

Chemical Analysis Report

NW-DIST-2020-08-18-01

Florida Department of Environmental Protection
Central Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

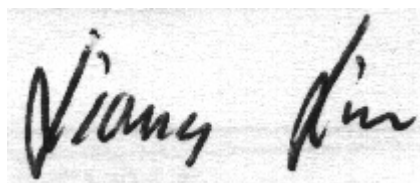
Event Description: **Whiteoak Continuous Monitoring**
Request ID: **RQ-2020-08-17-40**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 Government Center
Suite 208
Pensacola, FL 32502-5794
Attn: Cheryl Bunch

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 09-SEP-2020 09:06

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical group are included in this report: Nutrients.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited by the Florida Department of Health Environmental Laboratory Certification Program or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: White Oak Bayou At End of Aegean Drive

Collection Date/Time: 08/17/2020 10:35

Field ID: G4NW0387

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2190772	EPA 180.1 Rev. 2.0	Turbidity	2.9		NTU	P386190	
	EPA 300.0 Rev. 2.1	Bromide	11		mg Br/L	P386404	MS
	SM 2320 B-2011	Total Alkalinity	39		mg CaCO3/L	P386325	
	SM 2540 D-2011	TSS	3	U	mg/L	P386393	
	SM 4500 F-C-2011	Fluoride	0.28		mg F/L	P386330	MS
2190773	EPA 350.1 Rev. 2.0	Ammonia-N	0.032		mg N/L	P386429	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.51		mg N/L	P386512	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.007	I	mg N/L	P386245	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P386251	
	SM 5310 B-2011	Organic Carbon	7.7		mg C/L	P386334	
2190774	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P386205	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P386190

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386404

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386429

Component	Result	Code	Units
Ammonia-N	0.002	U	mg N/L

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386512

Component	Result	Code	Units
Kjeldahl Nitrogen	0.080	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386245

Component	Result	Code	Units
NO2NO3-N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386251

Component	Result	Code	Units
Total-P	0.002	U	mg P/L

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386205

Component	Result	Code	Units
O-Phosphate-P	0.004	U	mg P/L

Reference Method: SM 2320 B-2011
Batch ID: P386325

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO3/L

Reference Method: SM 2540 D-2011
Batch ID: P386393

Component	Result	Code	Units
TSS	3	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P386330

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P386334

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386404

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	99.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386429

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.6		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386512

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	102		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386245

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	100		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386251

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386205

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	100		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P386325

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.3		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P386330

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	103		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P386334

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	102		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P386404

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190112	Bromide	101	92.2	P/P	90 - 110
2190134	Bromide	88.8		F	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386429

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190707	Ammonia-N	95.8	96.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386512

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2191098	Kjeldahl Nitrogen	99.4	105	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P386245

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190707	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P386251

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190707	Total-P	102	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P386205

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190709	O-Phosphate-P	98.5	98.8	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P386330

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190705	Fluoride	105	107	P/F	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P386334

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2190708	Organic Carbon	96.5	97.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
 Batch ID: P386190

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190673	Turbidity	5.27	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P386404

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190112	Bromide	8.55	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P386429

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190707	Ammonia-N	0.192	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P386512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2191098	Kjeldahl Nitrogen	5.12	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P386245

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190707	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P386251

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190707	Total-P	0.689	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P386205

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190709	O-Phosphate-P	0.304	Spike	P	0 - 20

Reference Method: SM 2320 B-2011
 Batch ID: P386325

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190933	Total Alkalinity	3.11	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2540 D-2011
Batch ID: P386393

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190363	TSS	5.00	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P386330

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190705	Fluoride	1.36	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P386334

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2190708	Organic Carbon	0.572	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A100517

Included Lab Sample IDs: 2190772

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A100520

Included Lab Sample IDs: 2190774

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A100531

Included Lab Sample IDs: 2190773

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A100560

Included Lab Sample IDs: 2190772

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.1	96.2	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A100560

Included Lab Sample IDs: 2190772

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	107	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A100563

Included Lab Sample IDs: 2190773

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	94.3	96.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A100575

Included Lab Sample IDs: 2190773

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	98.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A100589

Included Lab Sample IDs: 2190772

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	98.3	98.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A100597

Included Lab Sample IDs: 2190773

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.0	99.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A100656

Included Lab Sample IDs: 2190773

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.4	99.4	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision SMP	MS
			LCS				
EPA 180.1 Rev. 2.0	Turbidity					5.27	
EPA 300.0 Rev. 2.1	Bromide	99.8	101	92.2	88.8		8.55
EPA 350.1 Rev. 2.0	Ammonia-N	98.6	95.8	96.0			0.192
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	99.4	105			5.12
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	100	100			0.0
EPA 365.1 Rev. 2.0	Total-P	102	102	103			0.689
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	98.5	98.8			0.304
SM 2320 B-2011	Total Alkalinity	98.3				3.11	
SM 2540 D-2011	TSS					5.00	
SM 4500 F-C-2011	Fluoride	103	105	107			1.36
SM 5310 B-2011	Organic Carbon	102	96.5	97.1			0.572

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2190772
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2190772
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2190773
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2190773
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2190773
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2190773
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2190774
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2190772
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2190772
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2190772
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2190773

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 180.1 Rev. 2.0	08/18/2020			08/18/2020 15:27	Yen Ta	2190772
EPA 300.0 Rev. 2.1	08/18/2020			08/20/2020 07:12	Julia Storbeck	2190772
EPA 350.1 Rev. 2.0	08/18/2020			08/22/2020 13:44	Ping Hua	2190773
EPA 351.2 Rev. 2.0	08/18/2020	08/25/2020 09:40	Sima Feizi	08/26/2020 10:13	Virginia P. Brown	2190773
EPA 353.2 Rev. 2.0	08/18/2020			08/19/2020 09:52	Beverly Y. Sanders	2190773
EPA 365.1 Rev. 2.0	08/18/2020	08/19/2020 13:04	Yen Ta	08/21/2020 08:18	Lipi Saha	2190773
EPA 365.1 Rev. 2.0 dissolved	08/18/2020			08/18/2020 16:47	Samantha Davila	2190774
SM 2320 B-2011	08/18/2020			08/20/2020 03:43	Dale L. Simmons	2190772
SM 2540 D-2011	08/18/2020			08/19/2020 15:39	Yijie Li	2190772
SM 4500 F-C-2011	08/18/2020			08/20/2020 06:21	Dale L. Simmons	2190772
SM 5310 B-2011	08/18/2020			08/20/2020 10:04	David Boose	2190773