FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
STRATEGIC MONITORING PROGRAM FIELD SHEET

April 2018

Data Qualified? Yes / No

WIN Station Name: MANUEL BRANCH **Date:** 06/19/2018 (mm/dd/yyyy)

WIN/ Field ID: ~~MANUEL BRANCH~~ G1SD0070 **WBID:** ~~61~~ 3240V **Latitude:** 26.627447 (Decimal Degrees)

County: LEE **ORG ID:** _____ **Longitude:** -81.88004 (Decimal Degrees)

Receiving Body of Water: CALOOSAHATCHEE **RQ-2018-** 06-18-58

Sampling Team Members	WQ Measurements	Sample Collection	Documentation	Preservation	Preservation Check
STEVE CAFOL	X			X	
JOHN BARRACCO		X	X		
GARY SEKERAK					X

Sampling Equipment
- [X] Sample Container [ ] Van Dorn [ ] Pole
- [ ] Carboy [ ] Syringe
- [ ] Dipper [ ] Other _____
- Depth Measured with: Secchi
- Equipment ID: Deeper Bowl

Collection Method
- [X] Wading [ ] Canoe/Kayak
- [ ] From Shore [ ] Electric Motor
- [ ] Other _____ [ ] Gasoline Motor

Water Level: Dry/ Pooled/ Low / (Normal) / High / Flooded **Meter ID#** KEYS **Matrix:** (Fresh) / Marine / DI

Photos: (Yes) / No **Flow:** No Flow / Intestital / (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 (PPTh)	Sp COND (µmhos/cm)	Temp. (C°)
(EST)	1200	0.8	0.3	0.8	4.67	58.8	7.06	—	715	27.03
CEN				VOB "S"						

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	[X] W-NH3 / W-NO2NO3 / W-TKN / W-TOC / W-S-A-TP	[X] Ice [X] H_2SO_4	SA8685710	3/20/19	[X] ≤2
Metals	[ ] W-ICPMS [ ] W-ICP	[ ] Ice [ ] HNO_3			[ ] <2
Filtered Nutrients	[X] W-PO4-F [X] Field Filtered 0.45 µm Filter	[X] Ice			
Chlorophyll	[X] CHLSUITE-W	[X] Ice			
Physical/Aggregate (Fresh)	[X] Alkalinity / W-F / W-TSS / TURBIDITY / W-Cl-IC / W-COLOR / W-SO4-IC / W-TDS	[X] 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-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 [ ] Other			

Place Preservative Sticker(s) Here (If Available)

Notes:

Field ID/WIN ID G1SD0070

Location Manuel Branch @ Park

Signature: _____ Date: 6/19/18

Enter Field Parameters, Verify Station ID In LIMS DMT: _____ (Initials/Date) QC Station ID, Field Parameters In LIMS DMT: _____ (Initials/Date)

Scan/Save Field Sheets _____ (Initials/Date) Migrate Data to WIN: _____ (Initials/Date) Verify Data In WIN: _____ (Initials/Date)

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

SAMPLING AGENCY:		STORET STATION NUMBER:	DATE (MM/DD/YY):	RECEIVING BODY
FDEP SOROC 8052		G1SD0070	06/19/18	CAWOSAN
REMARKS:	COUNTY: LEE	LOCATION: MANUEL BRANCH		FIELD ID/NAME:

