

Chemical Analysis Report

NE-DIST-2020-10-07-01

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

Event Description: **Nassau North West**
Request ID: **RQ-2020-09-21-22**
Customer: **NE-DIST**
Project ID: **SMP**

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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 29-OCT-2020 09:46

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: Calkins At Turner Cemetary Rd

Collection Date/Time: 10/06/2020 10:05

Field ID: 19010076

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2200133	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P388349	
	EPA 300.0 Rev. 2.1	Chloride	7.5		mg Cl/L	P388999	
		Sulfate	0.33	I	mg SO4/L	P389001	
	SM 2120 B-2011	Color (true)	390		PCU	P388353	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P388573	
	SM 2540 C-2011	TDS	70		mg/L	P388804	
	SM 2540 D-2011	TSS	2	I	mg/L	P388778	
	SM 4500 F-C-2011	Fluoride	0.037	I	mg F/L	P388576	MS
2200136	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P388495	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P388457	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.046		mg N/L	P388449	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P388379	
	SM 5310 B-2011	Organic Carbon	41		mg C/L	P388444	
2200139	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P388367	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Daughtery Br @ Crews Rd

Collection Date/Time: 10/06/2020 10:35

Field ID: 19010136

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2200134	EPA 180.1 Rev. 2.0	Turbidity	4.7		NTU	P388349	
	EPA 300.0 Rev. 2.1	Chloride	9.5		mg Cl/L	P388631	
		Sulfate	0.75		mg SO4/L	P388634	
		Color (true)	370		PCU	P388353	
	SM 2320 B-2011	Total Alkalinity	3.1		mg CaCO3/L	P388574	
	SM 2540 C-2011	TDS	80		mg/L	P388804	
	SM 2540 D-2011	TSS	2	U	mg/L	P388778	
	SM 4500 F-C-2011	Fluoride	0.048	I	mg F/L	P388577	
2200137	EPA 350.1 Rev. 2.0	Ammonia-N	0.021		mg N/L	P388495	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1	J	mg N/L	P388457	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.90		mg N/L	P388449	
	EPA 365.1 Rev. 2.0	Total-P	0.054		mg P/L	P388379	
	SM 5310 B-2011	Organic Carbon	34		mg C/L	P388444	
2200140	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.032		mg P/L	P388367	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

EPA 351.2 Rev. 2.0: Refer to the Lab Analysis Report for an explanation of QC Codes.

Sample Location: Moccasin Creek @ Moccasin Creek Cir. E.

Collection Date/Time: 10/06/2020 11:20

Field ID: 19010121

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2200135	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P388349	
	EPA 300.0 Rev. 2.1	Chloride	6.0		mg Cl/L	P388631	
		Sulfate	0.20	U	mg SO4/L	P388634	
	SM 2120 B-2011	Color (true)	560		PCU	P388353	
	SM 2320 B-2011	Total Alkalinity	0.65	U	mg CaCO3/L	P388574	
	SM 2540 C-2011	TDS	72		mg/L	P388804	
	SM 2540 D-2011	TSS	2	I	mg/L	P388778	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P388577	
2200138	EPA 350.1 Rev. 2.0	Ammonia-N	0.013		mg N/L	P388495	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P388457	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P388449	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P388379	
	SM 5310 B-2011	Organic Carbon	55		mg C/L	P388444	
2200141	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P388367	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Chloride: Batch matrix spike recoveries for one of two spiked samples are unavailable because of high analyte concentration in the QC sample.

SM 2540 D-2011: 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: P388349

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388631

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388634

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388999

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389001

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388495

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388457

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388449

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388379

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388367

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

Reference Method: SM 2120 B-2011
Batch ID: P388353

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P388573

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2320 B-2011
Batch ID: P388574

Component	Result	Code	Units
Total Alkalinity	0.65	U	mg CaCO ₃ /L

Reference Method: SM 2540 C-2011
Batch ID: P388804

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P388778

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P388576

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P388577

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P388444

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: P388631

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388634

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388999

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389001

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	97.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388495

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388457

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388449

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388379

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388367

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.0		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2120 B-2011
Batch ID: P388353

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	97.2		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P388573

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P388574

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.8		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P388576

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.9		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P388577

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.4		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P388444

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388631

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199815	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388634

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2199815	Sulfate	98.9		P	90 - 110
2200113	Sulfate	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388999

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201191	Chloride	98.2		P	90 - 110
2201344	Chloride	99.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389001

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2201191	Sulfate	97.2		P	90 - 110
2201344	Sulfate	94.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388495

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200192	Ammonia-N	100	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388457

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200137	Kjeldahl Nitrogen	110	102	F/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388449

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200093	NO2NO3-N	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388379

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200093	Total-P	107	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388367

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200139	O-Phosphate-P	95.8	98.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P388576

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200682	Fluoride	108	108	F/F	94 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P388577

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200694	Fluoride	98.1	98.8	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P388444

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2200192	Organic Carbon	101	101	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P388349

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200113	Turbidity	3.74	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388631

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199815	Chloride	0.158	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388634

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2199815	Sulfate	0.610	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P388999

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201191	Chloride	0.317	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P389001

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2201191	Sulfate	0.602	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P388495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200192	Ammonia-N	2.25	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P388457

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200137	Kjeldahl Nitrogen	4.47	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P388449

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200093	NO2NO3-N	0.482	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P388379

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200093	Total-P	0.0233	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P388367

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200139	O-Phosphate-P	2.91	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P388353

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200113	Color (true)	3.24	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P388573

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200682	Total Alkalinity	0.679	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
Batch ID: P388574

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200694	Total Alkalinity	1.20	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P388804

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200049	TDS	2.34	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P388576

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200682	Fluoride	0.498	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P388577

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200694	Fluoride	0.467	Spike	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 5310 B-2011
Batch ID: P388444

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2200192	Organic Carbon	0.220	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: A101415

Included Lab Sample IDs: 2200133, 2200134, 2200135

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	101	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A101417

Included Lab Sample IDs: 2200133, 2200134, 2200135

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.1	100	P/P	90 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A101426

Included Lab Sample IDs: 2200139, 2200140, 2200141

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	99.7	P/P	90 - 110
O-Phosphate-P	99.7	98.0	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A101446

Included Lab Sample IDs: 2200136, 2200137, 2200138

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.0	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A101447

Included Lab Sample IDs: 2200136, 2200137, 2200138

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A101460

Included Lab Sample IDs: 2200136, 2200137, 2200138

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A101474

Included Lab Sample IDs: 2200136, 2200137, 2200138

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	99.6	P/P	90 - 110
Kjeldahl Nitrogen	95.2	102	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A101486

Included Lab Sample IDs: 2200133, 2200134, 2200135

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	105	100	P/P	90 - 110
Total Alkalinity	99.6	105	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A101486

Included Lab Sample IDs: 2200133, 2200134, 2200135

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	102	P/P	90 - 110
Fluoride	102	101	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A101493

Included Lab Sample IDs: 2200134, 2200135

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A101532

Included Lab Sample IDs: 2200136, 2200137, 2200138

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.0	98.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A101649

Included Lab Sample IDs: 2200133

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.6	P/P	90 - 110
Sulfate	99.9	98.5	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	MS
EPA 180.1 Rev. 2.0	Turbidity				3.74	
EPA 300.0 Rev. 2.1	Chloride	103	103		0.158	
	Chloride	100	98.2	99.3	0.317	
	Sulfate	101	98.9	103	0.610	
	Sulfate	97.9	97.2	94.3	0.602	
EPA 350.1 Rev. 2.0	Ammonia-N	98.7	100	103		2.25
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	110	102		4.47
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	104	104		0.482
EPA 365.1 Rev. 2.0	Total-P	104	107	107		0.0233
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.0	95.8	98.8		2.91
SM 2120 B-2011	Color (true)	97.2			3.24	
SM 2320 B-2011	Total Alkalinity	102			0.679	
	Total Alkalinity	99.8			1.20	
SM 2540 C-2011	TDS				2.34	
SM 4500 F-C-2011	Fluoride	99.9	108	108		0.498
	Fluoride	99.4	98.1	98.8		0.467
SM 5310 B-2011	Organic Carbon	97.4	101	101		0.220

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2200133, 2200134, 2200135
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2200133, 2200134, 2200135
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2200133, 2200134, 2200135
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2200136, 2200137, 2200138
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2200136, 2200137, 2200138
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2200136, 2200137, 2200138
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2200136, 2200137, 2200138
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2200139, 2200140, 2200141
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2200133, 2200134, 2200135
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2200133, 2200134, 2200135
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2200133, 2200134, 2200135
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2200133, 2200134, 2200135
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2200133, 2200134, 2200135
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2200136, 2200137, 2200138

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	10/07/2020			10/07/2020 15:48	Yen Ta	2200133, 2200134, 2200135
EPA 300.0 Rev. 2.1	10/07/2020			10/14/2020 03:15	Elliott Rodriguez	2200134
	10/07/2020			10/14/2020 03:28	Elliott Rodriguez	2200135
	10/07/2020			10/20/2020 18:44	Lipi Saha	2200133
EPA 350.1 Rev. 2.0	10/07/2020			10/10/2020 11:21	Ping Hua	2200136
	10/07/2020			10/10/2020 11:22	Ping Hua	2200137
	10/07/2020			10/10/2020 11:24	Ping Hua	2200138
EPA 351.2 Rev. 2.0	10/07/2020	10/09/2020 12:48	David Boose	10/12/2020 11:41	Virginia P. Brown	2200136
	10/07/2020	10/09/2020 12:48	David Boose	10/12/2020 11:46	Virginia P. Brown	2200137
	10/07/2020	10/09/2020 12:48	David Boose	10/12/2020 11:51	Virginia P. Brown	2200138
EPA 353.2 Rev. 2.0	10/07/2020			10/09/2020 10:18	Beverly Y. Sanders	2200136
	10/07/2020			10/09/2020 11:03	Beverly Y. Sanders	2200137
	10/07/2020			10/09/2020 11:04	Beverly Y. Sanders	2200138
EPA 365.1 Rev. 2.0	10/07/2020	10/08/2020 13:02	Yen Ta	10/13/2020 15:59	Shengyu Wang	2200136
	10/07/2020	10/08/2020 13:02	Yen Ta	10/13/2020 16:00	Shengyu Wang	2200137
	10/07/2020	10/08/2020 13:02	Yen Ta	10/13/2020 16:01	Shengyu Wang	2200138
EPA 365.1 Rev. 2.0 dissolved	10/07/2020			10/07/2020 15:34	Blanca Fach	2200139
	10/07/2020			10/07/2020 15:47	Blanca Fach	2200140
	10/07/2020			10/07/2020 15:48	Blanca Fach	2200141
SM 2120 B-2011	10/07/2020			10/07/2020 17:11	Benjamin T. Nordmann	2200133, 2200134
	10/07/2020			10/07/2020 17:12	Benjamin T. Nordmann	2200135
SM 2320 B-2011	10/07/2020			10/13/2020 04:43	Lauren Lees	2200133
	10/07/2020			10/13/2020 06:45	Lauren Lees	2200134
	10/07/2020			10/13/2020 06:51	Lauren Lees	2200135
SM 2540 C-2011	10/07/2020			10/08/2020 15:02	Yijie Li	2200133, 2200134, 2200135
SM 2540 D-2011	10/07/2020			10/08/2020 15:02	Yijie Li	2200133, 2200134, 2200135
SM 4500 F-C-2011	10/07/2020			10/13/2020 04:43	Lauren Lees	2200133
	10/07/2020			10/13/2020 06:45	Lauren Lees	2200134
	10/07/2020			10/13/2020 06:51	Lauren Lees	2200135
SM 5310 B-2011	10/07/2020			10/09/2020 00:09	Madeline Gruver	2200136
	10/07/2020			10/09/2020 00:21	Madeline Gruver	2200137
	10/07/2020			10/09/2020 00:33	Madeline Gruver	2200138