

Chemical Analysis Report

SO-DIST-2020-06-17-01

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

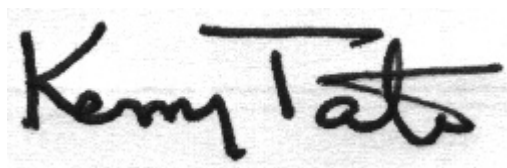
Event Description: **2020 SMP : Large Highlands**
Request ID: **RQ-2020-04-06-35**
Customer: **SO-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FLDEP South District Office
2295 Victoria Ave. Suite 364
Fort Myers, FL 33901-3381
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 09-JUL-2020 10:27

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: Lake June @ Center

Collection Date/Time: 06/16/2020 10:55

Field ID: G4SD0186

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2177365	EPA 180.1 Rev. 2.0	Turbidity	3.2	A	NTU	P383352	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P383736	
		Sulfate	26		mg SO4/L	P383739	
	SM 2120 B-2011	Color (true)	7.4		PCU	P383356	
	SM 2320 B-2011	Total Alkalinity	21	A	mg CaCO3/L	P383534	
	SM 2540 C-2011	TDS	98		mg/L	P383665	
	SM 2540 D-2011	TSS	5	I	mg/L	P383601	
	SM 4500 F-C-2011	Fluoride	0.065	I	mg F/L	P383537	
2177368	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P383470	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.58		mg N/L	P383483	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P383375	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P383417	
	SM 5310 B-2011	Organic Carbon	6.8		mg C/L	P383531	
2177371	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P383342	

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: Lake Placid

Collection Date/Time: 06/16/2020 11:50

Field ID: G4SD0102

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2177366	EPA 180.1 Rev. 2.0	Turbidity	4.7		NTU	P383352	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P383736	
		Sulfate	16		mg SO4/L	P383739	
	SM 2120 B-2011	Color (true)	6.3		PCU	P383356	
	SM 2320 B-2011	Total Alkalinity	21		mg CaCO3/L	P383535	
	SM 2540 C-2011	TDS	70		mg/L	P383665	
	SM 2540 D-2011	TSS	6	I	mg/L	P383601	
	SM 4500 F-C-2011	Fluoride	0.053	I	mg F/L	P383538	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P383470	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.52		mg N/L	P383483	
2177369	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P383375	
	EPA 365.1 Rev. 2.0	Total-P	0.012		mg P/L	P383417	
	SM 5310 B-2011	Organic Carbon	5.7		mg C/L	P383531	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P383342	
	dissolved						
2177372	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P383342	

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: LittleLakeJackson@Centr

Collection Date/Time: 06/16/2020 13:00

Field ID: G4SD0183

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2177367	EPA 180.1 Rev. 2.0	Turbidity	2.0		NTU	P383352	
	EPA 300.0 Rev. 2.1	Chloride	15	A	mg Cl/L	P383967	
		Sulfate	14	A	mg SO4/L	P383971	
	SM 2120 B-2011	Color (true)	28		PCU	P383357	
	SM 2320 B-2011	Total Alkalinity	17	A	mg CaCO3/L	P383535	
	SM 2540 C-2011	TDS	80		mg/L	P383665	
	SM 2540 D-2011	TSS	3	I	mg/L	P383601	
	SM 4500 F-C-2011	Fluoride	0.087	I	mg F/L	P383538	
2177370	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P383470	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.66		mg N/L	P383483	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P383377	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P383504	
	SM 5310 B-2011	Organic Carbon	9.0		mg C/L	P383531	
2177373	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P383342	

Ref. Method and Comment:

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: P383352

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383736

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383739

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383967

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383971

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383470

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383483

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383375

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383377

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383417

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383504

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383342

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

Reference Method: SM 2120 B-2011
Batch ID: P383356

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P383357

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P383534

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

Reference Method: SM 2320 B-2011
Batch ID: P383535

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

Reference Method: SM 2540 C-2011
Batch ID: P383665

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P383601

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P383537

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P383538

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P383531

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: P383736

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383739

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383967

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	99.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383971

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383470

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383483

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383375

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383377

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: P383417

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383504

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: P383342

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

Reference Method: SM 2120 B-2011
Batch ID: P383356

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: SM 2120 B-2011
Batch ID: P383357

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	102		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P383534

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.4		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P383535

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.1		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P383537

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.2		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P383538

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	102		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P383531