G1SD0070 Field ID/WIN ID
Manuel Branch @ Park Location

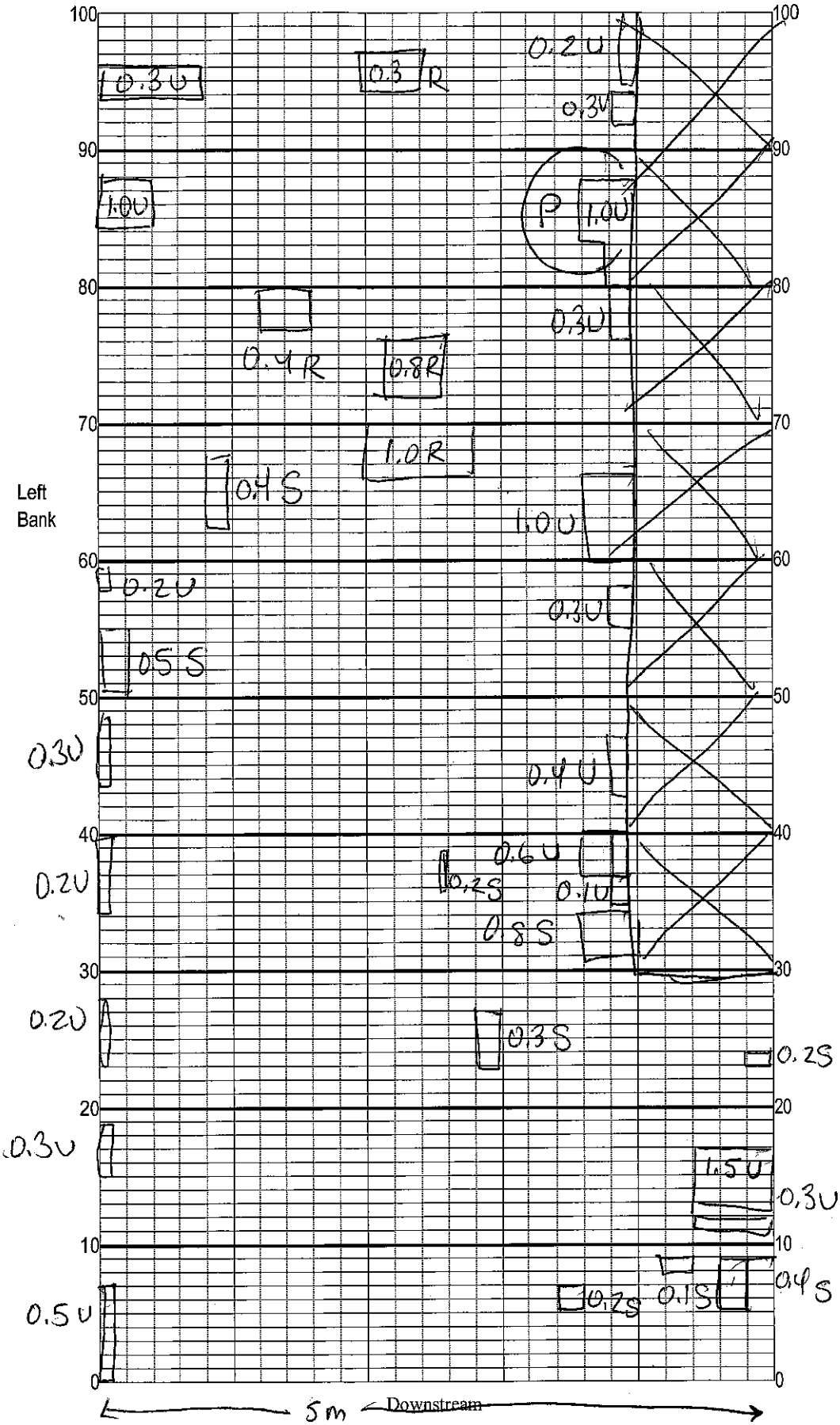
Habitat Parameter	Optimal	Suboptimal	Marginal	P
Primary Habitat Components **Substrate Diversity** 12	Four or more major productive habitats present [snags, tree roots, aquatic vegetation, leaf packs (partially decayed), rock] 20 19 18 17 16	Three major productive habitats present. Adequate habitat. Some substrates may be new fall (fresh leaves or snags) 15 14 13 (12) 11	Two major productive habitats present. Less than desirable habitat, frequently disturbed or removed 10 9 8 7 6	One or less m habitat. Lack obvious, subst or smothered 5 4
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% productive hab 5 4 3 (2) 1
Water Velocity 10	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 7 Primary Score 31	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 **Artificial Channelization** 6	Expected sinuosity given the stream width. No evidence of dredging or artificial straightening. No spoil banks. 20 19 18 17 16	Good sinuosity within old channelized area. Evidence of dredging or straightening in the past (>25 yrs) but mostly recovered. 15 14 13 12 11	Straightened with trapezoidal cross section, but has a small degree of sinuosity developed within channelized area. 10 9 8 7 (6)	Straightened or engineered by dredging, has trapezoidal or box cut cross section, lacks required pools. May have spoil banks. 5 4 3 2 1
Bank Stability Right Bank 5 Left Bank 4	Bankfull > 60% of bank height. Slope of bank ≤ 60° from bankful to top of bank. Bankfull is within or above the woody root zone with few raw, eroded areas. 10 9	Only meets 2 of the 3 requirements for optimal bank stability. 8 7 6	Only meets 1 of the 3 requirements for optimal bank stability. R L (5) (4)	Bankfull < 60% of bank height. Slope of bank > 60°. Bankfull is below the woody root zone with raw, eroded areas. 3 2 1
Riparian Buffer Zone Width Right Bank 2 Left Bank 3	Width of vegetation greater than 18 m 10 9	Width of vegetation >12 to 18m 8 7 6	Width of vegetation 6 to 12 m. human activities close to system 5 4	Less than 6 m of buffer zone due to intensive human activities R R (3) (2) 1
Riparian Zone Vegetation Quality Right Bank 2 Left Bank 2 Secondary Score 18	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). L+R 3 (2) 1

L9 TOTAL SCORE

Date: 6/19/18	Analyst: JOHN BORRINGTON	Signature:

Kalina Warren

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



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

□ = 0.1 m²

□ = 1 m²

500 m²

Location: MANUEL BRANCH

Date: 6/19/18

Sampler: JOHN BARRINGTON

100 m: Latitude	
Longitude	
0 m: Latitude	26.627447
Longitude	-81.88004

Substrates: Code key, draw proportionate habitat abundance. %

S	Snags	0.62
U	Roots/undercut banks	1.6
	Leaf Packs (or mats)	
V	Aquatic Macrophytes	0.06
R	ROCKS	0.5
P	Pools — total # observed = 1; # range expected = 2	

Average width 4.2 m

Average depth 0.4 m

Velocity measured at 100 meter mark.

WQ & chemistry taken at 0 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:

S - 3.1
U - 8.0
V - 0.3
R - 2.5

Field ID/WIN ID

G1SD0070

Location

Manuel Branch @ Park

DEP FORM FD 9000-25 Rapid Periphyton

Site: MANUEL BRANCH

County: LEE

Date: 6/19/18

Investigators: JOHN BORRINGTON, KAUNA WARREN / STORE CORP

STORET Station Number: G1SD0070

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
0	1	N		
	2			
	3			
	4			
	5			69
	6			
	7			
	8			
	9			
10	1			
	2			
	3			
	4			
	5			96
	6			
	7			
	8			
	9			
20	1			
	2			
	3			
	4			
	5			16
	6			
	7			
	8			
	9			
30	1			
	2			
	3			
	4			
	5			15
	6			
	7			
	8			
	9			
40	1			
	2			
	3			
	4			
	5			18
	6			
	7			
	8			
	9			
50	1			
	2			
	3			
	4			
	5			15
	6			
	7			
	8			
	9			

Transect (m)	Point 1=right 9=left	Algal Thickness Rank (N-6, X)	Estimated	Canopy Cover
60	1	N		
	2			
	3			
	4			
	5			86
	6			
	7			
	8			
	9			
70	1			
	2			
	3			
	4			
	5			54
	6			
	7			
	8			
	9			
80	1			
	2			
	3			
	4			
	5			54
	6			
	7			
	8			
	9			
90	1			
	2			
	3			
	4			
	5			89
	6			
	7			
	8			
	9			
100	1			
	2			
	3			
	4			
	5			33
	6			
	7			
	8			
	9			

Secchi depth	0.8
Estimated?	N

# points ranked 4-6	0
total points assessed	0
% 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-2018-18-58

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%.

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

Waterbody: MANUEL BRANCH | Date: 6/12/18 | County: LEE | Storet Number: G1SD0070

Analyst: KALINA W. / STACY L. / JOHN B | Signature:

