

Chemical Analysis Report

NW-DIST-2020-06-19-01

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

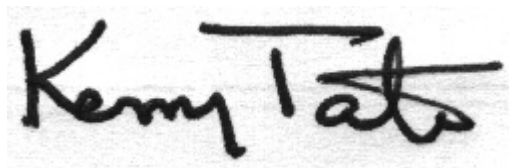
Event Description: **NW Milton Highway 4 Run**
Request ID: **RQ-2020-06-15-64**
Customer: **NW-DIST**
Project ID: **SMP**

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

For additional information please contact
Colin Wright, Ph.D.
Liang-Tsair Lin, Ph.D.
Kerry Tate, Ph.D.
Dr. rer. nat. Bettina Steinbock
Thekkekalathil Chandrasekhar, Ph.D, QA Officer
Phone (850) 245-8085

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

Date Certified: 07-JUL-2020 15:32

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.

NON-CONFORMANCE REPORT INCLUDED

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: Bucket Branch end of Bucket Creek Rd.

Collection Date/Time: 06/18/2020 10:40

Field ID: G4NW0059

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2177789	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P383460	
	EPA 300.0 Rev. 2.1	Chloride	4.8		mg Cl/L	P383738	
		Sulfate	0.69		mg SO4/L	P383741	
	SM 2120 B-2011	Color (true)	76		PCU	P383463	
	SM 2320 B-2011	Total Alkalinity	3.9		mg CaCO3/L	P383552	
	SM 2540 C-2011	TDS	31		mg/L	P383858	
	SM 2540 D-2011	TSS	3	I	mg/L	P383821	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P383556	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.015	J	mg N/L	P383477	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31	J	mg N/L	P383565	
2177793	EPA 353.2 Rev. 2.0	NO2NO3-N	0.040	J	mg N/L	P383495	
	EPA 365.1 Rev. 2.0	Total-P	0.019	J	mg P/L	P383508	
	SM 5310 B-2011	Organic Carbon	6.2	J	mg C/L	P383709	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P383489	

Ref. Method and Comment:

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

EPA 350.1 Rev. 2.0: Container cap was loose on receipt. Sample integrity may be compromised.

EPA 351.2 Rev. 2.0: Container cap was loose on receipt. Sample integrity may be compromised.

EPA 353.2 Rev. 2.0: Container cap was loose on receipt. Sample integrity may be compromised.

EPA 365.1 Rev. 2.0: Total-P: Container cap was loose on receipt. Sample integrity may be compromised.

SM 5310 B-2011: Container cap was loose on receipt. Sample integrity may be compromised.

Sample Location: Dridglers Creek above Parkview Street

Collection Date/Time: 06/18/2020 11:20

Field ID: G4NW0168

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2177790	EPA 180.1 Rev. 2.0	Turbidity	4.4		NTU	P383460	
	EPA 300.0 Rev. 2.1	Chloride	7.0		mg Cl/L	P383738	
		Sulfate	7.3		mg SO4/L	P383741	
	SM 2120 B-2011	Color (true)	270		PCU	P383463	
	SM 2320 B-2011	Total Alkalinity	4.1		mg CaCO3/L	P383552	
	SM 2540 C-2011	TDS	51		mg/L	P383858	
	SM 2540 D-2011	TSS	3	I	mg/L	P383821	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P383556	
2177794	EPA 350.1 Rev. 2.0	Ammonia-N	0.031		mg N/L	P383477	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.87		mg N/L	P383565	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.056		mg N/L	P383495	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P383604	
	SM 5310 B-2011	Organic Carbon	19		mg C/L	P383709	
2177798	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P383489	

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: Big Coldwater Creek (east fork) upstream of Springhill Rd.