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	103		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383736

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177257	Chloride	104		P	90 - 110
2177365	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383739

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177257	Sulfate	101		P	90 - 110
2177365	Sulfate	99.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383967

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177367	Chloride	105		P	90 - 110
2178018	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383971

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177367	Sulfate	108		P	90 - 110
2178018	Sulfate	105		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383470

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177320	Ammonia-N	94.6	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383483

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177392	Kjeldahl Nitrogen	99.0	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383375

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177290	NO2NO3-N	96.1	95.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383377

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177370	NO2NO3-N	100	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383417

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383417

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177320	Total-P	104	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383504

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177382	Total-P	104	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383342

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177259	O-Phosphate-P	97.0	98.2	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P383537

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177365	Fluoride	99.9	98.2	P/P	94 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P383538

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177367	Fluoride	103	102	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P383531

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177370	Organic Carbon	98.9	104	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P383352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177365	Turbidity	15.1	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383736

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177257	Chloride	1.71	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383739

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177257	Sulfate	1.93	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383967

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177367	Chloride	0.765	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383971

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177367	Sulfate	0.882	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383470

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177320	Ammonia-N	8.45	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383483

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177392	Kjeldahl Nitrogen	0.284	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383375

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177290	NO2NO3-N	0.460	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383377

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177370	NO2NO3-N	0.499	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383417

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177320	Total-P	0.599	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383504

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177382	Total-P	1.27	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383342

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177259	O-Phosphate-P	1.23	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P383356

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177323	Color (true)	0.713	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P383357

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177381	Color (true)	0.527	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P383534

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177365	Total Alkalinity	4.34	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
Batch ID: P383535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177367	Total Alkalinity	1.55	Sample	P	0 - 8.1

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P383665

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177307	TDS	2.76	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P383537

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177365	Fluoride	1.45	Spike	P	0 - 2.8

Reference Method: SM 4500 F-C-2011
Batch ID: P383538

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177367	Fluoride	0.484	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P383531

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177370	Organic Carbon	3.18	Spike	P	0 - 20

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A99385

Included Lab Sample IDs: 2177371, 2177372, 2177373

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.2	98.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A99386

Included Lab Sample IDs: 2177365, 2177366, 2177367

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	101	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A99388

Included Lab Sample IDs: 2177365, 2177366, 2177367

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	102	P/P	90 - 115
Color (true)	102	102	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A99398

Included Lab Sample IDs: 2177368, 2177369, 2177370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110
NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A99434

Included Lab Sample IDs: 2177368, 2177369, 2177370

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A99446

Included Lab Sample IDs: 2177368, 2177369, 2177370

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

Reference Method: SM 2320 B-2011

Run ID: A99455

Included Lab Sample IDs: 2177365, 2177366, 2177367

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.2	97.0	P/P	90 - 110
Total Alkalinity	99.7	97.8	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A99455

Included Lab Sample IDs: 2177365, 2177366, 2177367

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	102	102	P/P	90 - 110
Fluoride	102	105	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A99456

Included Lab Sample IDs: 2177368, 2177369, 2177370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	102	101	P/P	90 - 110
Organic Carbon	108	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A99483

Included Lab Sample IDs: 2177368, 2177369, 2177370

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	93.8	95.0	P/P	90 - 110
Total-P	94.8	93.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A99546

Included Lab Sample IDs: 2177365, 2177366

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	96.9	98.3	P/P	90 - 110
Chloride	98.3	97.7	P/P	90 - 110
Sulfate	97.9	99.2	P/P	90 - 110
Sulfate	99.2	98.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A99640

Included Lab Sample IDs: 2177367

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.4	97.5	P/P	90 - 110
Sulfate	100	99.0	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				15.1	
EPA 300.0 Rev. 2.1	Chloride	100	104	102	1.71	
	Chloride	99.9	105	101	0.765	
	Sulfate	101	101	99.9	1.93	
	Sulfate	103	108	105	0.882	
EPA 350.1 Rev. 2.0	Ammonia-N	102	94.6	104		8.45
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	105	99.0	98.5		0.284
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	101	96.1	95.6		0.460
	NO ₂ NO ₃ -N	101	100	100		0.499
EPA 365.1 Rev. 2.0	Total-P	103	104	105		0.599
	Total-P	104	104	102		1.27
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	97.0	98.2		1.23
SM 2120 B-2011	Color (true)	102			0.713	
	Color (true)	102			0.527	
SM 2320 B-2011	Total Alkalinity	99.4			4.34	
	Total Alkalinity	98.1			1.55	
SM 2540 C-2011	TDS				2.76	
SM 4500 F-C-2011	Fluoride	99.2	99.9	98.2		1.45
	Fluoride	102	103	102		0.484
SM 5310 B-2011	Organic Carbon	103	98.9	104		3.18

