STATUS AND TREND QUALITY ASSURANCE/ QUALITY CONTROL

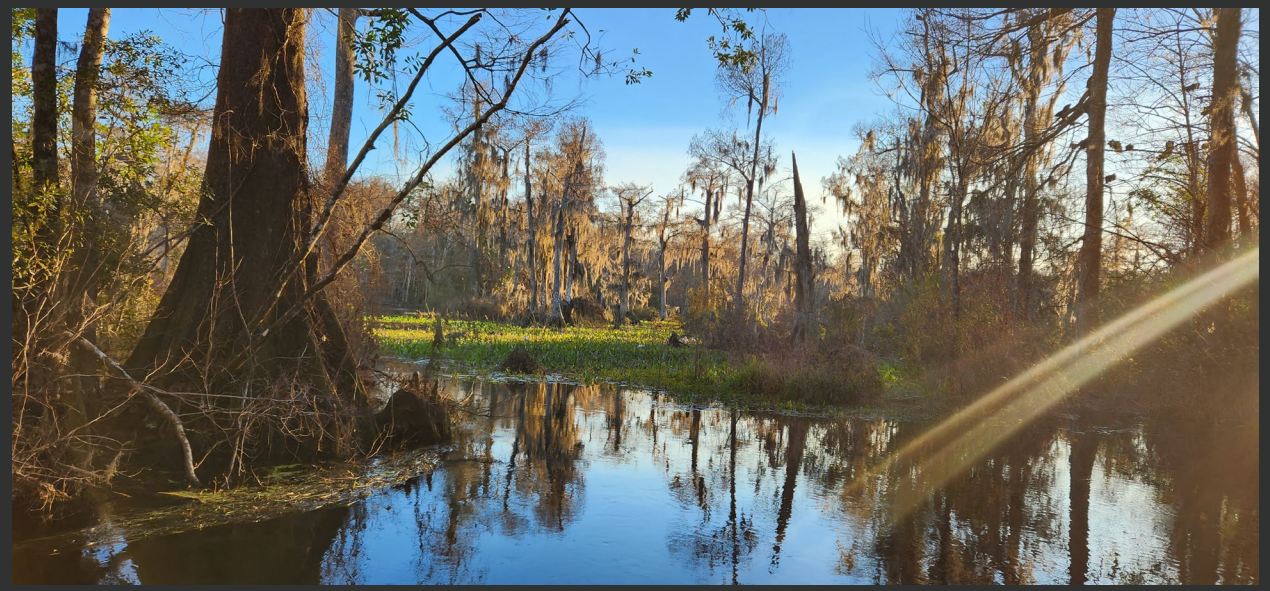
Rachael Dragon
Division of Environmental Assessment and Restoration/
Water Quality Monitoring Program
Florida Department of Environmental Protection

Tallahassee, FL | Nov. 6, 2024

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION

Presentation Topics

- Documentation - Sampling Manual Section 12.
- Field Collected Blanks - Sampling Manual Section 14.
- Field Audits - Sampling Manual Section 14.



Wakulla Springs

DOCUMENTATION

- Provides a complete history of any data collected from project initiation to completion.
- Includes **all** associated activities.
- Documentation should support a complete and independent reconstruction of the sampling event.

Source: Pexels

GENERAL DOCUMENTATION QA

- Do not leave spaces blank!
- Corrections: single line with initials.

PARAMETER	VALUE	QUALIFIER(S)	RESULT COMMENT
Sample Collection Depth (m)	0.3		
Secchi Depth (m)	~~0.6~~ 0.5 (SS)		
Total Depth (m)	5.7		
Temp (°C)	24.7		

- Use the “Comments” sections.

  If in doubt, write it down!

DOCUMENTATION RETENTION

- Status and Trend “projects” are ongoing. All records must be kept indefinitely.
- Retain paper copies – scan and distribute as needed.

(Transfer information from paper field sheets to Survey123.)

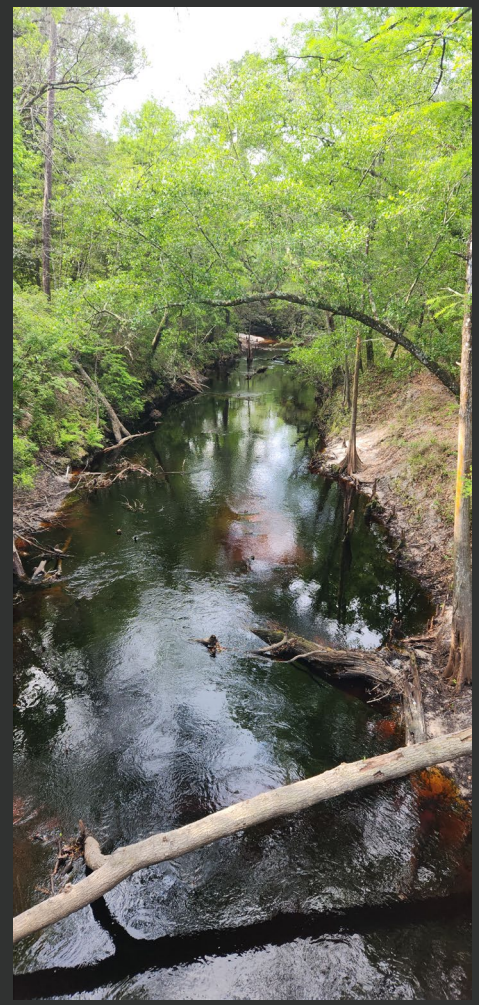
DOCUMENTATION RETENTION

For electronic documents generated when submitting data to Survey123:

- Transfer Field Sheets and Custody Sheets from Sharepoint to a more permanent storage space.
- If edits/signatures were added, remember to transfer edited version of document.

REQUIRED DOCUMENTATION
FOR ALL STATUS & TREND PROJECTS

- QA Report
- Field Sheets
- Custody Sheets
- Calibration Log(s)
- Equipment Cleaning Log
- Equipment Maintenance Log
- Standards / Reagents Log



Sopchoppy River

QUALITY ASSURANCE (QA) REPORT

- **Purpose.**
  - Summarize QA activities for each project.
  - Report is used by Project Manager and Data Reviewers.
- **Requirements.**
  - Number of samples and blanks collected per project.
  - If samples collected ≠ samples scheduled, indicate why.
  - Indicate if any audits were conducted.
  - Describe any problems/QA issues.
  - Coordination/assistance received (e.g., multiple ROCs collecting samples for a single project).

- QA Report Template.
- Figure 39 Sampling Manual, page 174.

Quality Assurance Report for Status Network and Trend Network Projects

Instructions: Please include a completed report with each set of project paperwork sent to your Project Manager in the Watershed Monitoring Section (WMS). Multiple projects can be included in the same report if paperwork is being submitted at the same time (e.g. Surface Water and Ground Water Trend from the same month).

Name of Person Completing Report: _____ Date: _____

Project	Number of Samples Scheduled	Number of Samples Collected*	Number of Field Blanks Collected	Number of Equipment Blanks Collected

*If number of samples collected ≠ number of samples scheduled, please explain:

Were any internal audits conducted by your team during these projects? Y / N

Were any external audits conducted by WMS or other entities during these projects? Y / N

If audits were conducted, list project(s) and date(s): _____

Describe any cross-sampling or other collaborative efforts that occurred during these projects:

Describe any quality assurance issues, corrective actions, or other notable circumstances that affect data collected for these projects (e.g. equipment malfunctions, calibration verification failures, deviations from established sampling procedures):

REQUIRED DOCUMENTATION
FOR ALL STATUS & TREND PROJECTS

✓QA Report

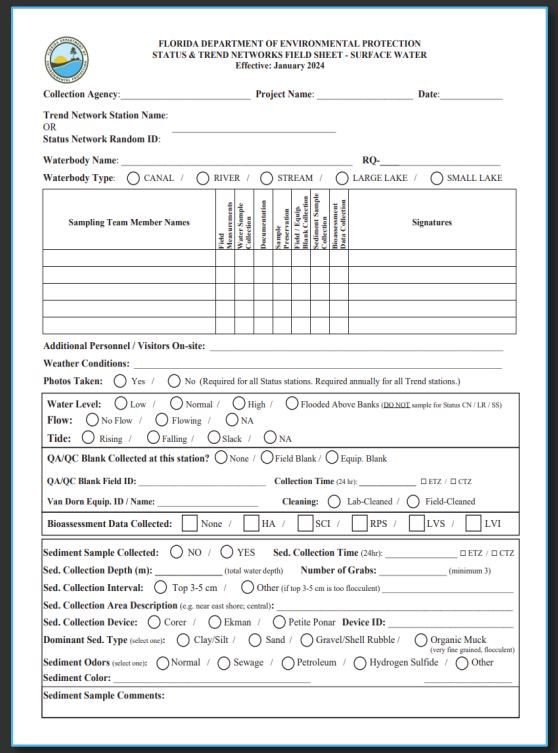
- Field Sheets
- Custody Sheets
- Calibration Log(s)
- Equipment Cleaning Log
- Equipment Maintenance Log
- Standards / Reagents Log

Rock Springs / Kelly Park

FIELD SHEETS

USE THE MOST RECENT VERSIONS

Oct 2023 Groundwater
Jan 2024 Surface Water



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: ◯ CANAL / ◯ RIVER / ◯ STREAM / ◯ LARGE LAKE / ◯ SMALL LAKE

Sampling Team Member Names	Field Measurements	Water Sample Collection	Documentation	Sample Preservation	Field / Equip. Blank Collection	Grab Sample Collection	Bioassessment Data Collection	Signatures

Additional Personnel / Visitors On-site: _____

Weather Conditions: _____

Photos Taken: ◯ Yes / ◯ No (Required for all Status stations. Required annually for all Trend stations.)

Water Level: ◯ Low / ◯ Normal / ◯ High / ◯ Flooded Above Banks (DO NOT sample for Status CN / LR / SS)
Flow: ◯ No Flow / ◯ Flowing / ◯ NA
Tide: ◯ Rising / ◯ Falling / ◯ Slack / ◯ NA

QA/QC Blank Collected at this station? ◯ None / ◯ Field Blank / ◯ Equip. Blank

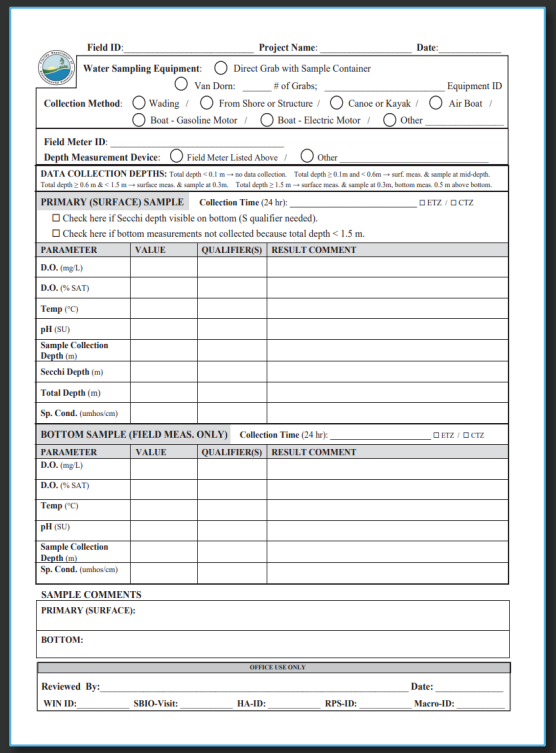
QA/QC Blank Field ID: _____ Collection Time (24 hr): _____ ☐ ETZ / ☐ CTZ

Van Dorn Equip. ID / Name: _____ Cleaning: ◯ Lab-Cleaned / ◯ Field-Cleaned

Bioassessment Data Collected: ☐ None / ☐ HA / ☐ SCI / ☐ RPS / ☐ LVS / ☐ LVI

Sediment Sample Collected: ◯ NO / ◯ YES Sed. Collection Time (24hr): _____ ☐ ETZ / ☐ CTZ
Sed. Collection Depth (m): _____ (total water depth) Number of Grabs: _____ (minimum 3)
Sed. Collection Interval: ◯ Top 3-5 cm / ◯ Other (if top 3-5 cm is too flocculent) _____
Sed. Collection Area Description (e.g. near east shore; central): _____
Sed. Collection Device: ◯ Corer / ◯ Ekman / ◯ Petite Ponar Device ID: _____
Dominant Sed. Type (select one): ◯ Clay/Silt / ◯ Sand / ◯ Gravel/Shell Rubble / ◯ Organic Muck (very fine grained, flocculent)
Sediment Odors (select one): ◯ Normal / ◯ Sewage / ◯ Petroleum / ◯ Hydrogen Sulfide / ◯ Other
Sediment Color: _____

Sediment Sample Comments:



Field ID: _____ Project Name: _____ Date: _____

Water Sampling Equipment: ◯ Direct Grab with Sample Container
◯ Van Dorn: _____ # of Grabs; _____ Equipment ID

Collection Method: ◯ Wading / ◯ From Shore or Structure / ◯ Canoe or Kayak / ◯ Air Boat / ◯ Boat - Gasoline Motor / ◯ Boat - Electric Motor / ◯ Other _____

Field Meter ID: _____
Depth Measurement Device: ◯ Field Meter Listed Above / ◯ Other _____

DATA COLLECTION DEPTHS: Total depth < 0.1 m → no data collection. Total depth ≥ 0.1m and < 0.6m → surf. meas. & sample at mid-depth. Total depth ≥ 0.6 m & < 1.5 m → surface meas. & sample at 0.3m. Total depth ≥ 1.5 m → surface meas. & sample at 0.3m, bottom meas. 0.5 m above bottom.

PRIMARY (SURFACE) SAMPLE Collection Time (24 hr): _____ ☐ ETZ / ☐ CTZ
☐ Check here if Secchi depth visible on bottom (S qualifier needed).
☐ Check here if bottom measurements not collected because total depth < 1.5 m.

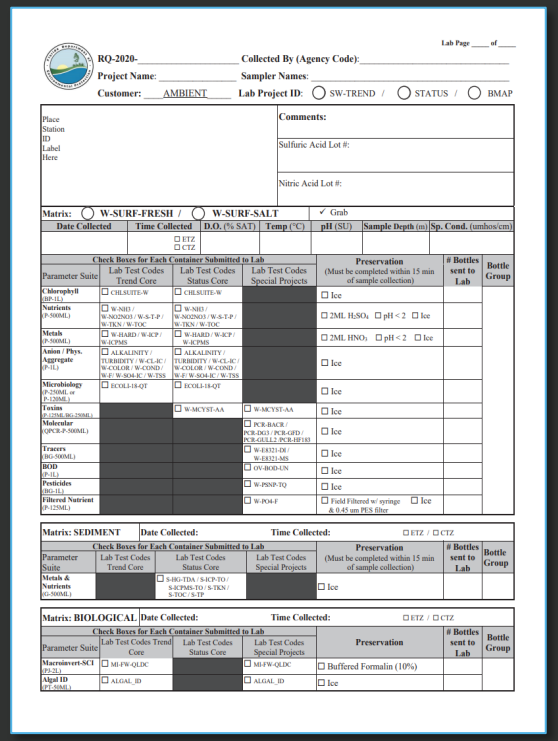
PARAMETER	VALUE	QUALIFIER(S)	RESULT COMMENT
D.O. (mg/L)			
D.O. (% SAT)			
Temp (°C)			
pH (SU)			
Sample Collection Depth (m)			
Secchi Depth (m)			
Total Depth (m)			
Sp. Cond. (umhos/cm)			

BOTTOM SAMPLE (FIELD MEAS. ONLY) Collection Time (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)			

SAMPLE COMMENTS
PRIMARY (SURFACE):
BOTTOM:

OFFICE USE ONLY
Reviewed By: _____ Date: _____
WIN ID: _____ SBIO-Visit: _____ HA-ID: _____ RPS-ID: _____ Macro-ID: _____



Lab Page ____ of ____

RQ-2020-_____ Collected By (Agency Code): _____
Project Name: _____ Sampler Names: _____
Customer: AMBIENT Lab Project ID: ◯ SW-TREND / ◯ STATUS / ◯ BMAP

Place Station ID Label Here

Comments:
Sulfuric Acid Lot #:
Nitric Acid Lot #:

Matrix: ◯ W-SURF-FRESH / ◯ W-SURF-SALT ✓ Grab

Date Collected	Time Collected	D.O. (% SAT)	Temp (°C)	pH (SU)	Sample Depth (m)	Sp. Cond. (umhos/cm)
	☐ ETZ ☐ CTZ					

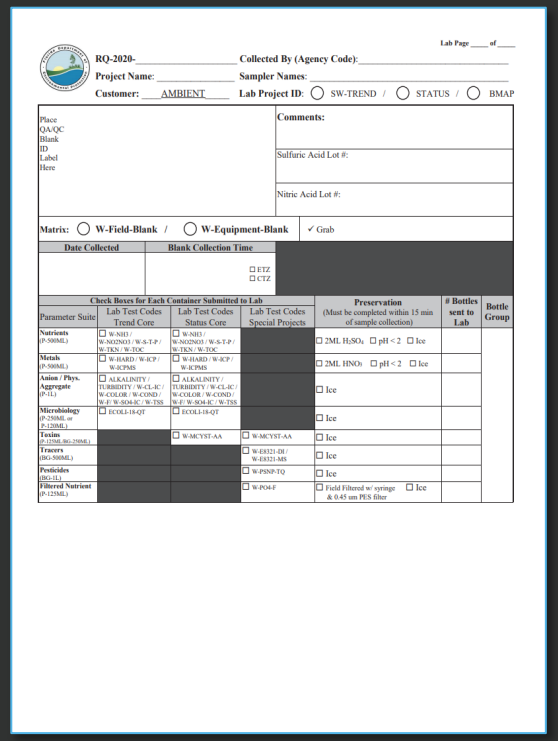
Check Boxes for Each Container Submitted to Lab						
Parameter Suite	Lab Test Codes Trend Core	Lab Test Codes Status Core	Lab Test Codes Special Projects	Preservation (Must be completed within 15 min of sample collection)	# Bottles sent to Lab	Bottle Group
Chlorophyll (BP-1L)	☐ CHLSUITE-W	☐ CHLSUITE-W		☐ 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		☐ 2ML H_2SO_4 ☐ pH < 2 ☐ Ice		
Metals (P-500ML)	☐ W-HARD / W-ICP / W-ICPMS	☐ W-HARD / W-ICP / W-ICPMS		☐ 2ML HNO_3 ☐ pH < 2 ☐ Ice		
Anion / Phys. Aggregate (P-1L)	☐ ALKALINITY / TURBIDITY / W-CL-IC / W-COLOR / W-COND / W-F/ W-SO4-IC / W-TSS	☐ ALKALINITY / TURBIDITY / W-CL-IC / W-COLOR / W-COND / W-F/ W-SO4-IC / W-TSS		☐ Ice		
Microbiology (P-250ML or P-120ML)	☐ ECOLI-18-QT	☐ ECOLI-18-QT		☐ Ice		
Toxins (P-125ML/BG-250ML)		☐ W-MCYST-AA	☐ W-MCYST-AA	☐ Ice		
Molecular (QPCR-P-500ML)			☐ PCR-BACR / PCR-DG3 / PCR-GFD / PCR-GULL2 /PCR-HF183	☐ Ice		
Tracers (BG-500ML)			☐ W-E8321-DI / W-E8321-MS	☐ Ice		
BOD (P-1L)			☐ OV-BOD-UN	☐ Ice		
Pesticides (BG-1L)			☐ W-PSNP-TQ	☐ Ice		
Filtered Nutrient (P-125ML)			☐ W-PO4-F	☐ Field Filtered w/ syringe ☐ Ice & 0.45 um PES filter		

Matrix: SEDIMENT Date Collected: Time Collected: ☐ ETZ / ☐ CTZ

Check Boxes for Each Container Submitted to Lab						
Parameter Suite	Lab Test Codes Trend Core	Lab Test Codes Status Core	Lab Test Codes Special Projects	Preservation (Must be completed within 15 min of sample collection)	# Bottles sent to Lab	Bottle Group
Metals & Nutrients (BG-500ML)		☐ S-HG-TDA / S-ICP-TO / S-ICPMS-TO / S-TKN / S-TOC / S-TP		☐ Ice		

Matrix: BIOLOGICAL Date Collected: Time Collected: ☐ ETZ / ☐ CTZ

Check Boxes for Each Container Submitted to Lab						
Parameter Suite	Lab Test Codes Trend Core	Lab Test Codes Status Core	Lab Test Codes Special Projects	Preservation	# Bottles sent to Lab	Bottle Group
Macroinvert-SCI (P3-2L)	☐ MI-FW-QLDC		☐ MI-FW-QLDC	☐ Buffered Formalin (10%)		
Algal ID (PT-500ML)	☐ ALGAL_ID		☐ ALGAL_ID	☐ Ice		



Lab Page ____ of ____

RQ-2020-_____ Collected By (Agency Code): _____
Project Name: _____ Sampler Names: _____
Customer: AMBIENT Lab Project ID: ◯ SW-TREND / ◯ STATUS / ◯ BMAP

Place QA/QC Blank ID Label Here

Comments:
Sulfuric Acid Lot #:
Nitric Acid Lot #:

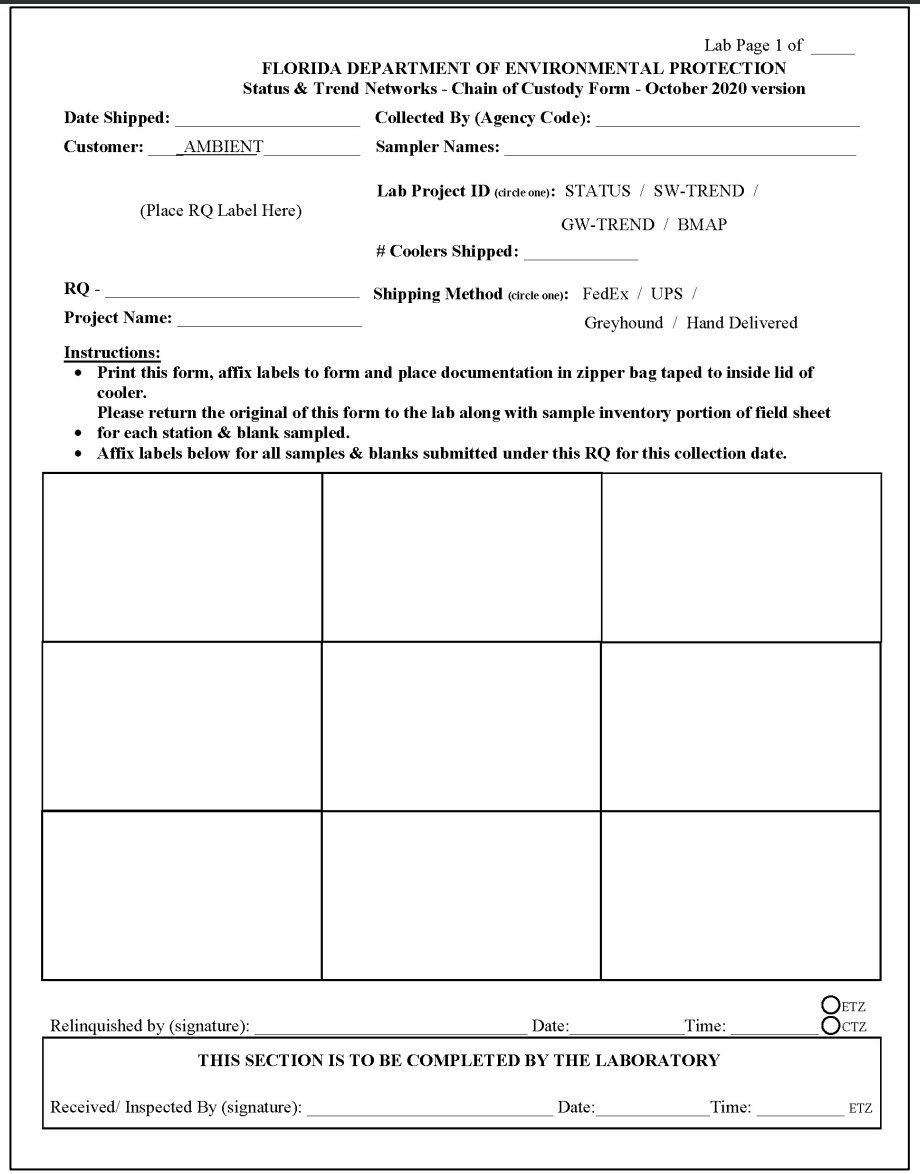
Matrix: ◯ W-Field-Blank / ◯ W-Equipment-Blank ✓ Grab

Date Collected	Blank Collection Time
	☐ ETZ ☐ CTZ

Check Boxes for Each Container Submitted to Lab						
Parameter Suite	Lab Test Codes Trend Core	Lab Test Codes Status Core	Lab Test Codes Special Projects	Preservation (Must be completed within 15 min of sample collection)	# Bottles sent to Lab	Bottle Group
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		☐ 2ML H_2SO_4 ☐ pH < 2 ☐ Ice		
Metals (P-500ML)	☐ W-HARD / W-ICP / W-ICPMS	☐ W-HARD / W-ICP / W-ICPMS		☐ 2ML HNO_3 ☐ pH < 2 ☐ Ice		
Anion / Phys. Aggregate (P-1L)	☐ ALKALINITY / TURBIDITY / W-CL-IC / W-COLOR / W-COND / W-F/ W-SO4-IC / W-TSS	☐ ALKALINITY / TURBIDITY / W-CL-IC / W-COLOR / W-COND / W-F/ W-SO4-IC / W-TSS		☐ Ice		
Microbiology (P-250ML or P-120ML)	☐ ECOLI-18-QT	☐ ECOLI-18-QT		☐ Ice		
Toxins (P-125ML/BG-250ML)		☐ W-MCYST-AA	☐ W-MCYST-AA	☐ Ice		
Tracers (BG-500ML)			☐ W-E8321-DI / W-E8321-MS	☐ Ice		
Pesticides (BG-1L)			☐ W-PSNP-TQ	☐ Ice		
Filtered Nutrient (P-125ML)			☐ W-PO4-F	☐ Field Filtered w/ syringe ☐ Ice & 0.45 um PES filter		

CUSTODY SHEET COVER PAGE

Use the most recent version October 2020.



Lab Page 1 of _____

FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION
Status & Trend Networks - Chain of Custody Form - October 2020 version

Date Shipped: _____ **Collected By (Agency Code):** _____

Customer: ___AMBIENT_____ **Sampler Names:** _____

(Place RQ Label Here)

Lab Project ID (circle one): STATUS / SW-TREND / GW-TREND / BMAP

 # Coolers Shipped: _____

RQ - _____ **Shipping Method** (circle one): FedEx / UPS / Greyhound / Hand Delivered

Project Name: _____

Instructions:

- **Print this form, affix labels to form and place documentation in zipper bag taped to inside lid of cooler.**
  Please return the original of this form to the lab along with sample inventory portion of field sheet
- **for each station & blank sampled.**
- **Affix labels below for all samples & blanks submitted under this RQ for this collection date.**

Relinquished by (signature): _____ Date: _____ Time: _____ ○ETZ ○CTZ

THIS SECTION IS TO BE COMPLETED BY THE LABORATORY

Received/ Inspected By (signature): _____ Date: _____ Time: _____ ETZ

REQUIRED DOCUMENTATION
FOR ALL STATUS & TREND PROJECTS

- ✓QA Report
- ✓Field Sheets
- ✓Custody Sheets
- ▪Calibration Log(s)
- ▪Equipment Cleaning Log
- ▪Equipment Maintenance Log
- ▪Standards / Reagents Log

Apalachicola National Forest

Field Meter Calibration Log

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: _____ RQ- _____ Project: _____

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 _____

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.											P / F	L / F
ICV											P / F	L / F
CCV											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 µmhos/cm	Meter Reading µmhos/cm	Pass / Fail	Lab / Field
Calibr.								P / F	L / F
ICV								P / F	L / F
CCV								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	Temp °C	Meter reading SU	mV	Pass / Fail	Lab / Field
Calibr.						7.				P / F	L / F
Calibr.						4.				P / F	L / F
Calibr.						10.				P / F	L / F
ICV										P / F	L / F
CCV										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)

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: _____; 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						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:

Form effective August 1, 2018

Turbidity Calibration Log
(only needed for groundwater projects)

Turbidity Calibration Log (DEP SOPs FT1000 & FT1600)
Regional Operations Centers

Meter ID:_____ Date of Last Calibration:_____ Project Name:_____

Quarterly Calibration

Sampler Name:_____ Date:_____ Time:_____ ETZ / CTZ *(circle one)*

Standard Value *(Use Primary Formazin Standards)*	Exp. Date	Lot #	Type of Information Displayed During Calibraiton? *(circle one)*	Value Displayed NTU	Calibration Pass / Fail *(circle one)*
NTU			Meter Reading / Next Value		P / F
NTU			Meter Reading / Next Value		P / F
NTU			Meter Reading / Next Value		P / F
NTU			Meter Reading / Next Value		P / F

Initial Calibration Verification (ICV) *(Only perform ICV immediately after quarterly calibr. Do not use < 0.1 NTU standard for ICV.)*

Sampler Name:_____ Date:_____ Time:_____ ETZ / CTZ *(circle one)*

Standard Value *(Use A Primary Formazin Standard)*	Exp. Date	Lot #	Meter Reading NTU	Pass / Fail *(circle one)*
NTU				P / F

Secondary Gel Standard Quarterly Verification *(perform gel standard verificaiton immediately after quarterly calib. and ICV)*

Sampler Name:_____ Date:_____ Time:_____ ETZ / CTZ *(circle one)*

Standard Value Range NTU	Previous Value Assigned NTU	Exp. Date	Lot #	Meter Reading NTU *(new value assigned)*	Acceptable Range, NTU *(Calculate using new value assigned & acceptance criteria*)*
0 – 10					
10 – 100					
100 - 1000					

Daily Continuing Calibration Verification (CCV) *(required every day that meter is used)*

Date	Time (24hr) CT-ET	Sampler Name	Standard Type *(circle one)*	Standard Value NTU	Exp. Date	Lot #	Meter Reading NTU	Pass / Fail
			Formazin / Gel					P / F
			Formazin / Gel					P / F
			Formazin / Gel					P / F
			Formazin / Gel					P / F
			Formazin / Gel					P / F
			Formazin / Gel					P / F
			Formazin / Gel					P / F
			Formazin / Gel					P / F
			Formazin / Gel					P / F

Comments:

*Acceptance Criteria: 0.1-10 NTU → ± 10 %; 11-40 NTU → ± 8 %; 41-100 NTU → ± 6.5 %; >100 NTU → ± 5 %;
Acceptable ranges for common standards: 20 NTU (18.4 - 21.6 NTU); 100 NTU (93.5 – 106.5 NTU); 800 NTU (760 - 840 NTU)

Form Effective October 1, 2017

QUARTERLY TEMPERATURE VERIFICATION LOG

Quarterly Temperature Verification Log - DEP Regional Operation Centers

DEP SOP FT 1400. Acceptance Criteria for Temp. ± 0.5°C.

Record all digits displayed for temperature readings. Do not round before reporting measurements.

CCV = Continuing Calibration Verification. Target temperature for cold CCV is 0 - 10 (°C). Target temperature for hot CCV is 30 - 40 (°C).

Time Zone (circle one): **ETZ / CTZ**

Field Meter ID	Field Meter Serial Number	NIST Reference Device ID	Activity Date	Cold CCV Time	Cold CCV Field Meter Temp (°C)	Cold CCV NIST Temp (°C)	Cold CCV Result (circle one)	Hot CCV Time	Hot CCV Field Meter Temp (°C)	Hot CCV NIST Temp (°C)	Hot CCV Result (circle one)	Activity Performed By (Staff Name)	Comments
							P / F				P / F		
							P / F				P / F		
							P / F				P / F		
							P / F				P / F		
							P / F				P / F		
							P / F				P / F		
							P / F				P / F		
							P / F				P / F		

Form effective date: September 6, 2024

QUARTERLY DEPTH VERIFICATION LOG

ONLY NEEDED FOR SURFACE WATER PROJECTS

Depth Verification
Regional Operation Centers

SOP - S&T Sampling Manual and ROC Training Manual.
Report two decimal places for electronic devices. Report one decimal place for manual devices.
Numbers ≤4, are rounded down; numbers ≥ 5 are rounded up.

QUARTERLY VERIFICATION OF ELECTRONIC DEVICES (SONDE, SONAR DEVICE, ETC.)

Meter / Device ID#:_____ **Date of Last Verification:** _____

Date: _____ **Time:** _____ **ETZ / CTZ** **Verification Location:** _____

Person Performing Verification: _____

Reference Device: Graduated Bucket / Metal Measuring Tape / Meter Stick / Other _____

Depth measurements: Reference Device: _____ **m ; Device Being Tested:** _____ **m**

Result: Pass / Fail (acceptance Criteria 10%)

6 MONTH VERIFICATION OF MANUAL DEVICES (SECCHI DISK, WEIGHTED LINE, ETC.)

Secchi/Weighted Line ID#:_____ **Date of Last Verification:** _____

Date: _____ **Time:** _____ **ETZ / CTZ** **Verification Location:** Lab

Person Performing Verification: _____

Reference Device: Metal Measuring Tape / Meter Stick / Other _____

Incremental markings of 0.1 m checked: YES / NO **Result: Pass / Fail** (acceptable criteria 10%)

Total length of line (up to anticipated depth encountered in field) checked: YES / NO

Total Length: indicated by line markings _____ **m ; measured by reference device** _____ **m**

Result: Pass / Fail (acceptable criteria of 5%) **Markings redone: YES / NO**

EQUIPMENT CLEANING LOG

Equipment Cleaning Log
Regional Operation Centers

Equipment	Unique ID	Date	Time (24 hr)	Location (Lab / Field)	Liquinox Wash (Y/N)	Luminox Wash (Y/N)	Tap Water Rinse (Y/N)	10% HCl Rinse (Y/N)	DI Water Rinse X3 (Y/N)	Other (Describe)	Sampler Name
Submersible pump	Diver	10/31/22	0430	Lab	Y	N	Y	N	Y		K. Collins
Van Dorn	#1	4/12/19	1320	Lab	N	Y	Y	Y	Y		R. Dragon

- For all equipment and supplies document all cleaning procedures.
  - If groundwater pump tubing is changed before each site, document on the cleaning log.
- Cleaning logs can be found here Watershed Monitoring Information Center.
- Contracted sampling teams may use their own cleaning logs as long as all the information is recorded.

REQUIRED DOCUMENTATION
FOR ALL STATUS & TREND PROJECTS

- ✓QA Report
- ✓Field Sheets
- ✓Custody Sheets
- ✓Calibration Log(s)
- ✓Equipment Cleaning Log
- **▪Equipment Maintenance Log**
- **▪Standards / Reagents Log**

Hammock Sink at Leon Sinks Geological Area, FL photo taken by Rachael Dragon, DEP

EQUIPMENT MAINTENANCE LOG

Equipment Maintenance Log
Regional Operation Centers

Equipment	Serial #	Unique ID #	Date	Time	Procedure	Reason	Comments	Sampler Name
YSI	06H1520 AA	Betty Boop	6/19/15	10:42	Replace DO membrane	Routine maintenance		Natalie Ayala
Ekman sediment dredge		1	3/3/16	10:43	Changed cables connecting jaws	Old cables failed		Thomas Wippick
Exo 3	19J105467	Sea Cow	1/25/23	11:52	Replaced Conductivity/Temp Probe	Replace broken probe		Victoria Schwartz

- Specific piece(s) of equipment.
- Name of person performing maintenance.
- Date.
- Procedure.

https://floridadep.sharepoint.com/dear/wqap/Lists/Equipment%20Maintenance%20Log/AllItems.aspx

(Figure 26 - Sampling Manual)

STANDARDS LOG

Standard and Reagent Log
Regional Operation Centers

Standard/ Reagent	Manufacturer	Quantity / Concentration / Grade	Lot #	Date of Receipt	Expiration Date	Date Opened & Sampler Name	Location	Date discarded or verification if used passed expiration date
pH Buffer	Exaxol	20L/pH 10	220608A	6/20/2022	12/23	12/1/2022 GS	SW ROC	Discarded 12/1/2023
Conductivity Standard	Fisher	20L /Conductivity 1000	212209B	7/10/2022	1/24			

- Manufacturer.
- Standard value.
- Lot number.
- Date received.
- Expiration date.
- Date opened/initials.

https://floridadep.sharepoint.com/dear/wqap/Lists/Standard%20and%20Reagent%20Log/AllItems.aspx

(Figure 25 - Sampling Manual)

DOCUMENTATION QA
DATA QUALIFIERS

- Add data qualifiers when necessary (per Chapter 62-160, Florida Administrative Code (F.A.C.)).
  - Document on field sheets (Survey123).
  - Always indicate which parameter qualifiers are associated with.
  - Always add a comment describing why qualifier is needed. (Required per standard operating procedures (SOPs)).

(Sampling Manual - Table 7, p. 134)

DOCUMENTATION QA

DATA QUALIFIERS

Common data qualifiers added by samplers.

* All Qualifiers need to have a comment.

“S” - Secchi disk visible on bottom.

“J” - Estimated value with detailed comment.

- Field meter verification failure or bracketing problem.
- Interference present that may reduce measurement accuracy.
- Deviation from standard field protocols.

“O” - Measurement scheduled but not performed.

“?” - Data are rejected and should not be used.

FIELD BLANKS & EQUIPMENT BLANKS

- Help identify contamination in the sampling system.
- QA Officer tracks results.
- If analytes of interest are detected (value ≥ MDL) in field collected blanks, associated data will be “G” qualified if the value in the blank is > 10% of the value in the sample.

FIELD BLANKS AND EQUIPMENT BLANKS

- Collected, preserved and submitted in same manner as an actual sample.
- Analyte-free (DI) water.
- Filled **on-site.**
- One Blank collected for every five samples (20% frequency).
- Collect blanks to be representative of the sample collection.

FIELD BLANKS

- Required when **NO** equipment used.

  (SW direct grab samples and GW wells with in-place plumbing)
- Fill sample bottles directly from DI water carboy.
- Collected on-site, in the field!

EQUIPMENT BLANKS

- Required if **any** equipment is used to collect samples.
- For each project, at least one equipment blank is required for each piece of equipment used.
- DI water from carboy is passed through equipment. Sample bottles filled with DI water from equipment.

EQUIPMENT BLANKS

Two types:

1. **Pre-cleaned equipment blank.**
   - Equipment cleaned in-house prior to sampling.
   - Blank is collected prior to sampling.
2. **Field-cleaned equipment blank.**
   - Equipment cleaned in field.
   - Blank is collected after sampling at a site.

BOTH are collected on-site in the field!

EQUIPMENT BLANKS

Document Blank Collection Information on Field Sheets (surface Water and groundwater)

- Sample type — Field Blank or Equipment Blank.

  If Equipment Blank:

  - Field-cleaned or lab-cleaned.
  - Equipment ID.
- Blank collection time (must be different than sample collection time for water/sediments/invert samples).
- Person responsible for collecting blank.

REMINDER FOR SHARED PROJECTS

- If multiple DEP ROCs or WMD field offices are collecting data for a single project, each office must collect at least one blank for that project.
    - Please coordinate blank collection when performing combined sampling events.

DI SOURCE BLANKS

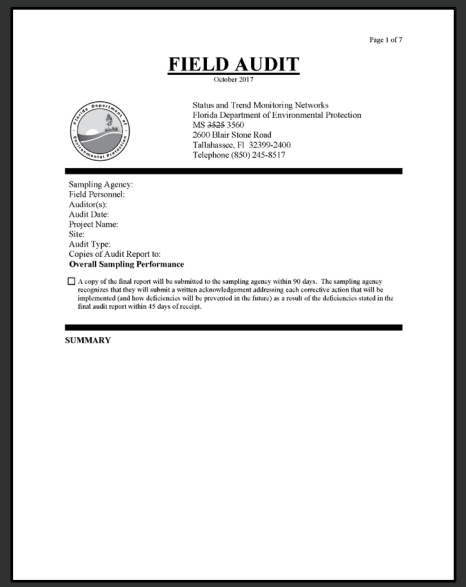
- Not a field collected blank.
- Scheduled as needed to help investigate detections in field blanks and equipment blanks.
- Collected at field lab/office, directly from DI source used to fill large carboys.
- Do not use any carboys or equipment.

FIELD AUDITS

- WMS QA Officer conducts field audit for each sample collection agency at least once every 18 months.
- Audits are designed to promote consistency throughout the state.
- Managers or team leads are encouraged to conduct internal audits.

FIELD AUDITS

- Current version of Field Audit Form is October 2021 (Figure 41 – page 176).
  - Narrative summary.
  - Checklist of items observed/discussed.
  - Audit summary table.



Page 1 of 7

FIELD AUDIT

October 2017

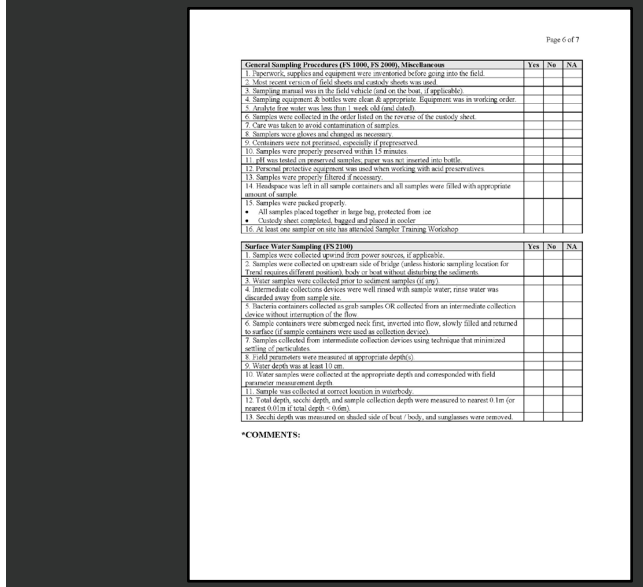
Status and Trend Monitoring Networks
Florida Department of Environmental Protection
MS ~~3525~~ 3560
2600 Blair Stone Road
Tallahassee, Fl 32399-2400
Telephone (850) 245-8517

Sampling Agency:
Field Personnel:
Auditor(s):
Audit Date:
Project Name:
Site:
Audit Type:
Copies of Audit Report to:

Overall Sampling Performance

☐ A copy of the final report will be submitted to the sampling agency within 90 days. The sampling agency recognizes that they will submit a written acknowledgement addressing each corrective action that will be implemented (and how deficiencies will be prevented in the future) as a result of the deficiencies stated in the final audit report within 45 days of receipt.

SUMMARY

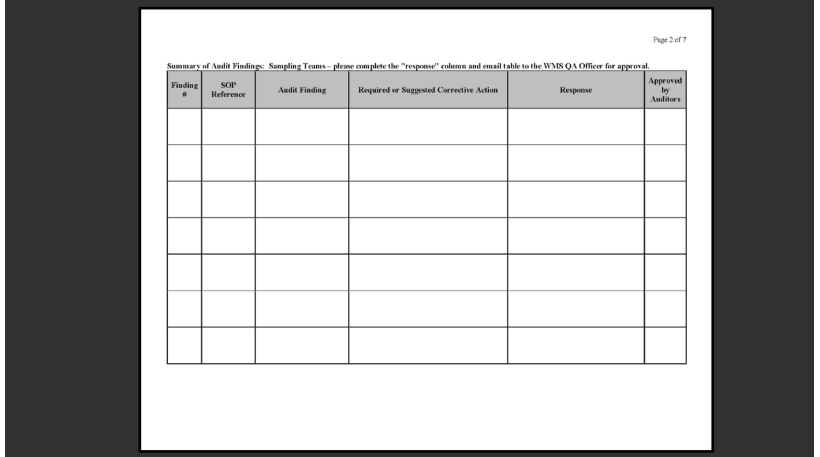


Page 6 of 7

General Sampling Procedures (FS 1000, FS 2000), Miscellaneous	Yes	No	NA
1. Paperwork, supplies and equipment were inventoried before going into the field.			
2. Most recent version of field sheets and custody sheets was used.			
3. Sampling manual was in the field vehicle (and on the boat, if applicable).			
4. Sampling equipment & bottles were clean & appropriate. Equipment was in working order.			
5. Analyte free water was less than 1 week old (and dated)			
6. Samples were collected in the order listed on the reverse of the custody sheet.			
7. Care was taken to avoid contamination of samples.			
8. Samplers were gloves and changed as necessary.			
9. Containers were not prerinsed, especially if preperserved.			
10. Samples were properly preserved within 15 minutes.			
11. pH was tested on preserved samples; paper was not inserted into bottle.			
12. Personal protective equipment was used when working with acid preservatives.			
13. Samples were properly filtered if necessary.			
14. Headspace was left in all sample containers and all samples were filled with appropriate amount of sample.			
15. Samples were packed properly. • All samples placed together in large bag, protected from ice • Custody sheet completed, bagged and placed in cooler			
16. At least one sampler on site has attended Sampler Training Workshop			

Surface Water Sampling (FS 2100)	Yes	No	NA
1. Samples were collected upwind from power sources, if applicable.			
2. Samples were collected on upstream side of bridge (unless historic sampling location for Trend requires different position), bank, or boat without disturbing the sediments.			
3. Water samples were collected prior to sediment samples (if any).			
4. Intermediate collections devices were well rinsed with sample water; rinse water was discarded away from sample site.			
5. Bacteria containers collected as grab samples OR collected from an intermediate collection device without interruption of the flow.			
6. Sample containers were submerged neck first, inverted into flow, slowly filled and returned to surface (if sample containers were used as collection device).			
7. Samples collected from intermediate collection devices using technique that minimized settling of particulates.			
8. Field parameters were measured at appropriate depth(s).			
9. Water depth was at least 10 cm.			
10. Water samples were collected at the appropriate depth and corresponded with field parameter measurement depth.			
11. Sample was collected at correct location in waterbody.			
12. Total depth, secchi depth, and sample collection depth were measured to nearest 0.1m (or nearest 0.01m if total depth < 0.6m).			
13. Secchi depth was measured on shaded side of boat / body, and sunglasses were removed.			

***COMMENTS:**



Page 2 of 7

Summary of Audit Findings: Sampling Teams – please complete the "response" column and email table to the WMS QA Officer for approval.

Finding #	SOP Reference	Audit Finding	Required or Suggested Corrective Action	Response	Approved by Auditors

FIELD AUDITS

Audit Timeline:

1. Auditor sends audit report within 90 days.
2. Sampling team completes “response” column in summary table within 45 days.
3. Auditor reviews response within 15 days.

FIELD AUDITS

Audit Summary Table – Example

Completed by Auditor				Completed by Field Staff	Completed by Auditor
Finding #	**SOP Reference**	**Audit Finding**	**Required or Suggested Corrective Action**	**Response**	**Approved by Auditors**
1	FD 4100 Sec. 2.3 & 2.5.	Date, time, and sampler name not documented for turbidity meter ICV on 1/5/2017.	Complete all sections of DEP ROC turbidity calibration log form for each calibration or verification event.	All sections of turbidity log will be filled out completely and correctly.	12/04/2017


QUESTIONS?

THANK YOU

Rachael Dragon
Division of Environmental Assessment and Restoration
Florida Department of Environmental Protection

Contact Information:
850-245-7544
Rachael.Dragon@FloridaDEP.gov