Collection Date/Time: 06/18/2020 12:34

Field ID: G4NW0434

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2177791	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P383460	
	EPA 300.0 Rev. 2.1	Chloride	3.2		mg Cl/L	P383738	
		Sulfate	0.95		mg SO4/L	P383741	
	SM 2120 B-2011	Color (true)	18		PCU	P383463	
	SM 2320 B-2011	Total Alkalinity	1.3	I	mg CaCO3/L	P383552	
	SM 2540 C-2011	TDS	18	I	mg/L	P383858	
	SM 2540 D-2011	TSS	3	I	mg/L	P383821	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P383556	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P383477	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.099	I	mg N/L	P383565	
2177795	EPA 353.2 Rev. 2.0	NO2NO3-N	0.29		mg N/L	P383495	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P383604	
	SM 5310 B-2011	Organic Carbon	2.3		mg C/L	P383709	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P383489	
	dissolved						

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: McDavid Creek 100m upstream SR99

Collection Date/Time: 06/18/2020 13:45

Field ID: G5NW0150

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2177792	EPA 180.1 Rev. 2.0	Turbidity	3.5		NTU	P383460	
	EPA 300.0 Rev. 2.1	Chloride	3.7		mg Cl/L	P383738	
		Sulfate	0.38	I	mg SO4/L	P383741	
	SM 2120 B-2011	Color (true)	37		PCU	P383463	
	SM 2320 B-2011	Total Alkalinity	1.5	I	mg CaCO3/L	P383553	
	SM 2540 C-2011	TDS	15	I	mg/L	P383859	
	SM 2540 D-2011	TSS	3	I	mg/L	P383822	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P383557	
2177796	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P383477	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.14	I	mg N/L	P383565	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.26		mg N/L	P383496	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P383604	
	SM 5310 B-2011	Organic Carbon	2.4		mg C/L	P383709	
2177800	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P383489	

Ref. Method and Comment:

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

Non-Conformance Report

NCR ID: 8310

Event(s)

NW-DIST-2020-06-19-01

Job(s)

TLH-2020-06-19-35

Sample(s)

2177793

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Sample Integrity

Observation: Sample container received with loose cap. Sample integrity compromised.

Resolution: Sample will be qualified as appropriate.

Authorized by/Date: Joshua Ayres 6/30/2020

The Non-Conformance Report details exceptions or problems encountered with the events/jobs/samples/test.
Please address questions to:

Chemistry	Colin Wright	(850) 245-8085
Biology	Cheryl Swanson	(850) 245-8177

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P383460

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383738

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383741

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383477

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383565

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383495

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383496

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383508

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383604

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: P383489

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

Reference Method: SM 2120 B-2011
Batch ID: P383463

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P383552

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

Reference Method: SM 2320 B-2011
Batch ID: P383553

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

Reference Method: SM 2540 C-2011
Batch ID: P383858

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P383859

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P383821

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P383822

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P383556

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 4500 F-C-2011
Batch ID: P383557

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P383709

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: P383738

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383741

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383477

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383565

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383495

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383496

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383508

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383604

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: P383489

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	92.6		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2120 B-2011
Batch ID: P383463

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.8		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P383552

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.2		P	93 - 104

Reference Method: SM 2320 B-2011
Batch ID: P383553

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P383556

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.1		P	90 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P383557

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.5		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P383709

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	97.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383738

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177725	Chloride	103		P	90 - 110
2177789	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383741

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177725	Sulfate	103		P	90 - 110
2177789	Sulfate	102		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383477

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177784	Ammonia-N	104	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383565

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177824	Kjeldahl Nitrogen	95.1	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383495

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177754	NO2NO3-N	96.0		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383496

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177796	NO2NO3-N	97.5		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383508

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177733	Total-P	104	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383604

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177490	Total-P	103	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177799	O-Phosphate-P	92.3	93.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P383556

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177783	Fluoride	99.4	97.9	P/P	94 - 107

Reference Method: SM 4500 F-C-2011
Batch ID: P383557

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177822	Fluoride	99.8	99.8	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P383709

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2177932	Organic Carbon	95.6	95.8	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P383460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177753	Turbidity	16.9	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383738

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177725	Chloride	0.216	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P383741

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177725	Sulfate	0.110	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P383477

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177784	Ammonia-N	0.236	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P383565

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177824	Kjeldahl Nitrogen	6.96	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177754	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P383496

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177796	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383508

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177733	Total-P	0.216	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P383604

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177490	Total-P	1.92	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P383489

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177799	O-Phosphate-P	1.61	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P383463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177752	Color (true)	1.78	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P383552

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177783	Total Alkalinity	1.13	Sample	P	0 - 8.1

Reference Method: SM 2320 B-2011
Batch ID: P383553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177822	Total Alkalinity	1.69	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P383858

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177731	TDS	5.21	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P383859

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177822	TDS	7.18	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P383556

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177783	Fluoride	0.965	Spike	P	0 - 2.8

Quality Assurance Report Precision

Reference Method: SM 4500 F-C-2011
Batch ID: P383557

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177822	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P383709

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2177932	Organic Carbon	0.214	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: A99430

Included Lab Sample IDs: 2177789, 2177790, 2177791, 2177792

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

Reference Method: SM 2120 B-2011

Run ID: A99431

Included Lab Sample IDs: 2177789, 2177790, 2177791, 2177792

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	100	101	P/P	90 - 115
Color (true)	99.5	100	P/P	90 - 115

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A99435

Included Lab Sample IDs: 2177793, 2177794, 2177795, 2177796

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A99440

Included Lab Sample IDs: 2177797, 2177799

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	90.5	90.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A99441

Included Lab Sample IDs: 2177798, 2177800

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	91.6	90.2	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A99442

Included Lab Sample IDs: 2177793, 2177794, 2177795, 2177796

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

Reference Method: SM 2320 B-2011

Run ID: A99462

Included Lab Sample IDs: 2177789, 2177790, 2177791, 2177792

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.6	99.2	P/P	90 - 110
Total Alkalinity	99.2	97.6	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A99462

Included Lab Sample IDs: 2177789, 2177790, 2177791, 2177792

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
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Quality Assurance Report Calibration Verification

Reference Method: SM 4500 F-C-2011

Run ID: A99462

Included Lab Sample IDs: 2177789, 2177790, 2177791, 2177792

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A99483

Included Lab Sample IDs: 2177793

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A99488

Included Lab Sample IDs: 2177793, 2177794, 2177795, 2177796

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.3	99.5	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A99535

Included Lab Sample IDs: 2177793, 2177794, 2177795, 2177796

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	98.1	99.2	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A99546

Included Lab Sample IDs: 2177789, 2177790, 2177791, 2177792

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.2	100	P/P	90 - 110
Chloride	99.7	99.2	P/P	90 - 110
Sulfate	100	100	P/P	90 - 110
Sulfate	100	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A99561

Included Lab Sample IDs: 2177794, 2177795, 2177796

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.8	97.0	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				16.9	
EPA 300.0 Rev. 2.1	Chloride	102	103	103	0.216	
	Sulfate	103	103	102	0.110	
EPA 350.1 Rev. 2.0	Ammonia-N	104	104	104		0.236
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	102	95.1	106		6.96
EPA 353.2 Rev. 2.0	NO2NO3-N	100	96.0			0.0
	NO2NO3-N	100	97.5			0.0
EPA 365.1 Rev. 2.0	Total-P	105	104	104		0.216
	Total-P	103	103	101		1.92
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	92.6	92.3	93.8		1.61
SM 2120 B-2011	Color (true)	98.8			1.78	
SM 2320 B-2011	Total Alkalinity	99.2			1.13	
	Total Alkalinity	101			1.69	
SM 2540 C-2011	TDS				5.21	
	TDS				7.18	
SM 4500 F-C-2011	Fluoride	97.1	99.4	97.9		0.965
	Fluoride	97.5	99.8	99.8		0.0
SM 5310 B-2011	Organic Carbon	97.6	95.6	95.8		0.214

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2177789, 2177790, 2177791, 2177792
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2177789, 2177790, 2177791, 2177792
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2177789, 2177790, 2177791, 2177792
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2177793, 2177794, 2177795, 2177796
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2177793, 2177794, 2177795, 2177796
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2177793, 2177794, 2177795, 2177796
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2177793, 2177794, 2177795, 2177796
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2177797, 2177798, 2177799, 2177800
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2177789, 2177790, 2177791, 2177792
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2177789, 2177790, 2177791, 2177792
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2177789, 2177790, 2177791, 2177792
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2177789, 2177790, 2177791, 2177792
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2177789, 2177790, 2177791, 2177792
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2177793, 2177794, 2177795, 2177796

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	06/19/2020			06/19/2020 15:56	Yen Ta	2177789, 2177790, 2177791, 2177792
EPA 300.0 Rev. 2.1	06/19/2020			06/24/2020 05:56	Elliott Rodriguez	2177789
	06/19/2020			06/24/2020 08:45	Elliott Rodriguez	2177790
	06/19/2020			06/24/2020 08:58	Elliott Rodriguez	2177791
	06/19/2020			06/24/2020 09:11	Elliott Rodriguez	2177792
EPA 350.1 Rev. 2.0	06/19/2020			06/21/2020 12:30	Ping Hua	2177793
	06/19/2020			06/21/2020 12:32	Ping Hua	2177794
	06/19/2020			06/21/2020 12:33	Ping Hua	2177795
	06/19/2020			06/21/2020 12:35	Ping Hua	2177796
EPA 351.2 Rev. 2.0	06/19/2020	06/23/2020 10:10	Sima Feizi	06/24/2020 11:07	Jhamieka S. Greenwood	2177793
	06/19/2020	06/23/2020 10:10	Sima Feizi	06/24/2020 11:08	Jhamieka S. Greenwood	2177794
	06/19/2020	06/23/2020 10:10	Sima Feizi	06/24/2020 11:10	Jhamieka S. Greenwood	2177795
	06/19/2020	06/23/2020 10:10	Sima Feizi	06/24/2020 11:12	Jhamieka S. Greenwood	2177796
EPA 353.2 Rev. 2.0	06/19/2020			06/22/2020 09:36	Beverly Y. Sanders	2177793
	06/19/2020			06/22/2020 09:37	Beverly Y. Sanders	2177794
	06/19/2020			06/22/2020 09:38	Beverly Y. Sanders	2177795
	06/19/2020			06/22/2020 09:45	Beverly Y. Sanders	2177796
EPA 365.1 Rev. 2.0	06/19/2020	06/22/2020 14:35	Yen Ta	06/24/2020 08:31	Lipi Saha	2177793
	06/19/2020	06/24/2020 11:09	Yen Ta	06/29/2020 07:59	Lipi Saha	2177794
	06/19/2020	06/24/2020 11:09	Yen Ta	06/29/2020 08:00	Lipi Saha	2177795
	06/19/2020	06/24/2020 11:09	Yen Ta	06/29/2020 08:01	Lipi Saha	2177796
EPA 365.1 Rev. 2.0 dissolved	06/19/2020			06/19/2020 17:43	Carlos Miranda	2177799
	06/19/2020			06/19/2020 17:46	Carlos Miranda	2177797
	06/19/2020			06/19/2020 18:57	Carlos Miranda	2177798
	06/19/2020			06/19/2020 18:58	Carlos Miranda	2177800
SM 2120 B-2011	06/19/2020			06/19/2020 17:11	Benjamin T. Nordmann	2177789
	06/19/2020			06/19/2020 17:12	Benjamin T. Nordmann	2177791
	06/19/2020			06/19/2020 17:13	Benjamin T. Nordmann	2177792
	06/19/2020			06/19/2020 17:21	Benjamin T. Nordmann	2177790
SM 2320 B-2011	06/19/2020			06/23/2020 03:31	Dale L. Simmons	2177789
	06/19/2020			06/23/2020 03:42	Dale L. Simmons	2177790
	06/19/2020			06/23/2020 03:51	Dale L. Simmons	2177791
	06/19/2020			06/23/2020 06:03	Dale L. Simmons	2177792
SM 2540 C-2011	06/19/2020			06/24/2020 13:02	Yijie Li	2177789, 2177790, 2177791, 2177792
SM 2540 D-2011	06/19/2020			06/24/2020 13:02	Yijie Li	2177789, 2177790, 2177791, 2177792
SM 4500 F-C-2011	06/19/2020			06/23/2020 03:31	Dale L. Simmons	2177789
	06/19/2020			06/23/2020 03:42	Dale L. Simmons	2177790
	06/19/2020			06/23/2020 03:51	Dale L. Simmons	2177791
	06/19/2020			06/23/2020 06:03	Dale L. Simmons	2177792
SM 5310 B-2011	06/19/2020			06/25/2020 22:14	David Boose	2177793

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	06/19/2020			06/25/2020 22:26	David Boose	21777794
	06/19/2020			06/25/2020 22:39	David Boose	21777795
	06/19/2020			06/25/2020 22:51	David Boose	21777796