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2177365, 2177366, 2177367
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2177365, 2177366, 2177367
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2177365, 2177366, 2177367
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2177368, 2177369, 2177370
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2177368, 2177369, 2177370
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2177368, 2177369, 2177370
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2177368, 2177369, 2177370
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2177371, 2177372, 2177373
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2177365, 2177366, 2177367
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2177365, 2177366, 2177367
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2177365, 2177366, 2177367
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2177365, 2177366, 2177367
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2177365, 2177366, 2177367
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2177368, 2177369, 2177370

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	06/17/2020			06/17/2020 15:47	Yen Ta	2177365, 2177366, 2177367
EPA 300.0 Rev. 2.1	06/17/2020			06/23/2020 16:28	Elliott Rodriguez	2177365
	06/17/2020			06/23/2020 19:30	Elliott Rodriguez	2177366
	06/17/2020			06/29/2020 19:53	Julia Storbeck	2177367
EPA 350.1 Rev. 2.0	06/17/2020			06/20/2020 13:16	Ping Hua	2177368
	06/17/2020			06/20/2020 13:17	Ping Hua	2177369
	06/17/2020			06/20/2020 13:19	Ping Hua	2177370
EPA 351.2 Rev. 2.0	06/17/2020	06/19/2020 10:40	Elliott Rodriguez	06/22/2020 13:18	Jhamieka S. Greenwood	2177368
	06/17/2020	06/19/2020 10:40	Elliott Rodriguez	06/22/2020 13:19	Jhamieka S. Greenwood	2177369
	06/17/2020	06/19/2020 10:40	Elliott Rodriguez	06/22/2020 13:21	Jhamieka S. Greenwood	2177370
EPA 353.2 Rev. 2.0	06/17/2020			06/18/2020 09:30	Beverly Y. Sanders	2177368
	06/17/2020			06/18/2020 09:31	Beverly Y. Sanders	2177369
	06/17/2020			06/18/2020 09:54	Beverly Y. Sanders	2177370
EPA 365.1 Rev. 2.0	06/17/2020	06/18/2020 12:09	Yen Ta	06/24/2020 08:47	Lipi Saha	2177368
	06/17/2020	06/18/2020 12:09	Yen Ta	06/24/2020 08:48	Lipi Saha	2177369
	06/17/2020	06/22/2020 14:35	Yen Ta	06/24/2020 07:38	Lipi Saha	2177370
EPA 365.1 Rev. 2.0 dissolved	06/17/2020			06/17/2020 15:53	Carlos Miranda	2177371
	06/17/2020			06/17/2020 15:54	Carlos Miranda	2177372
	06/17/2020			06/17/2020 15:55	Carlos Miranda	2177373
SM 2120 B-2011	06/17/2020			06/17/2020 16:56	Benjamin T. Nordmann	2177365, 2177366
	06/17/2020			06/17/2020 17:02	Benjamin T. Nordmann	2177367
SM 2320 B-2011	06/17/2020			06/18/2020 17:15	Dale L. Simmons	2177365
	06/17/2020			06/18/2020 23:10	Dale L. Simmons	2177367
	06/17/2020			06/18/2020 23:31	Dale L. Simmons	2177366
SM 2540 C-2011	06/17/2020			06/18/2020 14:01	Yijie Li	2177365, 2177366, 2177367
SM 2540 D-2011	06/17/2020			06/18/2020 14:01	Yijie Li	2177365, 2177366, 2177367
SM 4500 F-C-2011	06/17/2020			06/18/2020 17:05	Dale L. Simmons	2177365
	06/17/2020			06/18/2020 22:59	Dale L. Simmons	2177367
	06/17/2020			06/18/2020 23:31	Dale L. Simmons	2177366
SM 5310 B-2011	06/17/2020			06/22/2020 19:54	David Boose	2177370
	06/17/2020			06/22/2020 21:15	David Boose	2177368
	06/17/2020			06/22/2020 21:29	David Boose	2177369