

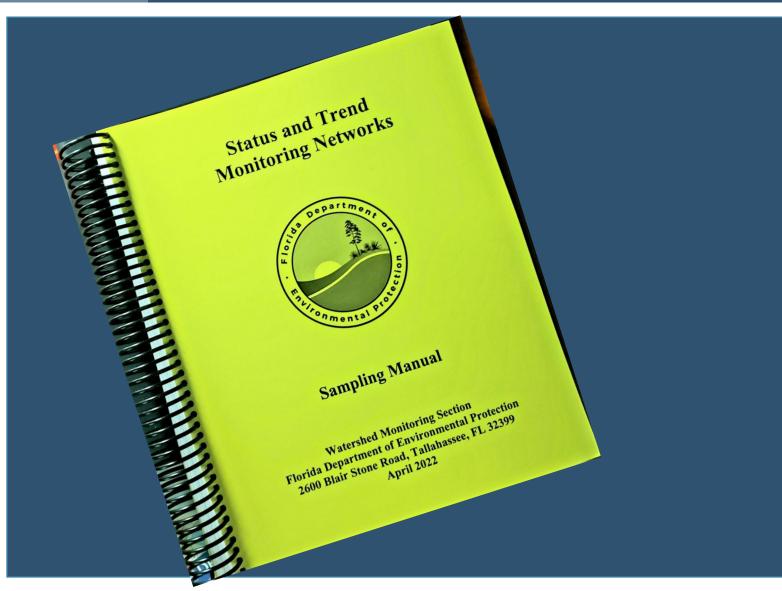
STATUS AND TREND SURFACE WATER SAMPLING PROCEDURES

Meghan Maly Division of Environmental Assessment and Restoration Florida Department of Environmental Protection

Tallahassee, FL | Nov 6, 2024



SAMPLING MANUAL



Surface Water Section Five, pages 47-57.



SURFACE WATER SAMPLING

Major Agenda Topics

- When/when not to collect samples.
- Field sheets.
- Sample collection and documentation.





SURFACE WATER SAMPLING

When/when not to collect samples.





ALL SURFACE WATER SITES SAMPLING REQUIREMENTS

- Water at least 10 cm deep to collect samples.
- Must have $\geq 0.5 \text{ m}^2$ free of attached vegetation at sampling point.
- Collect water quality data before collecting sediment or bioassessment data.
- When wading into a water body, enter the water carefully to **avoid disturbing the sediments**. Allow disturbed material to settle before sample collection.



STATUS AND TRENDS SAMPLING REQUIREMENTS FOR FLOWING WATERS

- When sampling from bridge or dock, collect samples from the upstream side whenever possible. Do **not** relocate Trend sites to meet this criterion.
- Always collect water samples upstream from the sampler's body or upstream from the boat.
- If tidally influenced, sample during falling tide (approaching low tide). Tide predictions at: <u>http://tidesandcurrents.noaa.gov/tide_predictions</u>

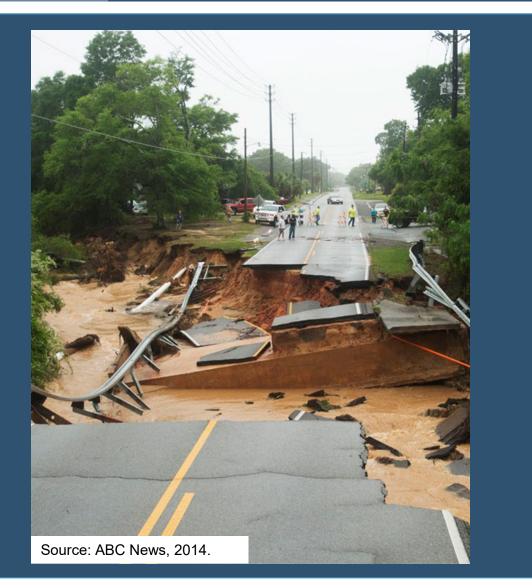


TREND NETWORK

- All sites are Flowing Waters (Rivers/Streams/Canals).
- Sampled monthly.
 - Field Measurements and Water Samples.
- Same location.
- Located using DGPS and permanent landmarks (bridge or gauge).



TREND SAMPLING LOCATIONS



- Stick with the historic location.
- If Trend location is flooded, you can sample if safe to do so.
- Contact Quality Assurance (QA) Officer/Project Manager if any problems or changes with the site.



STATUS SITE SELECTION

- **Random** locations Maintains statistical validity.
- All 15 primary sites must be evaluated before alternate sites can be sampled.
- Alternate sites must be evaluated in order.
- **No gaps allowed** in site evaluation. All sites from the first through highest number sampled must be sampled or excluded.



STATUS RESOURCE TYPES

- Canals (CN).
- Rivers (LR).
- Streams (SS).
- Large Lakes (LL).
- Small Lakes (SL).

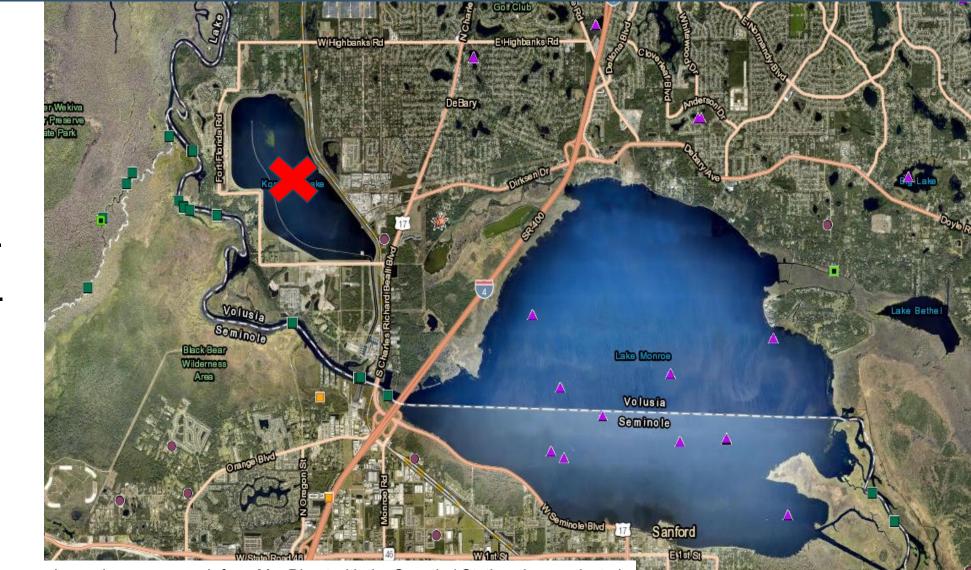


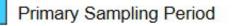
Image is a screen grab from MapDirect with the Sampled Stations layer selected.



STATUS NETWORK DESIGNATED SAMPLING PERIODS

 Table One (Page 127 in S&T Sampling Manual)

Month	Confined Aquifers	Unconfined Aquifers	Canals	Rivers	Streams	Large Lakes	Small Lakes
Jan			60				
Feb	120						
Mar	120						
Apr				90			
May						90	
Jun							
Jul					90		
Aug					90		
Sep							90
Oct							
Nov		120					
Dec							





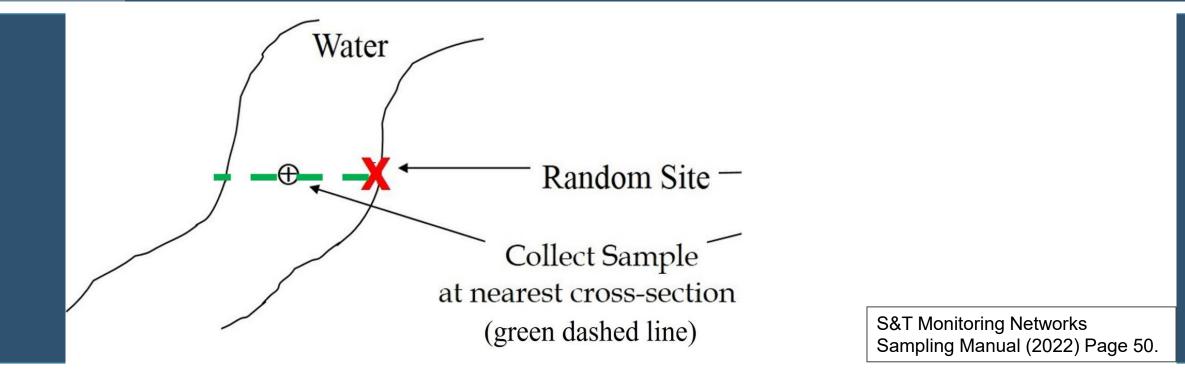


STATUS SAMPLING LOCATIONS STREAM/RIVER/CANAL

- Random location = cross-section of waterbody (perpendicular to the bank/flow).
- Collect in area of waterbody **representative** of the flow (commonly the middle).
- **Do not** move upstream/downstream.
- If random point on dry land, move ≤ 50 m toward nearest point in the water.
- **Do not** sample **Status** sites if **flooded** above banks.



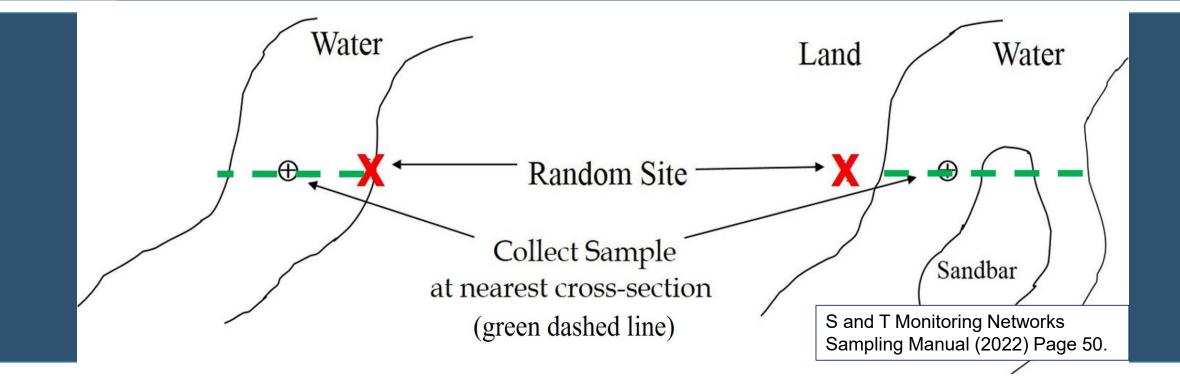
STATUS SAMPLING LOCATIONS



Left — Point is in water. Move to representative area of cross-section (no distance limit).



STATUS SAMPLING LOCATIONS



(Left) Point is in water. Move to representative area of cross-section (no distance limit).
 (Right) If you can reach water within 50 meters (m), site can be sampled. Move to representative area of cross-section (no distance limit).

If you can't reach water within 50 m, exclude as Wrong Resource / GIS coverage incorrect.

If sampled, where is GPS point collected? Always collect new location data at sampling location.



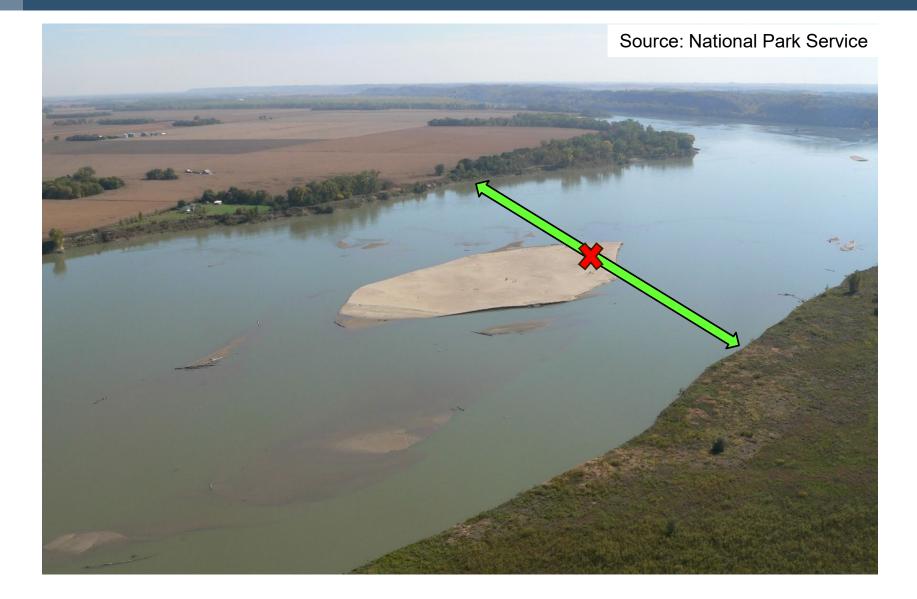
STATUS NETWORK RIVER

Source: National Park Service



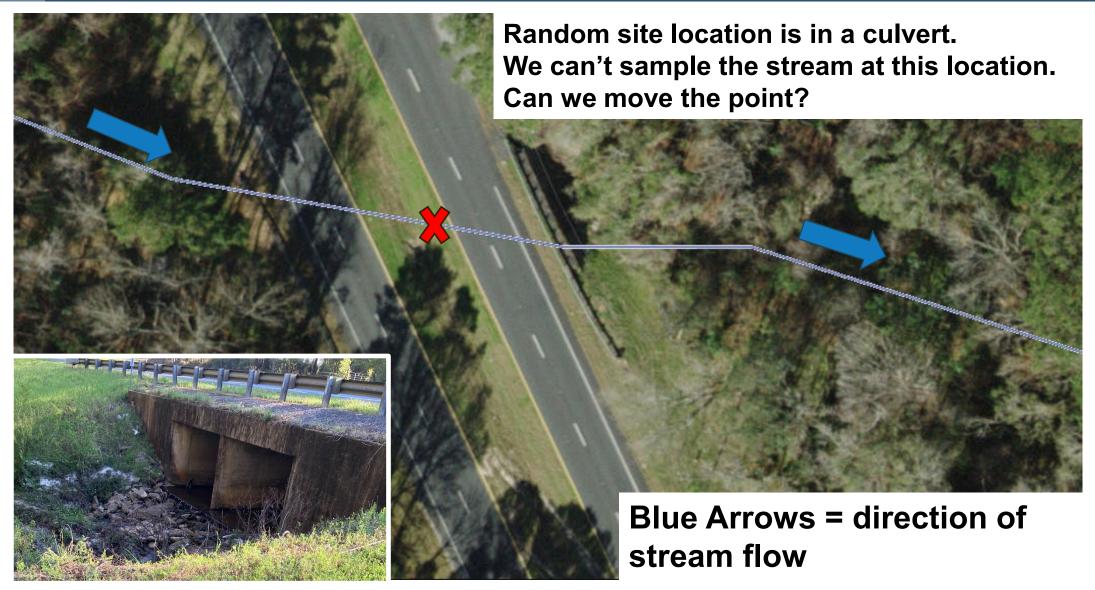


STATUS NETWORK RIVER





STATUS NETWORK STREAM





STATUS NETWORK STREAM

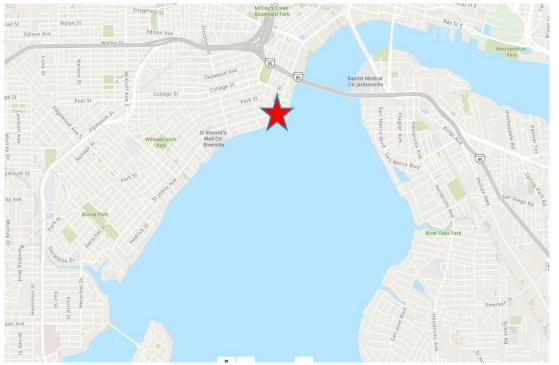
No sampling! Do not move point upstream or downstream. Exclusion: Otherwise Unsampleable, can't get equipment to site.





STATUS NETWORK: FLOODING

Map Direct Screen grab of Memorial Park on the St. John's River (Jacksonville, FL)





Memorial Park under normal conditions.



Source: News4Jax, 2022.

Union, 2020.

Source: The Florida Times

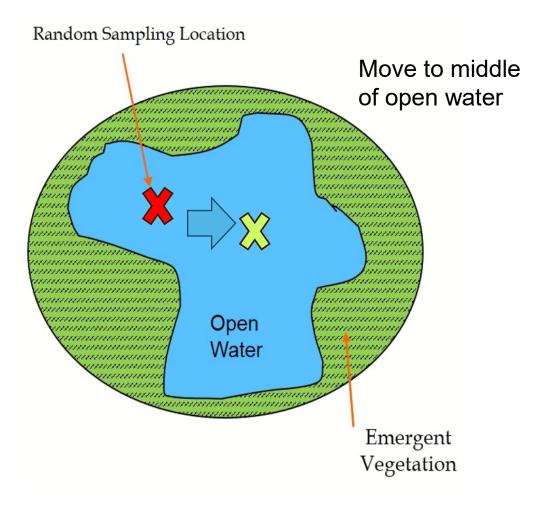
Memorial Park after Hurricane Nicole in 2022.

No sampling!

Do not sample Status Rivers/Streams/Canals if flooded above banks. Exclude as Otherwise Unsamplable/Flood Conditions.



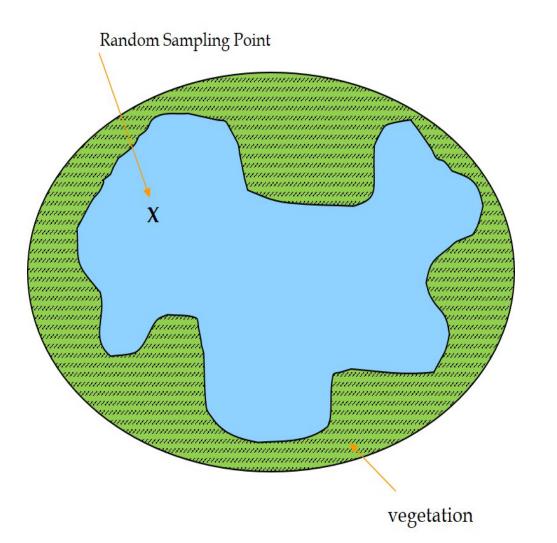
STATUS SAMPLING LOCATIONS SMALL LAKES



- Random location represents whole small lake.
- Must collect in the **middle** of the **open water**.
- If sampling location falls on dry land, move up to 50 m toward nearest point in the water. If water is reached, proceed to middle of open water to sample.



STATUS SAMPLING LOCATIONS LARGE LAKES



- Random location = sampling location.
- Use Bad Elf to navigate to the random site locations.
- Must collect sample **at** random location (lat/long).
- If random location falls on dry land, exclude site. Do not move site and do not sample.



- Consider:
 - \circ Size.
 - \circ Depth.
 - $_{\odot}$ Open water.
 - Tidal influence.



This small lake is named Bear Hammocks Lake.



- Size
 - Large enough to sample?
 - SL = four to < 10 hectares.
 - $LL = \ge 10$ hectares
 - Consider area with water present during index period.



This small lake is named Bear Hammocks Lake.



SAMPLING REQUIREMENTS

ALL LAKES

Figure 22. How to estimate the size of a small lake. One hectare is about two football fields side by side. Small lakes must be at least four hectares, or eight football fields side by side.

ㅎ ė ÷ 2 우 5 ㅎ 음 ŝ Ŕ ຂູ່ Ŕ N Ż N 8 8 ŝ 쑝 R 뵹 쑝 8 8 \$ \$ ŝ à \$ 송 á ŧ 5 ß 50 ß 8 5 5 20 8 8 8 \$ 븅 뵹 8 8 8 8 8 8 8 ۴ 8 8 8 8 8 8 8 8 2 2 8 5 8 ㅎ ė 2 = ÷ 2 2 5 = Ŕ R ສ່ ਲ è N N 20 ŝ 8 8 Ś ŝ Ś Ś 8 \$ \$ ŧ 흉 a 8 ŧ 뜅 ß 5 8 鹄 8 5 8 8 4 8 S 븅 븅 흉 롼 ŝ 8 8 용 8 용 8 旨 8 20 30 8 8 8 8 3 2 2 ㅎ 10 8 5

Source: Watershed Monitoring Section's Status Network Reconnaissance Manual (Updated 2024). Page 33.

Four hectares = 9.88 acres (8 football fields).

Ten hectares = 24.71 acres (18 football fields).



- Size.
- Depth.
 - Lake's deepest point ≥1 m?
 - Sampling point ≥ 10 cm
 deep?





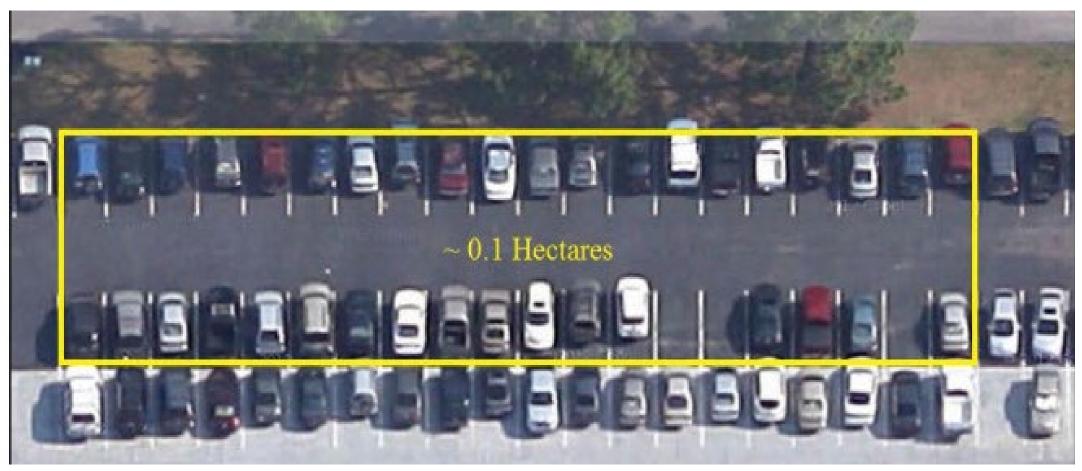
- Size.
- Depth.
- Open water.
 - Sampling point ≥ 0.5 m² free of attached vegetation?

	1		
F			
- 14	AB		

- (0.5 m² = height x length of two 48-quart coolers from DEP Lab).
- ≥ 0.1 ha (0.25 acres, 1000 m²) total open water?







Source: Watershed Monitoring Section's Status Network Reconnaissance Manual (Updated 2024). Page 34.

0.1 hectares = Two rows of 20 parking spaces with a two-lane road between them.



STATUS ALL LAKES

- Size.
- Depth.
- Open water.
- Tidal influence?
 - Exclude as wrong resource / estuary if directly connected to oceanic waters.





STATUS SMALL LAKES

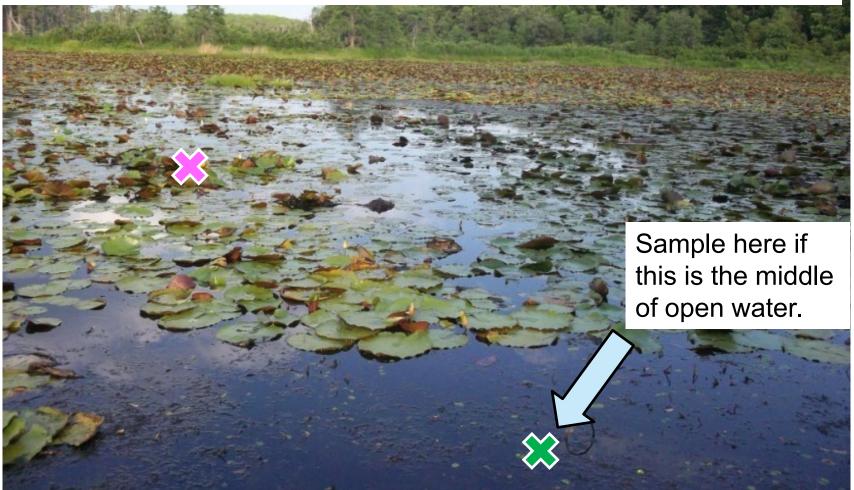
Assume that size/depth requirements are met for the small lake, and it is not tidally influenced. Could you sample this lake?





STATUS SMALL LAKES

Yes - you can sample! For Small Lakes - sample in middle of open water.

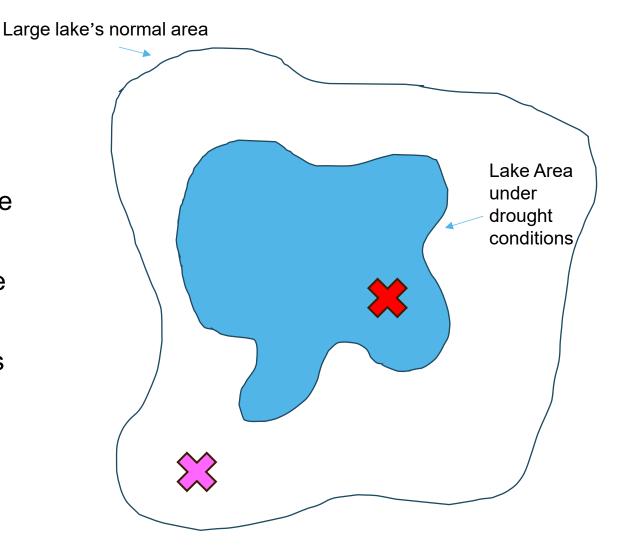




STATUS LARGE LAKES

Large Lake Example Number 1:

- Drought conditions are present such that the large lake is < 10 hectares.
- The pink and red 'X' are the random sample locations.
- Would you exclude both sites? If so, what is the exclusion?



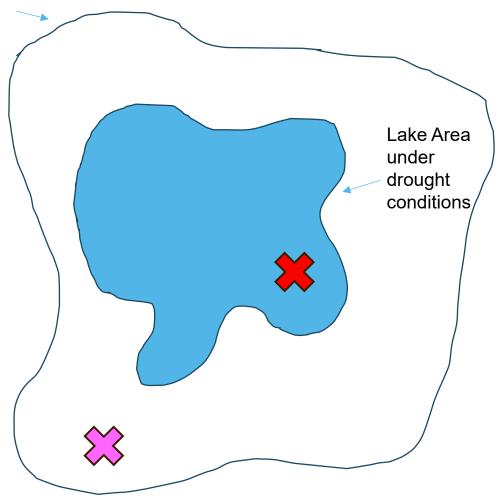


STATUS LARGE LAKES

Large lake's normal area

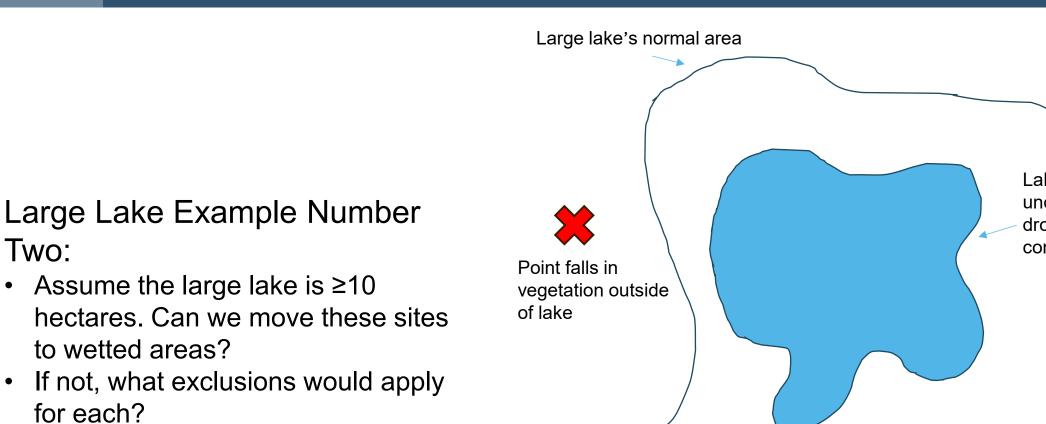
Answer:

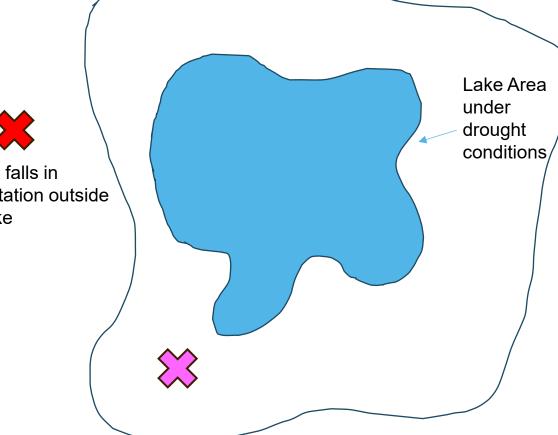
If the wetted area of the large lake is less than 10 hectares, the site should be excluded even if the random location falls in water. The appropriate exclusion in this case would be 'Dry > Random location dry during index period.'





Two:



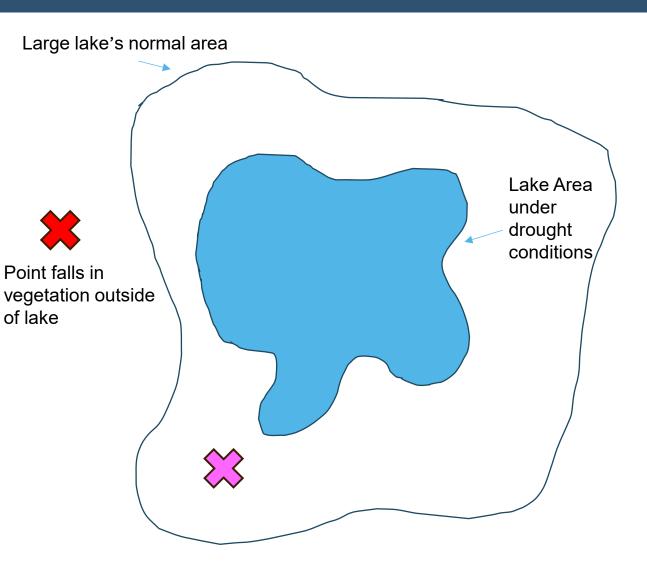




STATUS LARGE LAKES

Answer:

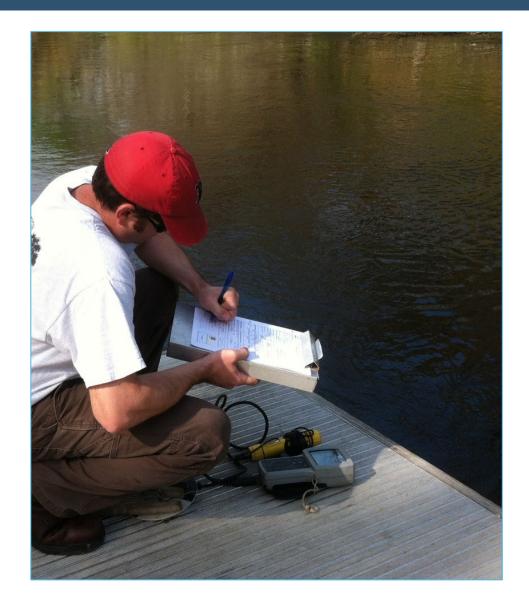
- For large lakes, you must collect sample **at** random location (latitude/longitude).
- If random location falls on dry land exclude site. Do not move site. Do not sample.
- Specific Exclusions.
 - \circ Red 'X' = Wrong resource.
 - \circ Pink 'X' = Dry.





MAJOR TOPICS

- When/when not to collect samples.
- Field sheets.
- Sample collection and documentation.





FIELD SHEETS

DO not make **ANY** assumptions while reviewing data.

Not Documented = NOT DONE.



Color (true)	27	J	PCU
Specific Conductance, Lab	154	J	uS/cm
Alkalinity, Total (as CaCO3)	60	J	mg/L
Total Suspended Solids (TSS)	3	IJ	mg/L
Ammonia, Total (as N)	0.011	J	mg/L
Kjeldahl Nitrogen, Total (as N)	0.26	J	mg/L
Nitrate+Nitrite, Total (as N)	1	J	mg/L
Phosphorus, Total (as P)	0.025	J	mg/L
Organic Carbon, Total	4.4	J	mg/L
Calcium, Total	25.5	J	mg/L
Magnesium, Total	1.66	J	mg/L
Sodium, Total	2.3	J	mg/L
Potassium, Total	1.4	J	mg/L
Chloride, Total	6.4	AJ	mg/L
Sulfate, Total	1.2	AJ	mg/L
Fluoride, Total	0.03	IJ	mg/L
Chlorophyll-A Uncorrected, (Trichromatic)	1.6	IJ	ug/L
Chlorophyll-A (Monochromatic)	1.4	IJ	ug/L
Pheophytin-A (Monochromatic)	0.9	UJ	ug/L
Hardness, calculated as CACO3	70.5	J	mg/L
Turbidity, Lab	7	AJ	ntu
Escherichia Coli-Quanti-Tray	213	J	MPN/10

This is a screen grab of the results file where J qualifiers/comments have been added after data reviewers noted we were missing cleaning documentation.

CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE C CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPI CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT MPN/100 mL CLEANING NOT DOCUMENTED OF VAN DORN NO. 3 PRIOR TO SAMPLE COLLECT



FIELD SHEETS

Use Survey123 Status and Trend Surface Water form to complete field sheets and custody sheets.

FL DEP Status and Trend Networks - Surface Water	<u> </u>
\bigtriangledown Primary (Surface) Field Measurements	
Surface Sample Collection Depth (meters)	
Secchi Depth (meters)	
Select "VOB" if secchi visible on bottom.	
VOB	
Total Depth (meters)	
Surface Temperature (°C)	
Surface D.O. (% SAT)	
Surface D.O. (mg/L)	
Surace D.O. (mg/L)	
Surface Specific Conductance (µmhos/cm)	
Surface pH (SU)	
Surface Measurements - Expand this section to add	
qualifiers and comments to data for individual field	
narameters	1

Vater	Sample C	ollection Devic	:e: *				
D	irect Grab	w/ Sample Bottl	e	Van Dor	n		
cces	s Method	for Water Samp	ole Colle	ection: *			
						~	
Vater	Sample II	ventory & Pres	servatio	n Details			
ottla	aroun for	water samples	2*				
A	group for	B B	:	С	D		
E		O F		G	н		
\bigtriangledown	rend Ne	twork - Core	Parame	eters			
	rophyll co st: CHLSUITE	ntainer filled? (-w	(BP-1L)	•			
	YES			NO			
Lab te		ainer filled? (P w-NO2NO3 / W-S-1					
		er filled? (P-50 / W-ICP / W-ICPMS	0ML) *				
	YES			NO			
Anic	n / Phys. A	Aggregate cont	ainer fil	led? (P-1L)	*		
	sts: ALKALIN W-TSS	ITY / TURBIDITY / W	CL-IC / W	-COLOR / W-C	OND / W-F / W-S	D4-IC / W-	
	YES			NO			
	obiology of st: ECOLI-18-	container(s) fille QT	ed? (P-2	50mL or P-	125ML) *		
	YES			NO			

Sediment collection depth (met (Total water depth.)	ers) *
Sediment collection Interval: *	
Top 3-5 cm	Other (if top 3-5 cm is too flocculent)
Sediment collection device: *	
Hand Corer Ek	man Grab Petite Ponar Grab
Sediment collection device ID: '	(
Number of sediment grabs: * (minimum 3 grabs required for Status Net	work)
Sample collection area descript	ion: *
(e.g. near east shore; central)	
Dominant Sediment Type * (select only one)	
Clay / Silt Sand	Gravel / Shell Organic Rubble Muck
Sediment Odors * (select only one)	
Normal Sewage	Petroleum Bulfide
Other	
Sediment Color: *	



FIELD SHEETS



FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STATUS & TREND NETWORKS FIELD SHEET - SURFACE WATER Effective: January 2024

Collection Agency:	Project Name	Data
	110jeet Ivanie	Date
Trend Network Station Name: OR		
Status Network Random ID:		
Waterbody Name:		RQ
Waterbody Type: O CANAL / C	Ŷ	O LARGE LAKE / O SMALL LAKE
Sampling Team Member Names	Field Measurements Measurements Water Sample Collection Documentation Preservation Field / Equip. Blank Collection Settiment Sample Collection Blank Collection	Data Signatures Construction Construction Construction
Additional Personnel / Visitors On-site: Weather Conditions: Photos Taken: O Yes / O No (R	equired for all Status stations. Requi	
Water Level: O Low / O Norm Flow: O No Flow / O Flowing Tide: O Rising / O Falling /	/ ONA	bove Banks (DO NOT sample for Status CN / LR / SS)
QA/QC Blank Collected at this station	None / OField Blank / C	Equip. Blank
QA/QC Blank Field ID:	Collection Time	(24 hr): \Box ETZ / \Box CTZ
Van Dorn Equip. ID / Name:		Lab-Cleaned / O Field-Cleaned
	one / HA / SCI	
Sed. Collection Depth (m):	(total water depth) Number cm / Other (if top 3-5 cm is t	oo flocculent)
Sed. Collection Device: O Corer /	O Ekman / O Petite Ponar	Device ID:
Dominant Sed. Type (select one): O Cla	y/Silt / O Sand / O Grav	el/Shell Rubble / Organic Muck
Sediment Odors (select one): ONormal	/ O Sewage / O Petroleum	(very fine grained, floccul Hydrogen Sulfide / Other
Sediment Sample Comments:		

- Paper field sheets are available on the Watershed Monitoring Information Center.
- Keep copies in vehicles as back up.



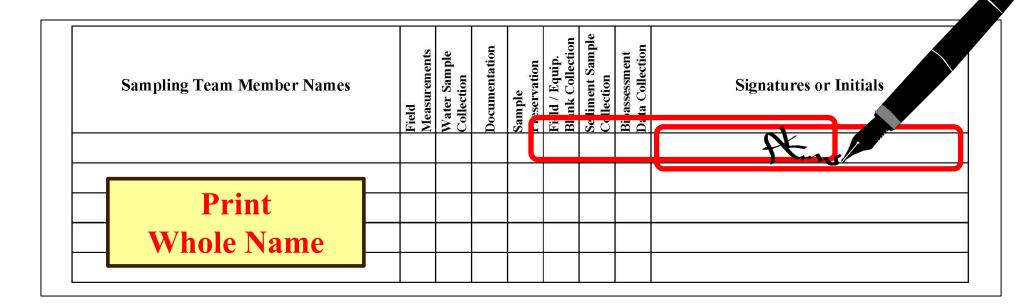
GENERAL STATION INFORMATION

- Use the most recent version (January 2024).
- Station name.
- Sampling date.
- Waterbody name and type.

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION STATUS & TREND NETWORKS FIELD SHEET - SURFACE WATER Effective: January 2024						
Collection Agency:	Project Name:	Date:				
Trend Network Station Name: OR						
Status Network Random ID:						
Waterbody Name:		RQ				
Waterbody Type: O CANAL /	ORIVER / OSTREAM / OL	ARGE LAKE / O SMALL LAKE				



GENERAL STATION INFORMATION



 Record names/signatures of all samplers on the paper form. (Survey123 Signature – use initials).



PHOTO DOCUMENTATION ALL STATUS AND TREND SITES

Additional Personnel / Visitors On-site:
Weather Conditions:
Photos Taken: O Yes / O No (Required for all Status stations. Required annually for all Trend stations.)
Water Level: O Low / O Normal / O High / O Flooded Above Banks (DO NOT sample for Status CN / LR / SS)
Flow: O No Flow / O Flowing / O NA
Tide: ORising / OFalling / OSlack / ONA

- Recommend taking photos with Survey123.
- Photos will be stamped with station ID, date, and direction (North (N), East (E), South (S) and West (W)) in lower-left corner.
- Photo files will be automatically named and transferred to DEP SharePoint.



PHOTO DOCUMENTATION ALL STATUS AND TREND SITES



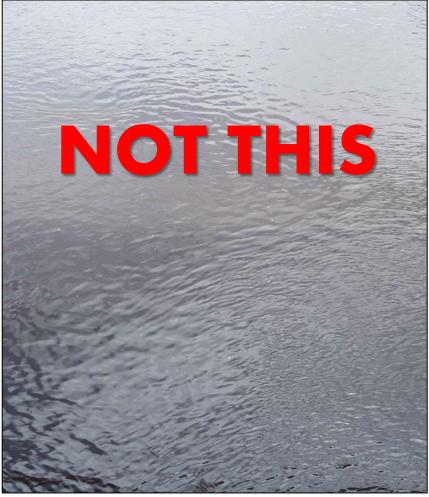
- Photos at all Status and annually at Trend sites (more frequently if changes have occurred).
- Four photos required at all sites: North (N), East (E), South (S) and West (W).
- Additional photo of sample location required if sampling from shore or on a structure.
- Upstream/downstream photos are helpful.



PHOTO DOCUMENTATION

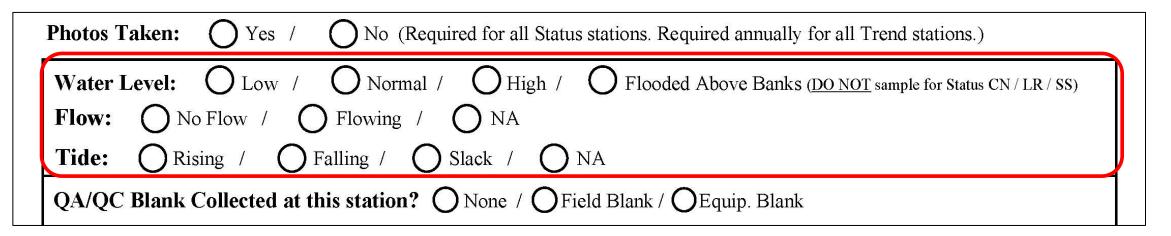
- Sampling point **on** the structure.
- Not view from the structure.







WATER CHARACTERISTICS SAMPLING POINT MEASUREMENTS



- Qualitative Water Level.
- Qualitative Water Flow (flowing waters only).
- Qualitative Tide (note the NA).



QUALITY ASSURANCE/CONTROL

QA/QC Blank Collected at this station? O None / O Field Blank / O Equip. Blank						
QA/QC Blank ID:	Collection Time (24 hr): O ETZ / O CTZ					
Van Dorn Equip. ID / Name:	Cleaning: O Lab-Cleaned / O Field-Cleaned					
Equipment Blanks.Field Blanks.						





Complete bioassessment & sediment info

Bioassessment Data Collected: None / HA / SCI / RPS /	LVS / LVI
Sediment Sample Collected: O NO / O YES Sed. Collection Time (24hr):	
Sed. Collection Depth (m): (total water depth) Number of Grabs:	(minimum 3)
Sed. Collection Interval: O Top 3-5 cm / O Other (if top 3-5 cm is too flocculent)	
Sed. Collection Area Description (e.g. near east shore; central):	
Sed. Collection Device: O Corer / O Ekman / O Petite Ponar Device ID:	
Dominant Sed. Type (select one): O Clay/Silt / O Sand / O Gravel/Shell Rubble /	Organic Muck (very fine grained, flocculent)
Sediment Odors (select one): ONormal / O Sewage / O Petroleum / O Hydroge	en Sulfide / O Other
Sediment Color:	
Sediment Sample Comments:	



When collecting any bioassessment, a Phys-Chem and Habitat Assessment should **always** be completed.



FIELD MEASUREMENTS



Field II);		Project Name:	Date:
Water S	ampling Equipm	ent: O Direct	Grab with Sample Container	
and the second sec	0 1	/an Dorn:	# of Grabs;	Equipment ID
Collection Method	: O Wading /	O From Shore	or Structure / O Canoe	or Kayak / 🛛 🔿 Air Boat /
	🗸 Boat - Ga	soline Motor /	Boat - Electric Motor /	U Other
Field Meter ID:				
	-	Field Meter Listed A	bove / O Other	
				n → surf meas. & sample at mid-depth. 0.3m, bottom meas. 0.5 m above bottom.
RIMARY (SURFA				
2	,	e on bottom (S qual	N. C.	
	* 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		cause total depth < 1.5 m.	
PARAMETER	VALUE	QUALIFIER(S)	÷	
D.O. (mg/L)				
0.0. (% SAT)				
emp (°C)				
H (SU)				
ample Collection Depth (m)				
ecchi Depth (m)				
otal Depth (m)				
p. Cond. (umhos/cm)				
BOTTOM SAMPLI	(FIELD MEAS	. ONLY) Collect	ion Time (24 hr):	🗆 etz / 🗖 ctz
ARAMETER	VALUE	QUALIFIER(S)	RESULT COMMENT	
).O. (mg/L)				
0.0. (% SAT)				
emp (°C)				
H (SU)				
ample Collection				
Depth (m) p. Cond. (umhos/cm)				
SAMPLE COMME	NTS			
RIMARY (SURFAC				
	<i></i>			
BOTTOM:				
		OFFIC	CE USE ONLY	
				Date:
Reviewed By:				



RECORD MEASUREMENT DEVICE INFORMATION

Field Meter Listed Above

Field Meter ID:

Depth Measurement Device: (

• Field Meter Name.

- Measurement Device.
- Compare this info with the calibration logs.

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

Other



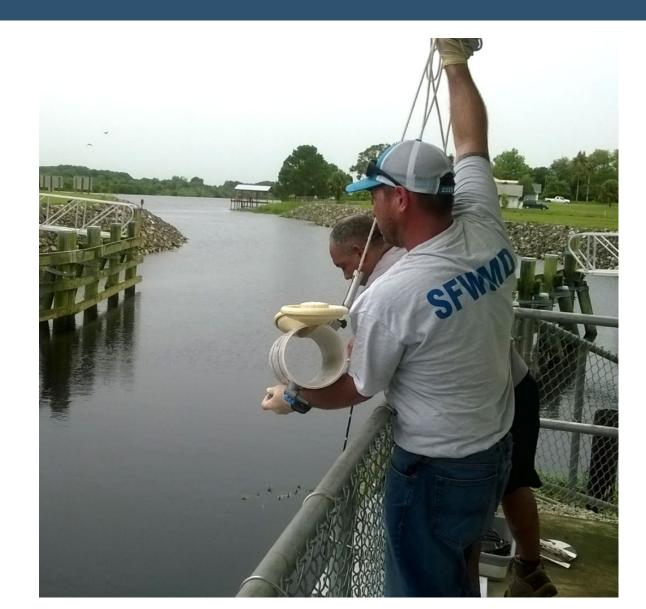
Notes: (1) Always wait for meter to stabilize before recording any readings. (2) Report all digits displayed. <u>Do not</u> round before reporting measurements. (See spec

Same Meter IDs must be used on Field Sheet **and** Calibration Log.



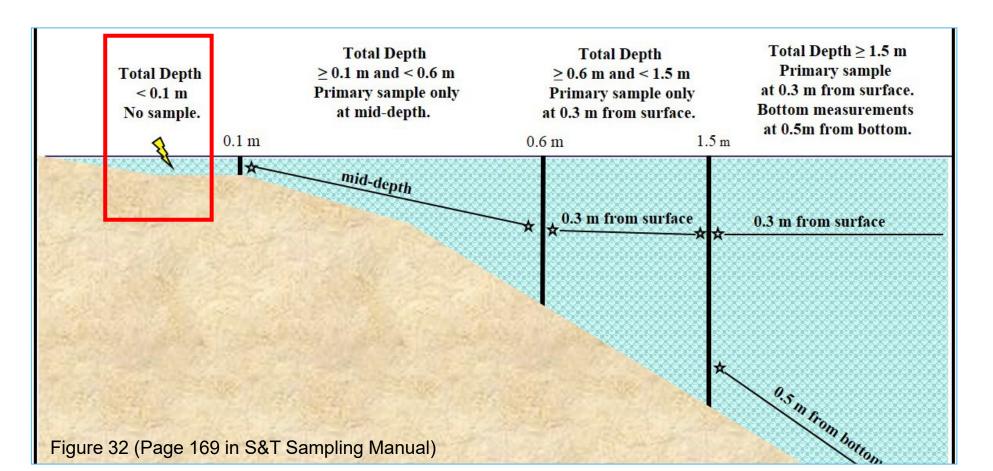
MAJOR TOPICS

- When/when not to collect samples.
- Field sheets.
- Sample collection and documentation.





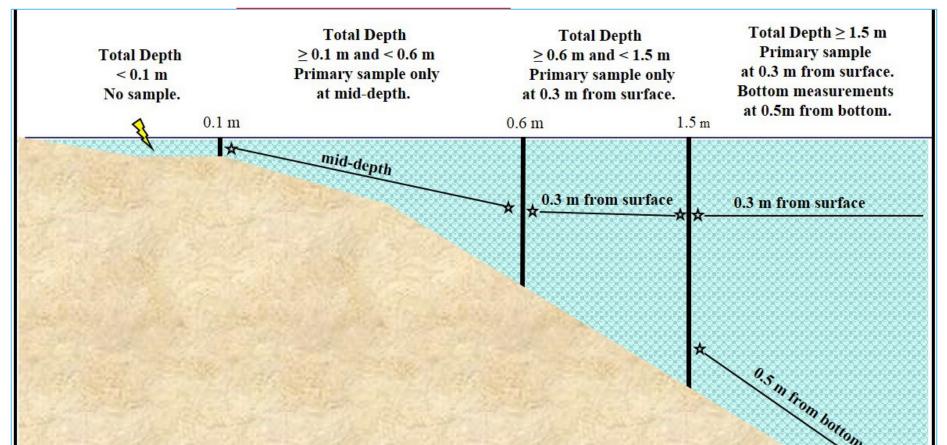
No Sampling if Total Depth is ____? No Sampling if Total Depth is < 0.1 m.





When Depth \geq 0.1 m and < 0.6 m:

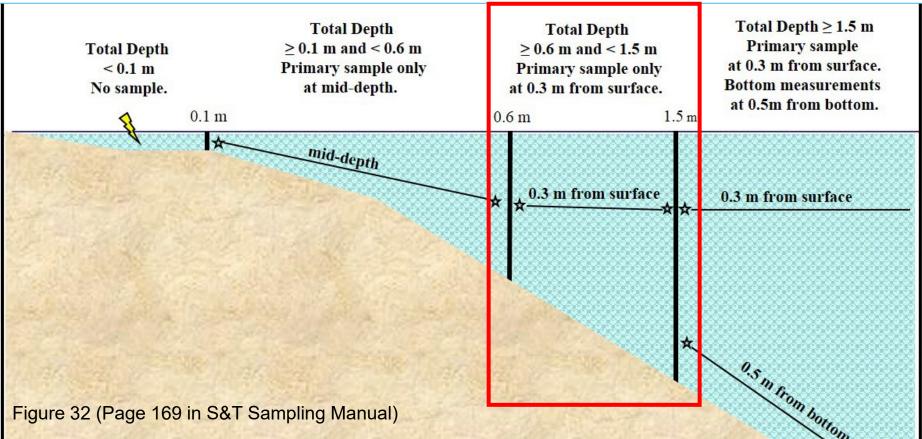
- Primary samples taken at mid-depth.
- No bottom sample.
- Record Total, Sample, Secchi depth to nearest 0.01 m (measure twice).





When Depth \geq 0.6 m and < 1.5 m:

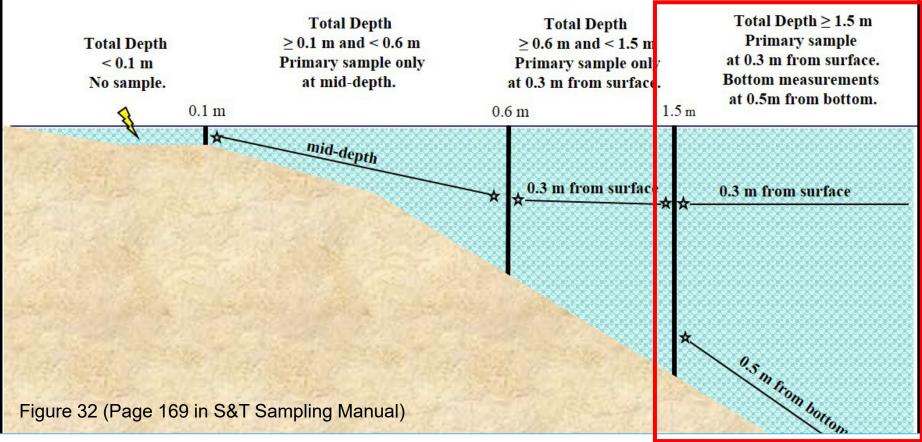
- Primary sample 0.3 m below the surface.
- No bottom sample.
- Record Total, Sample, Secchi depth to nearest 0.1 m (measure twice).





When Depth \geq 1.5 m:

- Primary sample 0.3 m below the surface.
- Bottom field measurements 0.5 m from the bottom.
- Record Total, Sample, Secchi depth to nearest 0.1 m (measure twice).





FIELD MEASUREMENTS

- Record field measurements to the number of decimal places indicated in Table 6 (Page 133 in Status and Trend Sampling Manual).
- Notice that all digits are displayed for all field parameters except depth.
- Pay attention to field measured depth to determine decimal places.

Parameter	Number of Decimal Places to Record	Calibration / Verification Frequency	Acceptance Criteria
рН (FT 1100)	All Digits Displayed	<u>Daily</u> : IC, ICV, CCV.	± 0.2 SU
Specific Conductance (FT 1200)	All Digits Displayed	<u>Daily</u> : IC, ICV, CCV.	± 5%
Dissolved Oxygen (mg/L and % Saturation) (FT 1500)	All Digits Displayed	<u>Daily</u> : IC, ICV, CCV.	± 0.3 mg/L
Temperature (FT 1400)	All Digits Displayed	Quarterly: CCV.	± 0.5 °C
Turbidity (FT 1600)	All Digits Displayed	<u>Daily</u> : CCV. <u>Quarterly</u> : IC, ICV, secondary standard verification.	0.1 – 10 NTU: ± 10%; 11 – 40 NTU: ± 8%; 41 – 100 NTU: ± 6.5%; > 100 NTU: ± 5%
Depth $\begin{array}{c} \frac{Calibrations \&}{Verifications:}\\ 2 \ for \ electronic\\ devices;\\ 1 \ for \ manual\\ devices.\\ \hline Field\\ \hline Measurements:\\ 2 \ if \ total \ depth\\ < 0.6 \ m;\\ 1 \ if \ total \ depth\\ \ge 0.6 \ m\end{array}$		<u>Daily:</u> IC, ICV for Sondes. <u>Quarterly:</u> Verify Sondes & Electronic Devices. <u>Every 6 months:</u> Inspect Manual Devices.	$\frac{\text{ICV}: \pm 5\% \text{ or } \pm 0.05 \text{ m, whichever is}}{\text{greater.}}$ $\frac{\text{Electronic Device Verification: } \pm 10\%.}{\text{Line Increments: } \pm 10\%.}$ $\frac{\text{Total Length of Lines:}}{\pm 5\%.}$



TOTAL, SAMPLE AND SECCHI DEPTH

- Total and sample depths.
 - Measure using manual/electronic device.
- Secchi depth.
 - $\circ~$ Measure on shady side of boat/body.
 - Remove sunglasses.
 - $\circ~$ Record the depth at which disk disappears.
 - Lower the disk slightly further. Raise the disk till it reappears and record that depth.
 - \circ Average these two depths.
 - Visible on bottom?
 - Add "S" Qualifier and result comment.
 - Swift currents/choppy water affect the accuracy?
 - Add "J" Qualifier and result comment.



FIELD INDICATORS INFO ABOUT THE DATA COLLECTION

Collection Time:

The times must be the same on:

- 1. Primary collection on field sheet.
- 2. Sample container.
- 3. Custody sheet.

PRIMARY (SURFAC	CE) SAMPLE	Collection Time (2	(24 hr):	PRIMARY	
Check here if Se	cchi depth visible	on bottom (S qual	lifier neede	ed).	
Check here if bo	ttom measuremer	nts not collected be	ecause total	depth < 1.5 m.	
PARAMETER	VALUE	QUALIFIER(S)	RESULT	COMMENT	
D.O. (mg/L)					
D.O. (% SAT)					
Temp (°C)					
pH (SU)					
Sample Collection Depth (m)					
Secchi Depth (m)					
Total Depth (m)					
Sp. Cond. (umhos/cm)					
BOTTOM SAMPLE	(FIELD MEAS.	ONLY) Collect	tion Time (2	24 hr):	ETZ / CTZ
PARAMETER	VALUE	QUALIFIER(S)	RESULT	COMMENT	
D.O. (mg/L)					
D.O. (% SAT)					
Temp (°C)					
pH (SU)					
Sample Collection Depth (m)					
Sp. Cond. (umhos/cm)					



FIELD INDICATORS INFO ABOUT THE DATA COLLECTION

 Bottom field measurements should have a unique sample collection time compared to the primary sample time.

PRIMARY (SURFA	CE) SAMPLE	Collection Time (2	24 hr):	ETZ / CTZ
Check here if Se	cchi depth visible	on bottom (S qual	ifier needed).	
Check here if bo	ttom measuremen	its not collected be	cause total depth < 1.5 m.	
PARAMETER	VALUE	QUALIFIER(S)	RESULT COMMENT	
D.O. (mg/L)				
D.O. (% SAT)				
Temp (°C)				
pH (SU)				
Sample Collection Depth (m)				
Secchi Depth (m)				
Total Depth (m)				
Sp. Cond. (umhos/cm)				
BOTTOM SAMPLE	(FIELD MEAS.	ONLY) Collect	ion Time (24 hr): <u>unique</u>	ETZ / CTZ
PARAMETER	VALUE	QUALIFIER(S)	RESULT COMMENT	
D.O. (mg/L)				
D.O. (% SAT)				
Temp (°C)				
pH (SU)				
Sample Collection Depth (m)				
Sp. Cond. (umhos/cm)				



COMMENTS INFO ABOUT THE DATA COLLECTION

We love comments! Be specific!

Remember Qualifiers!

PRIMARY (SURFAC	CE) SAMPLE	Collection Time (2	24 hr):	□ ETZ / □ CTZ
□ Check here if Se	cchi depth visible	on bottom (S qual	ifier needed).	
□ Check here if bo	tom measuremen	nts not collected be	cause total depth < 1.5 m.	
PARAMETER	VALUE	QUALIFIER(S)	RESULT COMMENT	
D.O. (mg/L)				
D.O. (% SAT)				
Temp (°C)			ent	c
pH (SU)			Result Comment	
Sample Collection Depth (m)				
Secchi Depth (m)				
Total Depth (m)				
Sp. Cond. (umhos/cm)				
BOTTOM SAMPLE	(FIELD MEAS.	ONLY) Collect	ion Time (24 hr):	ETZ / CTZ
PARAMETER	VALUE	QUALIFIER(S)	RESULT COMMENT	
D.O. (mg/L)				
D.O. (% SAT)			ement	[S
Temp (°C)			Result Comment	
pH (SU)				
Sample Collection Depth (m)				
Sp. Cond. (umhos/cm)				
SAMPLE COMMEN	ITS			
PRIMARY (SURFACE	2):	Sample Co	mments	
BOTTOM:		Sample Co		



SAMPLE BOTTLES/CONTAINERS



- All containers provided by lab are new/certified clean.
- Do not pre-rinse containers.
- Do not touch inside of containers or the threads on the neck.



SAMPLE CONTAINER LABELS

- Place Station ID Label vertically on all sample containers.
- Record date, time and sampler initials on Lab ID label.
- Date/Time on sample bottle **must match** primary field measurement date/time.



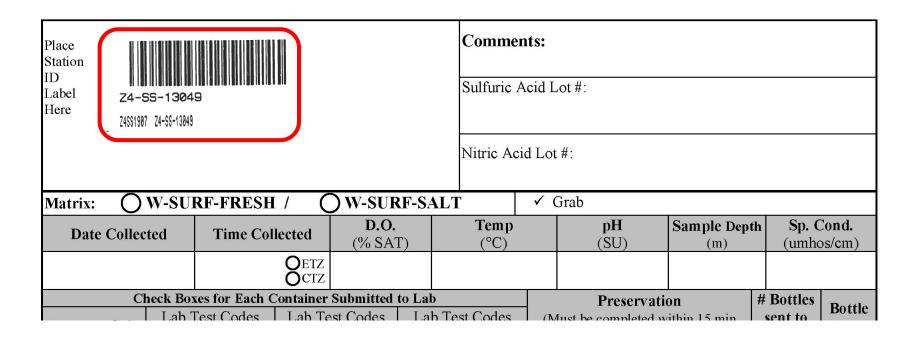
RQ-2019-09-23-37 Bottle G Preservative: ICE Container Type: BP-1L

PRIMARY (SURFAC	E) SAMPLE	Collection Time (2	24 hr): PRIMARY		CHLSUITE-W
□ Check here if Sec	chi depth visible	e on bottom (S qual	ifier needed).		8/12/2024
Check here if bot	tom measuremen	nts not collected be	cause total depth < 1.5 m.		1600
PARAMETER	VALUE	QUALIFIER(S)	RESULT COMMENT		
D.O. (mg/L)					MM
D.O. (% SAT)				1	



LABELING

Station ID barcodes on sample details page.



Barcodes auto-generated on field sheets produced by submitting data with Survey123.



SAMPLE COLLECTION GENERAL





- Always wear gloves when handling sample containers and equipment.
- Collect water samples on **upstream** side of boat/body.
- Avoid disturbing the sediments or wait for sediments to settle.
- Collect water samples **before** collecting sediments or performing bioassessment.



SAMPLE COLLECTION METHODS

Direct Grab (preferable)





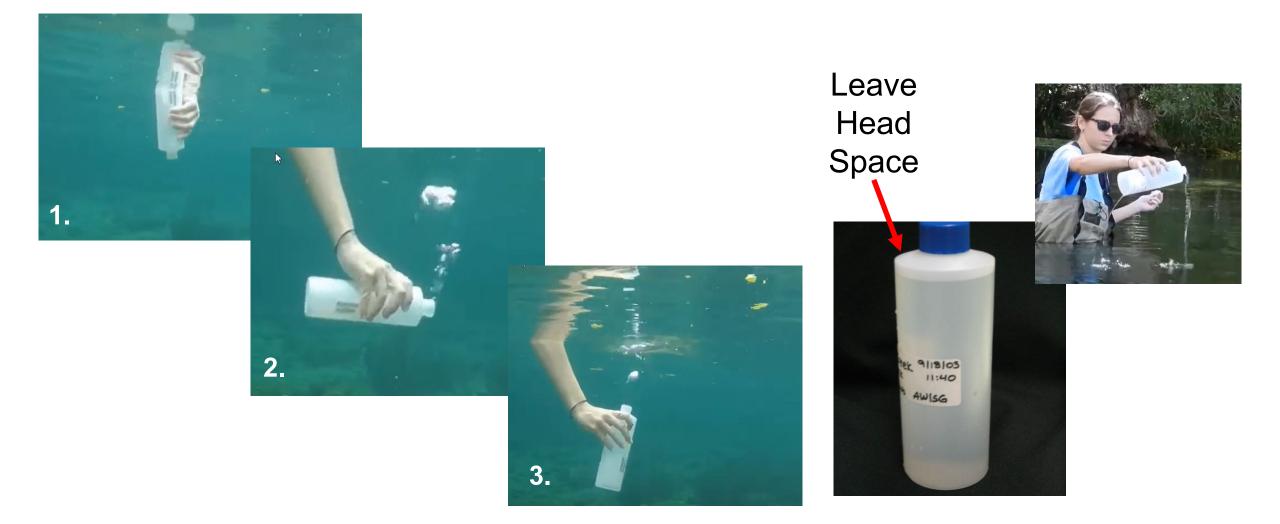






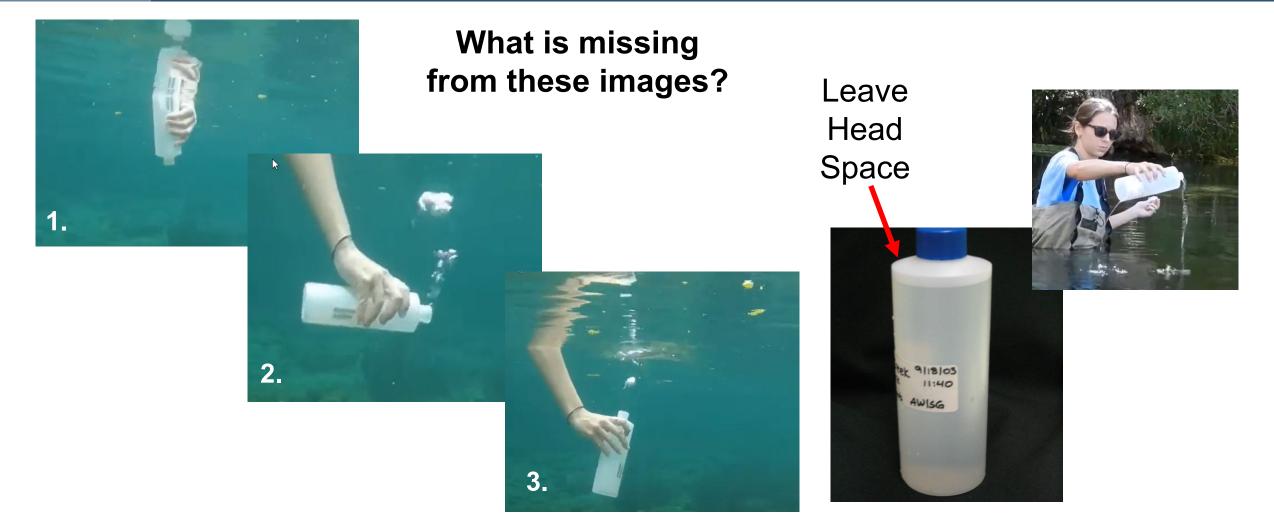


GRAB SAMPLES



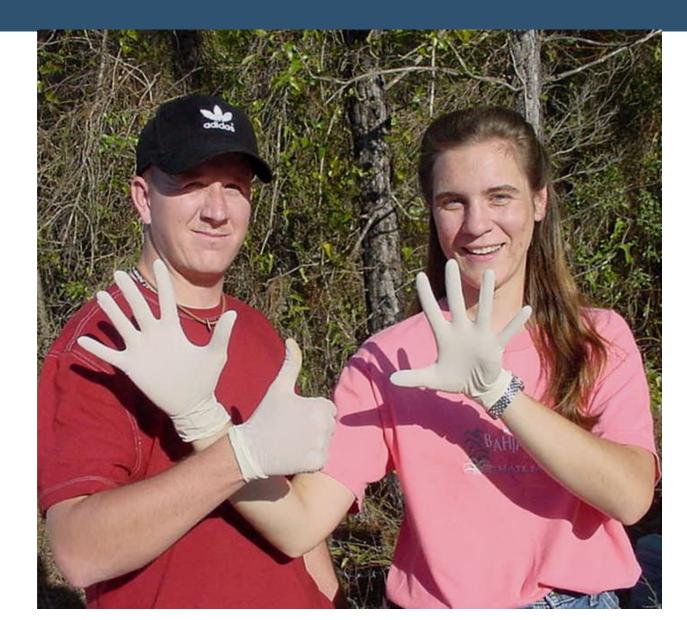


GRAB SAMPLES





WEAR GLOVES WHILE COLLECTING SAMPLES





VAN DORN COMPONENTS

- Body.
- End caps.
- Trip mechanism.
- Rope.
- Messenger.
- Drain valves.





VAN DORN SAMPLING DEPLOYMENT PREP

- Consider the depth of the water body and if deployment at 0.3 m will disturb sediments.
- Place a mark on the line at the appropriate sampling depth.
- Rinse first.
 - $_{\odot}$ Flush open device for good velocity systems.
 - Or capture device and rinse/release away/downstream from the sample location.
 - $_{\odot}$ Remember to flush water through spigot/stopcock.





VAN DORN SAMPLING DEPLOYMENT PREP

- Once rinsed, lower the open device into the water referencing the marked line.
- Send messenger down to close.
- Retrieve the device.





VAN DORN SAMPLING FILLING SAMPLING BOTTLES

- Agitate to minimize settling of particulates.
- Release some water through spigot before filling containers.
- Fill Containers leaving headspace.

 Allow water to flow continuously and fill in rapid succession.

OR

 Stop/start flow between each container after agitating Van Dorn to uniformly mix contents.





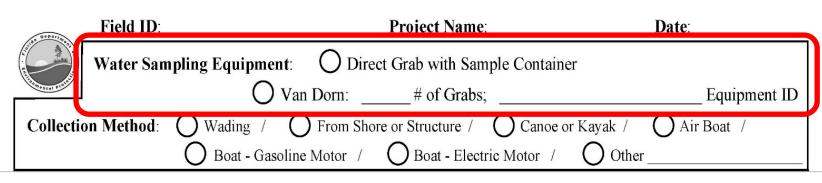
VAN DORN SAMPLING FILLING SAMPLING BOTTLES

- Fill microbiology containers last.
- When filling microbiology containers do not stop flow before or during the filling process.
- Take care to avoid touching the inside of the containers or the threads.
- Secure container lids.





DOCUMENTATION



- Select water sample collection device type on field sheet.
- Record Equipment ID and number of grabs collected with the Van Dorn.
 - Same Equipment IDs must be used on Field Sheets and in Cleaning Log.



SW SAMPLE DETAILS PAGE

C	heck Boxes for Each	Container Submitted	to Lab	Preservation
Parameter Suite	Lab Test Codes Trend Core	Lab Test Codes Status Core	Lab Test Codes Special Projects	(Must be completed within 15 min of sample collection)
Chlorophyll (BP-1L)	CHLSUITE-W	CHLSUITE-W		Ice
Nutrients (P-500ML)	W-NH3 / W-NO2NO3 / W-S-T-P / W-TKN / W-TOC	W-NH3 / W-NO2NO3 / W-S-T-P / W-TKN / W-TOC		$\square 2ML H_2SO_4 \square pH < 2 \square Ice$
Metals (P-500ML)	W-HARD / W-ICP / W-ICPMS	W-HARD / W-ICP / W-ICPMS		\square 2ML HNO ₃ \square pH < 2 \square Ice
Anion / Phys. Aggregate (P-1L)	ALKALINITY / TURBIDITY / W-CL-IC / W-COLOR / W-COND / W-F/ W-SO4-IC / W-TDS / W-TSS	ALKALINITY / TURBIDITY / W-CL-IC / W-COLOR / W-COND / W-F/ W-SO4-IC / W-TDS / W-TSS		Ice

All sample containers filled/preserved (including on ice) within **15 min** of first grab collection.

Preserve nutrients with sulfuric acid (H_2SO_4) before preserving metals with nitric acid (HNO_3) to avoid contamination.



SW SAMPLE DETAILS PAGE

C	heck Boxes for Each (Container Submitted	to Lab	Preservation
Parameter Suite	Lab Test Codes Trend Core	Lab Test Codes Status Core	Lab Test Codes ial Projects	(Must be completed within 15 min of sample collection)
Chlorophyll (BP-1L)	CHLSUITE-W	CHLSUITE-W		Ice
Nutrients (P-500ML)	W-NH3 / W-NO2NO3 / W-S-T-P / W-TKN / W-TOC	W-NH3 / W-NO2NO3 / W-S-T- W-TKN / W-TOC		\Box 2ML H ₂ SO ₄ \Box pH < 2 \Box Ice
Metals (P-500ML)	W-HARD / W-ICP / W-ICPMS	W-HARD / W-ICP / W-ICPMS	mistake	$_{\rm ML \ HNO_3}$ $\square \ pH < 2$ \square Ice
6.944 5.94 1	ALKALINITY / TURBIDITY / W-CL-IC / W-COLOR / W-COND / W-F/ W-SO4-IC / W-TDS / W-TSS	ALKALINITY / TURBIDITY / W-CL-IC / W-COLOR / W-COND / W-F/ W-SO4-IC / W-TDS / W-TSS	e e	Ice

If you make a mistake, document what occurred.

- Helps lab staff determine how to prepare and analyze samples.
- Helps data users understand if data are appropriate for inclusion in reporting/statistical analyses.



AFTER COLLECTING SAMPLES



Date Shipped:	d Networks - Chain of Custo Collected By (Agency Co					
Customer:AMBIENT	Sampler Names:					
	Lab Project ID (circle one):	STATUS	/ SW-TREND /			AB STATUS / B B B B B B Preservation B Preservation B INNON B II Comple Depth (m) Sp. Com INNON B II LINSON D III LINSON D III Simple Depth (m) D III B D III D III D III D IIII D IIII D IIII D IIII
(Place RQ Label Here)	•		D / BMAP			
	# Coolers Shipped:					
RQ	- Shipping Method (circle one)	FedEx	UPS /			
Project Name:	-		und / Hand Delivere	đ		
Instructions: • Print this form, affix labels to form cooler. Please return the original of this f • for each station & blank sampled. • Affix labels below for all samples	orm to the lab along with sar	mple inven	tory portion of field			
					Agency Code):	Lab F
					s:	_
					<u> </u>	s /
					nents:	
					ic Acid Lot #:	_
					Acid Lot #:	
					✓ Grab) pH (SU) Sample Depth (m) Sp.	Con
				0		
elinquished by (signature):	Date	ð:	Time:		ts of sample collection)	
THIS SECTION IS	TO BE COMPLETED BY 1	THE LABO	DRATORY		□ 2ML H ₂ SO ₄ □ pH < 2 □ Ice	
eceived/ Inspected By (signature):	,	Date:	Time:	ETZ	\Box 2ML HNO ₃ \Box pH < 2 \Box Ice	
1 7(0 /					□ Ice	
	Microbiology (P-250 ML or P-120 ML)	ECOLI-18-	T ECOLI-18-QT	-	□ Ice	\vdash
	P-120ML) Texins (7-125ML/80-250ML)		W-MCYST-AA/ W-SAXTN-MS	W-MCYST-AA/ W-SAXTN-MS	🗆 Ice	
	Molecular (QPCR-P-500ML)			PCR-BACR / PCR-DG3 / PCR-OFE	i 🗆 Ice	
	Tracers (BG-500ML)			PCR-GULL2 /PCR-H W-E8321-D1/ W-E8321-MS		
	BOD (P·1L) Pesticides			W-BOD-UN	□ Ice	
	(BG-500ML) Filtered Nutrient (P-125ML)			W-PO4-F	Ice Field Filtered w/ syringe Ice	-
						_
	Matrix: SEDI	Check Boxes f	Date Collected: or Each Container Submitte	d to Lab	Preservation	# B
	Parameter Suite Metals &	Lab Test Co Trend Cor	Status Core	Lab Test Cod Special Proje	cts of sample collection)	set I
	Nutrients (G-500ML)		S-ICPMS-TO/S-TKN/ S-TOC/S-TP		🗆 Ice	
		"heck Boyes f	Date Collected: or Each Container Submitte		ollected: DETZ / DC	CTZ #B
	Parameter Suit	e Lab Test Co Cor	fes Trend Lab Test Codes status Core	Lab Test Cod Special Project	es Preservation	# B set
	Macroinvert-SCI (PJ-21,)	MI-FW-QL	xc .	MI-FW-QLDC	Buffered Formalin (10%)	

- Doublecheck paperwork to note if it is filled out completely/correctly.
- Ensure ice and samples are in trash bags inside the coolers to prevent leaks.

Овмар

- Using paper copies of the field sheets?
 - Insert Chain of Custody forms in a ziptop bag and tape to the lid of the cooler.



AFTER COLLECTING SAMPLES SURVEY123 USERS

FLORIDA DEPARTMENT OF ENVIRON	MENTAL PROTECTION
Status & Trend Networks - Chain of Custody	y Form - July 2024 version

EDD File: http://floridadep.sharepoint.com/dear/Sample%i20Receiving/2024/2024-07-08-16_AMBIENT_COC_EDD_2024_07_08_CoreyPrell tot

Date Collected: 07/08/2024 Collected By (Agency Code): 8034

Sampler Names: Sampler Names

RQ-

Customer: AMBIENT

Lab Project ID: SW-TREND

RQ-2024-07-08-16

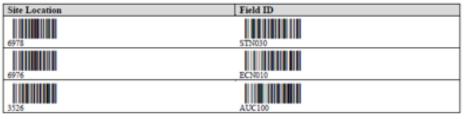
Project Name: TRST2407

Coolers Shipped: 2 Shipping Method: Hand Delivered

<u>Instructions</u>: Please return the original of this form to the lab along with sample inventory portion of field sheet for each station sampled.

Load digital labels into fields below for all samples & blanks submitted under this RQ for this collection date. Email completed documentation to: lab.receiving@floridadep.gov.

OR Print completed documentation and place in zipper bag taped to inside lid of cooler.



Date: 07/08/2024 Time: 16:00 ETZ

Relinquished By Signature: Relinquished By: Sampler Names and Signature

THIS SECTION IS TO BE COM	IPLETED BY THE LA	BORATORY	
Received/ Inspected By:	Date:	Time:	ETZ

and	RO-202	0			Call	anted Dr. (A	gency Code):			Lab Page	of
·											
Constant Billion		Name:				pler Names					
<u> </u>	Custom	er: <u>A</u>	MBIEN	T	Lab	Project ID:	O SW-TRI	end / C	STA1	rus / C) BMAI
Place Station ID Label Here							ents: Acid Lot #: cid Lot #:				
			,								
		F-FRESH		W-SU			✓ Grab				
Date Collec	ted	Time Col		D.O. (% S	SAT)	Temp (°C)	pH (SU)	Sample Dep	th (m) S	p. Cond. (un	nhos/cm
			ETZ CTZ								
C	heck Box	es for Each	Containe	r Submitted	to La	ab	F	reservation	_	# Bottles	Bottle
Parameter Suite		est Codes nd Core		'est Codes tus Core		ab Test Codes pecial Projects		ompleted within ample collectio		sent to Lab	Group
Chlorophyll (BP-1L)	CHLSU	ITE-W	CHLS	UITE-W			🗆 Ice		,		
Nutrients (P-500 ML)	W-NH3 W-NO2NO W-TKN/W	3/W-S-T-P/	W-NO2N W-NO2N	03/W-S-T-P/			2ML H ₂	SO4 □ pH < 2	□ Ice		1
Metals (P-500 ML)		D/W-ICP/		RD/W-ICP/			2ML HN	O ₃ □ pH < 2	□ Ice		1
Anion / Phys. Aggregate (P-1L)	ALKAL TURBIDIT W-COLOR	INITY / Y / W-CL-IC / / W-COND / 4-IC / W-TSS	TURBIDI W-COLO	LLINITY / TY / W-CL-IC / R / W-COND / O4-IC / W-TSS			□ Ice				
Microbiology (P-250 ML or P-120 ML)	ECOLI-		C ECOL				🗆 Ice]
Toxins (P-125ML/BG-250ML)				YST-AA/ XTN-MS		/-MCYST-AA/ W-SAXTN-MS	□ Ice]
Molecular (QPCR-P-500ML)					PCR-I	CR-BACR / DG3 / PCR-GFD / GULL2 /PCR-HF18	3 Ice				1
Tracers (BG-500ML)					U W	7-E8321-DI/ 7-E8321-MS	🗆 Ice				1
BOD (P-1L)						V-BOD-UN	□ Ice				1
Pesticides (BG-500ML)					U W	-PSNP-TQ	□ Ice				1
Filtered Nutrient (P-125 ML)					O W	7-PO4-F	Field Filte & 0.45 um	red w/ syringe PES filter	□ Ice		1
Matrix: SEDIM	IENT	Date Co	llected:		_	Time Coll	ected:		ETZ /	CTZ	
C	heck Box	es for Each	Containe	r Submitted	to La	ab	F	reservation		# Bottles	naula

- Submit your field sheets with Survey123.
- Email the Chain of Custody to the lab at <u>lab.receiving@florid</u> <u>adep.gov</u>.

Matrix: SEI	DIMENT	Date Collected:	Time Colle	cted: DETZ /	CTZ	
0	Check Boxes f	for Each Container Submitted	to Lab	Preservation	# Bottles	n.40.
Parameter Suite	Lab Test Co Trend Cor		Lab Test Codes Special Projects	(Must be completed within 15 mi of sample collection)	n sent to Lab	Bottle Group
Metals & Nutrients (G-500ML)		S-HG-TDA/S-ICP-TO/ S-ICPMS-TO/S-TKN/ S-TOC/S-TP		🗆 Ice		

Matrix: BIOL	OGICAL	Date Coll	lected:	Time Colle	cted: DETZ	CTZ	
C	heck Boxes	or Each C	ontainer Submitted	to Lab		# Bottles	Bottle
Parameter Suite	Co	e	Lab Test Codes Status Core	Lab Test Codes Special Projects	Preservation	sent to Lab	Group
Macroinvert-SCI (PJ-2L)	MI-FW-Q1	DC		MI-FW-QLDC	Buffered Formalin (10%)		
	ALGAL_II	2		ALGAL_ID	🗆 Ice		1



AFTER COLLECTING SAMPLES

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION Status & Trend Networks - Chain of Custody Form - July 2024 version

EDD File: https://floridadep.sharepoint.co 16_AMBIENT_COC_EDD_2024_07_08_	m/dear/Sample%20Receiving/2024/2024-07-08-		
Date Collected: 07/08/2024	Collected By (Agency Code): 8034		
Customer: AMBIENT	Sampler Names: Sampler Names		
RQ- RO-2024-07-08-16	Lab Project ID: SW-TREND	Electronic Data	
Project Name: TRST2407	# Coolers Shipped: 2 Shippin	Deliverable (EDD)	link
Instructions: Please return the ori sheet for each station sampled.	ginal of this form to the lab along with s	is at the top of your	ſ
Email completed documentation to:	w for all samples & blanks submitted un lab.receiving@floridadep.gov. and place in zipper bag taped to inside lid	Chain of Custody.	
Site Location	Field ID		
			1

Received/ Inspected By:		Date:	Time:	ETZ
THIS	SECTION IS TO BE COMPLETED	BY THE LABORA	TORY	
Relinquished By Signature: Relinquished By:	Sampler Names and Signature	_		
		Date: 07/08/2024	Time: 16:00 ETZ	
3526	AUCIO			
6976	ECN010			
6978	STN030			

- Beginning July 2024, Status and Trends Custody sheets include a link to the Electronic Data Deliverable (EDD) that the lab uses during sample login.
- Need to make a correction?
 - $\circ~$ Do NOT make the edit on the PDF.
 - Instead, please submit a corrected Survey123 response.

If the data is no longer in your Survey123 sent box, email Stephanie and Tommy A. the corrections.



DOCUMENTATION

- Survey123 Field Sheets.
- Owner info discrepancies not noted on Survey123 (Status).
- Photos.
- QA Report.

- All logs:
 - \circ Calibration.
 - o Depth.
 - Temperature.
 - Cleaning logs.

Let the project manager know when all files are complete and available for review.

THANK YOU

DEPARIM

MENTAL PRO

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Z

Meghan Maly Division of Environmental Assessment and Restoration Florida Department of Environmental Protection

> Contact Information 850-245-8232 Meghan.Maly@floridadep.gov