Comments: LESS THAN 2 KM COVERAGE

Instructions: Note taxa growing in the water with a checkmark if present, "D" if dominant, and "C" if codominant (dominance only if $1m^2$ 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 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Alternanthera philoxeroides	X	X	X	X	X	X	X	X	X	X	
Bacopa caroliniana											
Bacopa monneri											
Bidens mitis											
Boehmeria cylindrica											
Centella asiatica											
Ceratophyllum demersum											
Chara											
Cicuta maculata											
Cladium jamaicense											
Colocasia esculenta											
Commelina diffusa											
Commelina virginica											
Crinum americanum											
Diodia virginiana											
Eichhornia crassipes											
Eleocharis (wispy viviparous)											
Hydrilla verticillata											
Hydrocotle		X	X		X			X	X	X	
Hygrophila polysperma											
Hymenocallis											
Lachnanthes caroliniana											
Landoltia punctata											
Lemna											
Limnophila sessiflora											
Ludwigia leptocarpa	X	X									
Ludwigia palustris											
Ludwigia peruviana											
Ludwigia repens											
Luziola fluitans											
If no Dominant or Co-Dominant were selected, indicate with "X"											
Indicate % cover macrophytes per section											
0-5% Macrophyte Coverage	X	X	X	X	X	X	X	X	X	X	
>5 and ≤10% Macrophyte Coverage											
>10 and ≤25% Macrophyte Coverage											
>25 and ≤50% Macrophyte Coverage											
> 50% Macrophyte Coverage											

HERBACEOUS SPECIES	Meter Mark 0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80	80-90	90-100	Specimen collected (check)
Micranthemum glomeratum											
Micranthemum umbrosum											
Myriophyllum aquaticum											
Najas guadelupensis											
Nuphar luteum											
Orontium aquaticum											
Panicum hemitomon											
Panicum repens											
Panicum rigidulum											
Pistia stratioides											
Polygonum glabra											
Polygonum hydropiperoides											
Polygonum punctatum											
Pontedaria cordata											
Potamogeton illinoensis											
Ruellia simplex											
Sacciolepis striata											
Sagittaria kurziana											
Sagittaria lancifolia											
Sagittaria latifolia											
Salvinia minima											
Samolus parviflora											
Saururus cernuus											
Sparganium americanum											
Typha											
Vallisneria americana											
Zizania aquatica											
WIDELA		X	X								

Field ID/WIN ID

G1SD0070

Location

Manuel Branch @ Park

62-160.800, F.A.C.

Revision Date:January 2017

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

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

Meter ID: KEYS RQ- 2018-6-18-58 Project: SMP MANUAL

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.

Circle/Fill In: (Lab Calibration) or Calibration/Verification on Site _____

Temperature (Quarterly) FT 1400 Date of Last Temperature Verification 3/22/18

DO DEP SOP FT 1500	Name	Date	Time CT-ET	Temp	D.O. Chart mg/L	Meter D.O. mg/L	% DO	Probe Charge	Probe Gain	Pass / Fail	Lab / Field
Calibr.	JOHN BARRINGTON	6/19/18	1035	23.65	8.48	8.47	100.0	—	—	(P) / F	(L) / F
ICV	↓	↓	1037	23.64	8.48	8.46	99.8	—	—	(P) F	(L) F
CCV	Gary	6/19/18	1440	25.4	7.20	8.28	100.5	←	—	(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; 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 µmhos/cm	Meter Reading µmhos/cm	Pass / Fail	Lab / Field
Calibr.	JOHN BARRINGTON	6/19/18	1039	1803216	4/19	500	500	(P) / F	(L) F
ICV	↓	↓	1041	1712LB	12/18	100	101	(P) F	(L) F
CCV	Gary Sharek	6/19/18	1435	18032/13	04/19	1000	989	(P) / F	L / F
CCV								P / F	L / F

Conductivity Acceptance criteria ± 5%

pH DEP SOP FT 1100	Name	Date	Time CT-ET	Lot #	Expir. Date	pH Buffer SU	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.	JOHN BARRINGTON	6/19/18	1043	177435	10/19	7.0	7.00	—	(P) / F	(L) / F
Calibr.	↓	↓	1045	180710	2/20	4.0	4.00	—	(P) F	(L) / F
Calibr.	↓	↓	1048	178540	12/19	10.0	10.01	—	(P) F	(L) F
ICV	↓	↓	1051	180710	2/20	4.0	4.03	—	(P) F	(L) F
CCV			1435	178540	12/19	10.0	9.98	—	(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 ± 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)

Is meter equipped with depth sensor? Yes (No) If yes, list date of last quarterly depth 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						P / F	L / F

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

COMMENTS: