Chemical Analysis Report

NE-DIST-2018-09-06-01

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

Event Description: **Nassau East**
Request ID: **RQ-2018-09-03-33**
Customer: **NE-DIST**
Project ID: **SMP**

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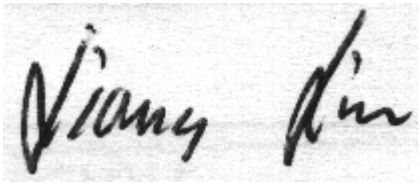
Date Certified: 26-SEP-2018 14:58



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 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: Thomas CR 6.0 MI Below City Prison **Collection Date/Time: 09/05/2018 10:00**

Field ID: G4NE0008 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2022357	EPA 180.1 Rev. 2.0	Turbidity	4.0		NTU	P351209	
	EPA 300.0 Rev. 2.1	Sulfate	4.6		mg SO4/L	P351789	
	SM 2320 B-97	Total Alkalinity	21		mg CaCO3/L	P351405	
	SM 2540 D-97	TSS	2	I	mg/L	P351486	
	SM 4500 F-C-97	Fluoride	0.060	I	mg F/L	P351412	
2022359	EPA 350.1 Rev. 2.0	Ammonia-N	0.027		mg N/L	P351296	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P351247	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.054		mg N/L	P351426	
	EPA 365.1 Rev. 2.0	Total-P	0.25		mg P/L	P351280	
	SM 5310 B-00	Organic Carbon	33		mg C/L	P351540	
2022361	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.20		mg P/L	P351204	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Thomas CR 6.0 MI Below City Prison **Collection Date/Time: 09/05/2018 10:10**

Field ID: G4NE0008DUP Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2022358	EPA 180.1 Rev. 2.0	Turbidity	3.8		NTU	P351209	
	EPA 300.0 Rev. 2.1	Sulfate	4.6		mg SO4/L	P351789	
	SM 2320 B-97	Total Alkalinity	21		mg CaCO3/L	P351405	
	SM 2540 D-97	TSS	2	U	mg/L	P351486	
	SM 4500 F-C-97	Fluoride	0.060	I	mg F/L	P351412	
2022360	EPA 350.1 Rev. 2.0	Ammonia-N	0.028		mg N/L	P351296	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P351247	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.053		mg N/L	P351426	
	EPA 365.1 Rev. 2.0	Total-P	0.25		mg P/L	P351280	
	SM 5310 B-00	Organic Carbon	32		mg C/L	P351540	
2022362	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.21		mg P/L	P351204	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Quality Assurance Report
Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P351209

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351789

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351296

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351247

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351426

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351280

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351204

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

Reference Method: SM 2320 B-97
Batch ID: P351405

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

Reference Method: SM 2540 D-97
Batch ID: P351486

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P351412

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P351540

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: P351789

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: P351296

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351247

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.1		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351426

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351280

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351204

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	98.3		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P351405

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P351412

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.7		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P351540

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

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P351789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022197	Sulfate	98.5		P	90 - 110
2022280	Sulfate	96.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351296

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022275	Ammonia-N	102	99.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351247

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022282	Kjeldahl Nitrogen	98.9	97.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022278	NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351280

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022282	Total-P	99.0	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351204

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022276	O-Phosphate-P	96.6	96.6	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P351412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022280	Fluoride	97.5	98.2	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P351540

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022287	Organic Carbon	95.8	95.6	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P351209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022277	Turbidity	5.92	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351296

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022275	Ammonia-N	1.89	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351247

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022282	Kjeldahl Nitrogen	0.702	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022278	NO2NO3-N	0.474	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351280

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022282	Total-P	1.28	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351204

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022276	O-Phosphate-P	0.0	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P351405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022280	Total Alkalinity	0.869	Sample	P	0 - 1.6

Reference Method: SM 4500 F-C-97
Batch ID: P351412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022280	Fluoride	0.473	Spike	P	0 - 3.5

Quality Assurance Report
Precision

Reference Method: SM 5310 B-00
Batch ID: P351540

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022287	Organic Carbon	0.145	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A86326
Included Lab Sample IDs: 2022361, 2022362

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	99.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A86327
Included Lab Sample IDs: 2022357, 2022358

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	103	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A86350
Included Lab Sample IDs: 2022359, 2022360

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A86365
Included Lab Sample IDs: 2022359, 2022360

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	104	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A86371
Included Lab Sample IDs: 2022359, 2022360

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	97.0	102	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A86400
Included Lab Sample IDs: 2022357, 2022358

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	101	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A86400
Included Lab Sample IDs: 2022357, 2022358

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A86403
Included Lab Sample IDs: 2022359, 2022360

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

Quality Assurance Report
Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A86450
Included Lab Sample IDs: 2022359, 2022360

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.7	93.8	P/P	90 - 110
Organic Carbon	94.8	93.7	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A86543
Included Lab Sample IDs: 2022357, 2022358

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Sulfate	103	102	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
EPA 180.1 Rev. 2.0	Turbidity					5.92	
EPA 300.0 Rev. 2.1	Sulfate	98.4	98.5	96.4			
EPA 350.1 Rev. 2.0	Ammonia-N	101	102	99.9			1.89
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	99.1	98.9	97.8			0.702
EPA 353.2 Rev. 2.0	NO2NO3-N	101	101				0.474
EPA 365.1 Rev. 2.0	Total-P	103	99.0	100			1.28
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.3	96.6	96.6			0.0
SM 2320 B-97	Total Alkalinity	103				0.869	
SM 4500 F-C-97	Fluoride	98.7	97.5	98.2			0.473
SM 5310 B-00	Organic Carbon	94.6	95.8	95.6			0.145

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2022357, 2022358
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2022357, 2022358
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2022359, 2022360
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2022359, 2022360
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2022359, 2022360
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2022359, 2022360
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2022361, 2022362
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2022357, 2022358
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2022357, 2022358
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2022357, 2022358
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2022359, 2022360

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	09/06/2018			09/06/2018 16:48	Megan Treadwell	2022357, 2022358
EPA 300.0 Rev. 2.1	09/06/2018			09/14/2018 01:26	Lipi Saha	2022357
	09/06/2018			09/14/2018 01:38	Lipi Saha	2022358
EPA 350.1 Rev. 2.0	09/06/2018			09/07/2018 12:42	Ping Hua	2022359
	09/06/2018			09/07/2018 12:44	Ping Hua	2022360
EPA 351.2 Rev. 2.0	09/06/2018	09/07/2018 09:40	Adrian Shelby	09/10/2018 14:14	Joseph Suarez	2022359
	09/06/2018	09/07/2018 09:40	Adrian Shelby	09/10/2018 14:16	Joseph Suarez	2022360
EPA 353.2 Rev. 2.0	09/06/2018			09/11/2018 13:11	Lauren Bottorf	2022359
	09/06/2018			09/11/2018 13:12	Lauren Bottorf	2022360
EPA 365.1 Rev. 2.0	09/06/2018	09/07/2018 11:52	Sima Feizi	09/10/2018 10:20	Beverly Y. Sanders	2022359, 2022360
EPA 365.1 Rev. 2.0 dissolved	09/06/2018			09/06/2018 16:37	Julia Storbeck	2022361
	09/06/2018			09/06/2018 16:38	Julia Storbeck	2022362
SM 2320 B-97	09/06/2018			09/11/2018 07:59	Dale L. Simmons	2022357
	09/06/2018			09/11/2018 08:09	Dale L. Simmons	2022358
SM 2540 D-97	09/06/2018			09/10/2018 13:20	DeAsia Armster	2022357, 2022358
SM 4500 F-C-97	09/06/2018			09/11/2018 07:59	Dale L. Simmons	2022357
	09/06/2018			09/11/2018 08:09	Dale L. Simmons	2022358
SM 5310 B-00	09/06/2018			09/11/2018 21:55	Megan Treadwell	2022359
	09/06/2018			09/11/2018 22:36	Megan Treadwell	2022360