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 (PPTH)	Sp COND (µmhos/cm)	Temp. (C°)		
EST	12:10	3.2	0.3	3.25	1.23 1.06	14.3 12.2	7.36 7.36	0.22 0.22	465 466	22.4 22.5		
CEN	12:13		2.7		1.06	12.2	7.36	0.22	466	22.5		
Biological Samples Collected: None <u>HA</u> <u>SCI</u> <u>RPS</u> <u>Algae ID</u> <u>LVS</u> LVI Other:												
SBIO ID Numbers: SBIO-ID: <u>78956</u> HA-ID: <u>15437</u> RPS-ID: <u>9123</u> 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>5A8197090</u>	<u>7/16/18</u>	☒ <2				
Metals	☐ W-ICPMS ☐ W-ICP				☐ Ice ☐ HNO3			☐ <2				
Filtered Nutrients	☒ W-PO4-F ☐ Field Filtered 0.45 µm 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-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				☐ Ice							
	☐ W-PCL-SQ-R ☐ W-PYR-AA-R ☐ W-GLYPH ☐ W-SUC-AA-R				☐ Other							

Notes:

A-b

Spring run 30 meters long from spring vent, then goes underground

Place Label Here

Signature:

Date:

Enter Field Parameters, Verify Station ID in LIMS DMT:

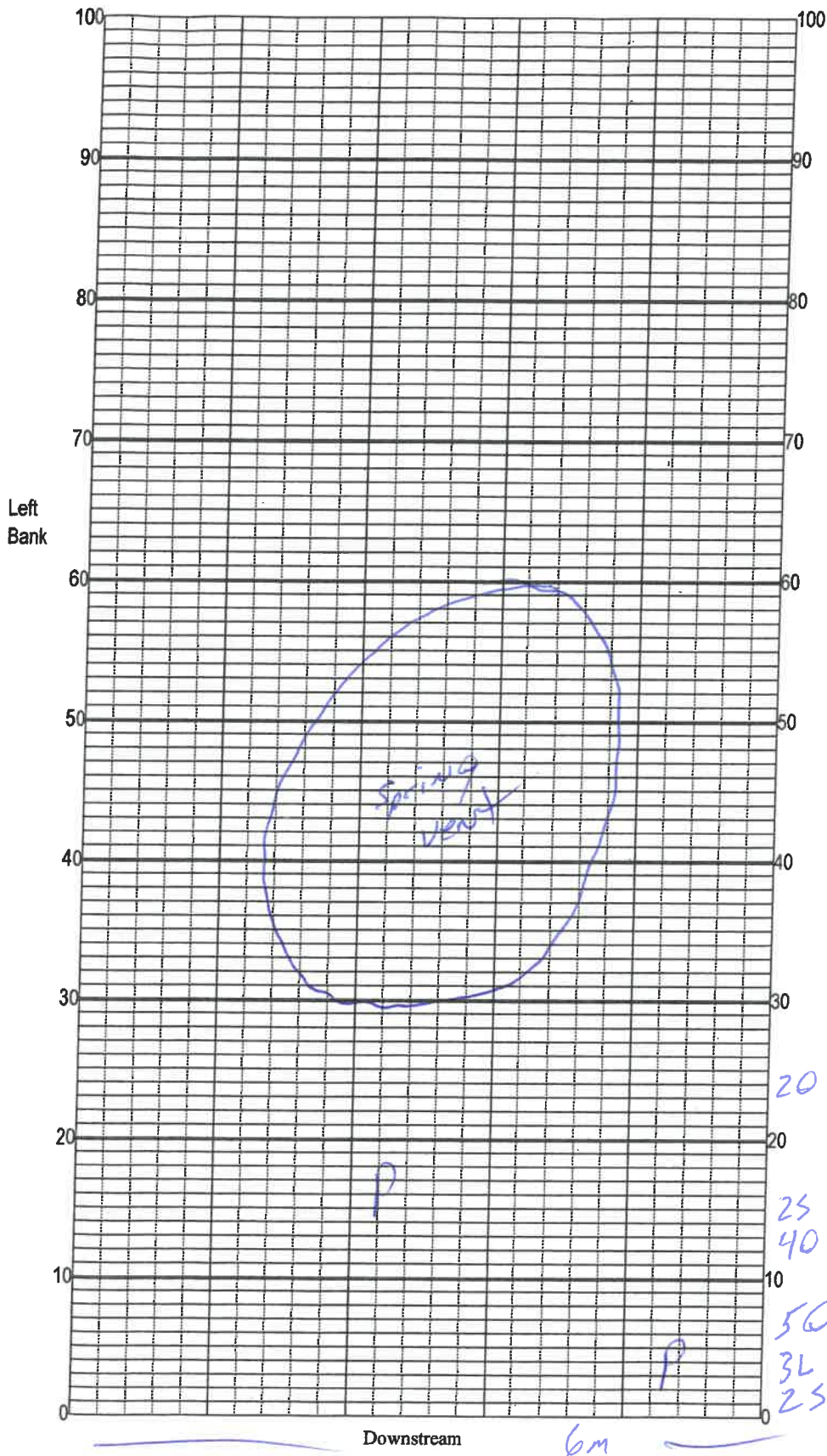
QC Station ID, Field Parameters in LIMS DMT:

Scan/Save Field Sheets

Migrate Data to WIN:

Verify Data in WIN:

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



Location: GITLHR0036
 Date: 10-24-2018
 Sampler: Chris Green

100 m: Latitude _____
 Longitude _____

0 m: Latitude _____
 Longitude _____

Substrates: Code key, draw proportionate habitat abundance. %

[S] Snags 2.2

[R] Roots/undercut banks 0

[L] Leaf Packs (or mats) 1.6

[A] Aquatic Macrophytes 0

[O] Rock 6.1

[] _____

[] Pools total # observed = 2
 # range expected = 1

Average width 6 m

Average depth 0.8 m

Velocity measured at 20 meter mark. 3 sec

WQ & chemistry taken at Spring meter mark.

Habitat Smothering: Yes
 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: > 18
 Note areas (on map) where natural vegetation is altered or eliminated.

Plants observed / other notes: Spring run is 30m long, then goes underground

S-4

L-3

O-11

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

SAMPLING AGENCY: <u>8034</u>		STORET STATION NUMBER: <u>WIN</u> <u>G1TLHR0036</u>	DATE (MM/DD/YY): <u>10-24-2018</u>	RECEIVING BODY OF WATER: <u>SUNNYSIDE RIVER</u>
REMARKS:	COUNTY: <u>Lafayette</u>	LOCATION: <u>Owens Spring</u>	FIELD ID/NAME: <u>G1TLHR0036</u>	

Habitat Parameter	Optimal	Suboptimal	Marginal	Poor
Primary Habitat Components	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock]	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags)	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed	One or less major productive habitat. Lack of habitat is obvious, substrates unstable or smothered
Substrate Diversity <u>13</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Substrate Availability <u>8</u>	Greater than 30% major productive habitat present at site 20 19 18 17 16	16% to 30% major productive habitat, by aerial extent 15 14 13 12 11	6% to 15% major productive habitat 10 9 8 7 6	Less than 5% major productive habitat 5 4 3 2 1
Water Velocity <u>20</u>	Max. observed at typical transect: > 0.25 m/sec. But < 1 m/sec ≥0.33 0.31 0.29 0.27 >0.25 20 19 18 17 16	Max. observed at typical transect: >0.1 to 0.25 m/sec 0.25 0.21 0.17 0.13 >0.1 15 14 13 12 11	Max. observed at typical transect: 0.05 to 0.1 m/sec 0.1 0.09 0.07 0.06 0.05 10 9 8 7 6	Max. observed at typical transect: <0.05 m/sec; or spate occurring: > 1 m/sec <0.05 0.04 0.03 0.01 <0.01 5 4 3 2 1
Habitat Smothering <u>13</u> ----- Primary Score <u>54</u>	Adequate number of stable pools (1-2 per 12 times width) and <25% of habitats affected by sand, silt, or algae. 20 19 18 17 16	Adequate number of stable pools (1-2 per 12 times width) and >25% of habitats affected by sand, silt, or algae. 15 14 13 12 11	Does not have required number of stable pools (1-2 per 12 x width) and/or has shallow pools (<2 x prevailing depth). 10 9 8 7 6	Stable pools are absent. Most habitats affected by sand, silt, or algae accumulation. 5 4 3 2 1
Secondary Habitat Components	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks.	Good sinuosity within old channelized area. Evidence of dredging in the past (>25 yrs) but mostly recovered.	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area.	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks.
Artificial Channelization <u>20</u>	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1
Bank Stability	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankfull to top of bank. Bankfull is within or above the root zone with few raw, eroded areas.	Only meets 2 of the 3 requirements for optimal bank stability.	Only meets 1 of the 3 requirements for optimal bank stability.	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the root zone with raw, eroded areas.
Right Bank <u>10</u> Left Bank <u>10</u>	10 9	8 7 6	5 4	3 2 1
Riparian Buffer Zone Width	Width of vegetation greater than 18 m	Width of vegetation >12 to 18m	Width of vegetation 6 to 12 m. human activities close to system	Less than 6 m of buffer zone due to intensive human activities
Right Bank <u>9</u> Left Bank <u>10</u>	10 9	8 7 6	5 4	3 2 1
Riparian Zone Vegetation Quality	Over 80% of riparian surfaces consist of normal, expected plant community for given sunlight & habitat conditions (e.g., native plants; tree, shrub, and forbs represented, if appropriate). Minimal disturbance.	>50% to 80% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Some disruption in community observed.	25% to 50% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions). Disruption obvious.	Less than 25% of riparian zone is undisturbed (normal, expected plant community for given sunlight & habitat conditions).
Right Bank <u>7</u> Left Bank <u>10</u> ----- Secondary Score <u>76</u>	10 9	8 7 6	5 4	3 2 1

130 **TOTAL SCORE**

Date: <u>10-24-2018</u>	Analyst: <u>Chris Green</u>	Signature: <u>[Signature]</u>
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DEP Form FD 9000-3 Physical/Chemical Characterization Field Sheet

SAMPLE ID G1TLHR0036 ORG ID 21FLTLHR LATITUDE _____
 COUNTY Lafayette STORET # G1TLHR0036 LONGITUDE _____
 DATE 10-24-2018 TIME 12:15 SAMPLING AGENCY 8034
 SITE NAME Owens Spring
 FIELD ID/NAME G1TLHR0036 RECEIVING BODY OF WATER Savannah River

RIPARIAN ZONE / STREAM FEATURES

PREDOMINANT LAND-USE IN WATERSHED (specify relative percent in each category): Forest/Natural <u>70</u> Silviculture <u>30</u> Field/Pasture _____ Agricultural _____ Residential _____ Commercial _____ Industry _____ Other (Specify) _____								Landscape Development Intensity Index (LDI) _____
Local Watershed Erosion (select one): ☒ None ☐ Slight ☐ Moderate ☐ Heavy				Typical Width (m) Depth (m)/Velocity (m/sec) Transect _____ m wide				
Local Watershed NPS Pollution: ☒ No evidence ☐ Slight ☐ Moderate ☐ Heavy				_____ m/s				
Width of Riparian Vegetation (m) on Each Buffer Side Left Bank: <u>>18</u> Right Bank: <u>>18m</u>				Hydrologic Modification Score (per FT 3101) _____				
High Water Mark: <u>1.0</u> + <u>1.8</u> = <u>1.8</u> (m) (above present water level) (present depth) (above bed)				Artificially Impounded ☐ Yes ☒ No				
Artificially ☒ No ☐ Mostly recovered, more sinuous				Canopy Cover % ☐ Open ☒ Lightly Shaded (11-45%)				
Channelized: ☐ Some recovery ☐ Recent, severe				☐ Heavily Shaded ☐ Moderate Shaded (46-80%)				

SEDIMENT / SUBSTRATE

Sediment Oils ☒ Absent ☐ Slight ☐ Moderate ☐ Profuse		Sediment Odors ☒ Normal ☐ Sewage ☐ Petroleum ☐ Chemical ☐ Anaerobic ☐ Other (Specify): _____		Smothering of Substrates Sand Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐ Silt Smothering: None ☐ Slight ☒ Moderate ☐ Severe ☐ Algae Smothering: None ☐ Slight ☐ Moderate ☐ Severe ☒	
SUBSTRATE TYPE Assessment Tool: ☐ SCI ☒ RPS ☒ LVS ☐ LCI ☐ BioRecon		WATER QUALITY Depth (M) <u>0.3</u> Temp. (°C) <u>22.4</u> pH (SU) <u>7.36</u> D.O. (MG/L) <u>1.23</u> D.O. Sat (%) <u>14.3</u> Cond. (UMHO/CM) <u>465</u> Salinity (PPT) <u>0.22</u> SECCHI (M) <u>3.2</u> Top: <u>7.20</u> Mid: _____ Bottom: <u>2.7</u> <u>22.5</u> <u>7.36</u> <u>1.06</u> <u>12.2</u> <u>466</u> <u>0.22</u> TOTAL DEPTH <u>3.2</u> Meter ID: <u>EXO 3</u>			
Woody Debris (Snags) <u>2.2</u> Undercut Banks / Roots <u>0</u> Leaf Packs or Mat <u>1.6</u> Aquatic Vegetation <u>0</u> Rock or Shell Rubble.. <u>6.1</u> Sand..... <u>90.1</u> Mud / Muck / Silt <u>0</u> Other Other		Water Odors Normal ☒ Petroleum ☐ Sewage ☐ Chemical ☐ Other ☐ Water Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: _____ Exp: _____ Algae Sample Taken? ☒ Yes ☐ No Sample Preserved? ☒ Yes ☐ No Lot Number: _____ Exp: _____			
ABUNDANCE Not Obs. Rare Common Abundant Periphyton: ☐ ☐ ☐ ☒ Fish: ☐ ☒ ☐ ☐ Aquatic Plants: ☒ ☒ ☐ ☐ Iron/Sulfur Bacteria: ☒ ☐ ☐ ☐		Water Surface Oils Normal ☒ Sheen ☐ Globbs ☐ Slick ☐ Other ☐ Color Tannic ☐ Green (Algae) ☐ Clear ☒ Other (Specify) _____ Clarity Clear ☒ Slightly Turbid ☐ Turbid ☐ Opaque ☐			
AMBIENT FIELD CONDITIONS / NOTES: <u>Spring run is 30m long, then goes under ground.</u> ☒ The antecedent hydrologic conditions have been met to my best knowledge.		System Type: Stream ☐ Lake ☐ Wetland ☐ Estuary ☐ Other (Specify) ☒ <u>Spring Run</u>			

SAMPLING TEAM Chris Green / Mike Eckles SIGNATURE: Ch. S. DATE: 10-24-2018

DEP FORM FD 9000-25 Rapid Periphyton Survey Field Sheet

Site: GITLHRO036 County: Lafayette Date: 10-24-2018 Investigators: Chris Green

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 STORET Station Number: GITLHRO036

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	6			60	1				
	2	6				2				
	3	2				3				
	4	6				4				
	5	6		4		5				
	6	6				6				
	7	2				7				
	8	6				8				
	9	6				9				
10	1	6			70	1				
	2	2				2				
	3	2				3				
	4	6				4				
	5	6		10		5				
	6	6				6				
	7	6				7				
	8	6				8				
	9	2				9				
20	1	6			80	1				
	2	6				2				
	3	6				3				
	4	6				4				
	5	6		23		5				
	6	6				6				
	7	6				7				
	8	6				8				
	9	6				9				
30	1	6			90	1				
	2	6				2				
	3	6				3				
	4	6				4				
	5	2		20		5				
	6	2				6				
	7	6				7				
	8	6				8				
	9	6				9				
40	1				100	1				
	2					2				
	3					3				
	4					4				
	5					5				
	6					6				
	7					7				
	8					8				
	9					9				
50	1				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%.					
	2									
	3									
	4									
	5									
	6									
	7									
	8									
	9									

Secchi depth 3.2
Estimated? N

points ranked 4-6 29
total points assessed 44
% points ranked 4-6 66.8

Check accompanying data collected at same site/date.
Algal mat sample ☒
Linear Veg Survey ☒
Habitat Assessment ☒
SCI/Biorecon ☒
Water sample ☒
RQ-2018-10-08-15

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

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

Waterbody: Owens Spring	Date: 10-24-18	County: Lata Lafayette	Storet Number: 61TLHRO036
Analyst: Chris Green	Signature: Chi 3		
Comments: < 2m ² of Veg.			

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.

[illegible]

Sampling Agency: 8034

Relinquished By: <i>L. Green</i>	Date/Time <i>10/24/18</i>	Shipping Method <i>Hand</i>	Number of Coolers Shipped: <i>1</i>	Received By: <i>[Signature]</i>	Date/Time <i>10/24/18 16:20</i>
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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: exo 3

RQ:

Project: SMP 2018

- 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 10/18

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.	Chris Green	10-24-18	8:00	20.9	760.2	8.93	8.94	100.0	+85	1.01	P / F	L / F
ICV			8:25	19.8	—	9.12	9.05	99.3	—	—	P / F	L / F
CCV			16:50	21.8	—	8.77	8.69	99.0	—	—	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 mhos/cm	Meter Reading μ mhos/cm	Pass / Fail	Lab / Field
Calibr.	Chris Green	10-24-18	8:10	1800621C	7/19	1000	1000	P / F	L / F
ICV			8:23	1805F81	5/20	100	101	P / F	L / F
CCV			16:55	180221A	3/19	500	507	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.	Chris Green	10-24-18	8:13	180621E	1/20	7.02	20.0	7.17	57.2	P / F	L / F
Calibr.			8:16	180510B	5/19	4.00	19.1	3.94	122.2	P / F	L / F
Calibr.			8:19	180403D	10/19	10.07	18.9	10.03	211.1	P / F	L / F
ICV			8:21	11	11	10.00	18.8	10.02	—	P / F	L / F
CCV			16:58	180403B	5/19	4.00	19.9	3.99	—	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: _____

If NO, what will be used? (circle one) Secchi Disk Line / Sonar Unique ID: #1; Date of last verification: 10/18

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						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: