Chemical Analysis Report

NW-DIST-2022-12-16-02

Florida DEP Laboratory
2600 Blair Stone Road
Tallahassee, FL 32399-2400
DOH Accreditation E31780

Event Description: **Priority Sampling**
Request ID: **RQ-2022-12-19-23**
Customer: **NW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
160 W Government Street
Suite 208
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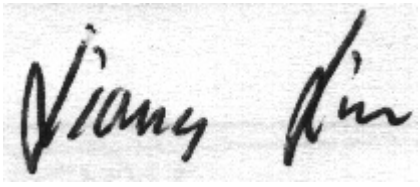
Certified by: Liang Lin, Environmental Administrator

Date Certified: 09-JAN-2023 15:33



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: Direct Runoff to Bay Off of Roberts Rd. **Collection Date/Time: 12/14/2022 11:30**

Field ID: G3NW0239 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2375913	DEP SOP: NU-094-1	Color (true)	25		PCU	P423648	
	EPA 180.1 Rev. 2.0	Turbidity	0.70	I	NTU	P423691	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P423938	
		Sulfate	8.1		mg SO4/L	P423941	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P423946	
	SM 2540 C-2015	TDS	58		mg/L	P424056	
	SM 2540 D-2015	TSS	4	I	mg/L	P423856	
	SM 4500-F- C-2011	Fluoride	0.025	U	mg F/L	P423951	
2375914	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P424224	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.38		mg N/L	P423818	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P423897	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P423792	
	SM 5310 B-2011	Organic Carbon	6.8		mg C/L	P423743	

Ref. Method and Comment:
SM 2540 D-2015: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
EPA 365.1 Rev. 2.0: Total-P: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: DEP SOP: NU-094-1
Batch ID: P423648

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P423691

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423938

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423941

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424224

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423818

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423897

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423792

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

Reference Method: SM 2320 B-2011
Batch ID: P423946

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

Quality Assurance Report
Method Blank Results

Reference Method: SM 2540 C-2015
Batch ID: P424056

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2015
Batch ID: P423856

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500-F- C-2011
Batch ID: P423951

Component	Result	Code	Units
Fluoride	0.025	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P423743

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: DEP SOP: NU-094-1
Batch ID: P423648

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.0		P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P423691

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Turbidity	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423938

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423941

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424224

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.2		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423818

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.7		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423897

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	105		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423792

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

Reference Method: SM 2320 B-2011
Batch ID: P423946

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.9		P	94 - 106

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 2540 C-2015
Batch ID: P424056

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TDS	97.1		P	90 - 110

Reference Method: SM 2540 D-2015
Batch ID: P423856

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
TSS	104		P	85 - 106

Reference Method: SM 4500-F- C-2011
Batch ID: P423951

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	96 - 104

Reference Method: SM 5310 B-2011
Batch ID: P423743

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.8		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423938

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375906	Chloride	101		P	90 - 110
2375913	Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423941

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375906	Sulfate	100		P	90 - 110
2375913	Sulfate	98.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424224

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375704	Ammonia-N	97.4	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423818

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375705	Kjeldahl Nitrogen	101	99.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423897

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375907	NO2NO3-N	108	108	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Batch ID: P423951

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375528	Fluoride	100	99.5	P/P	94 - 104

Reference Method: SM 5310 B-2011
Batch ID: P423743

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2375988	Organic Carbon	94.6	95.2	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: DEP SOP: NU-094-1
Batch ID: P423648

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375906	Color (true)	0.874	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P423691

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375906	Turbidity	11.8	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423938

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375906	Chloride	0.114	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P423941

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375906	Sulfate	1.26	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P424224

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375704	Ammonia-N	0.104	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P423818

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375705	Kjeldahl Nitrogen	0.797	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P423897

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375907	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P423792

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375743	Total-P	3.04	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2320 B-2011
Batch ID: P423946

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375528	Total Alkalinity	0.302	Sample	P	0 - 3.8

Reference Method: SM 2540 C-2015
Batch ID: P424056

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375700	TDS	3.36	Sample	P	0 - 10

Reference Method: SM 4500-F- C-2011
Batch ID: P423951

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375528	Fluoride	0.477	Spike	P	0 - 1.6

Reference Method: SM 5310 B-2011
Batch ID: P423743

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2375988	Organic Carbon	0.521	Spike	P	0 - 20

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

Quality Assurance Report
Calibration Verification

Reference Method: DEP SOP: NU-094-1
Run ID: A116496
Included Lab Sample IDs: 2375913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A116515
Included Lab Sample IDs: 2375913

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A116559
Included Lab Sample IDs: 2375913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.5	102	P/P	90 - 110
Sulfate	98.8	102	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A116560
Included Lab Sample IDs: 2375914

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.7	98.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A116630
Included Lab Sample IDs: 2375914

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	106	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A116633
Included Lab Sample IDs: 2375914

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.0	99.5	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A116652
Included Lab Sample IDs: 2375913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.6	98.5	P/P	90 - 110

Reference Method: SM 4500-F- C-2011
Run ID: A116652
Included Lab Sample IDs: 2375913

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	107	108	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A116719
Included Lab Sample IDs: 2375914

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	95.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A116773
Included Lab Sample IDs: 2375914

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.7	98.7	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		
					LCS	SMP	MS
DEP SOP: NU-094-1	Color (true)	98.0				0.874	
EPA 180.1 Rev. 2.0	Turbidity	101				11.8	
EPA 300.0 Rev. 2.1	Chloride	98.7	101	99.3		0.114	
	Sulfate	98.4	100	98.0		1.26	
EPA 350.1 Rev. 2.0	Ammonia-N	98.2	97.4	97.2			0.104
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.7	101	99.8			0.797
EPA 353.2 Rev. 2.0	NO2NO3-N	105	108	108			0.0
EPA 365.1 Rev. 2.0	Total-P	103					3.04
SM 2320 B-2011	Total Alkalinity	98.9				0.302	
SM 2540 C-2015	TDS	97.1				3.36	
SM 2540 D-2015	TSS	104					
SM 4500-F- C-2011	Fluoride	102	100	99.5			0.477
SM 5310 B-2011	Organic Carbon	97.8	94.6	95.2			0.521

Reference Method Descriptions

Method	Description	Associated Samples
DEP SOP: NU-094-1	True Color measured at 450 nm (not valid for NPDES monitoring)	2375913
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2375913
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2375913
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2375913
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2375914
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2375914
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2375914
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2375914
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2375913
SM 2540 C-2015	Total Dissolved Solids in aqueous matrices	2375913
SM 2540 D-2015	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2375913
SM 4500-F- C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2375913
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2375914

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
DEP SOP: NU-094-1	12/16/2022			12/16/2022 10:40	Alexis Price	2375913
EPA 180.1 Rev. 2.0	12/16/2022			12/16/2022 10:15	Khloe J Berg	2375913
EPA 300.0 Rev. 2.1	12/16/2022			12/22/2022 13:50	Anna M. Plaviak	2375913
EPA 350.1 Rev. 2.0	12/16/2022			01/06/2023 11:59	Ping Hua	2375914
EPA 351.2 Rev. 2.0	12/16/2022	12/21/2022 16:20	Simonne.V. Calhoun	01/04/2023 11:15	Samantha L Bates	2375914
EPA 353.2 Rev. 2.0	12/16/2022			12/22/2022 10:14	Beverly Y. Sanders	2375914
EPA 365.1 Rev. 2.0	12/16/2022	12/21/2022 15:15	Simonne.V. Calhoun	12/22/2022 11:47	James L Waggerby	2375914
SM 2320 B-2011	12/16/2022			12/23/2022 13:35	Dale L. Simmons	2375913
SM 2540 C-2015	12/16/2022			12/19/2022 16:08	Yijie Li	2375913
SM 2540 D-2015	12/16/2022			12/19/2022 16:08	Yijie Li	2375913
SM 4500-F- C-2011	12/16/2022			12/23/2022 13:35	Dale L. Simmons	2375913
SM 5310 B-2011	12/16/2022			12/19/2022 17:58	Elise M. Gillis	2375914