Chemical Analysis Report

SW-DIST-2020-08-07-01

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

Event Description: **Irvin, Mountain, Dowling**
Request ID: **RQ-2020-06-01-09**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
13051 N. Telecom Parkway
Temple Terrace, FL 33637-0926
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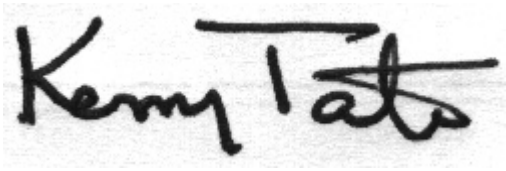
Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 26-AUG-2020 10:32



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: Irvin Lake @ Center **Collection Date/Time: 08/06/2020 11:45**

Field ID: G4SW0025 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2189203	EPA 180.1 Rev. 2.0	Turbidity	2.7		NTU	P385793	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P385892	
		Sulfate	3.4		mg SO4/L	P385897	
	SM 2120 B-2011	Color (true)	43		PCU	P385796	
	SM 2320 B-2011	Total Alkalinity	13	AJ	mg CaCO3/L	P385856	RPD
	SM 2540 C-2011	TDS	80		mg/L	P386179	
	SM 2540 D-2011	TSS	3	I	mg/L	P386220	
	SM 4500 F-C-2011	Fluoride	0.12		mg F/L	P385858	
2189206	EPA 350.1 Rev. 2.0	Ammonia-N	0.006	Y	mg N/L	P386081	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.83	Y	mg N/L	P386136	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P385822	
	EPA 365.1 Rev. 2.0	Total-P	0.040		mg P/L	P385870	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P385979	
2189209	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P385789	

Ref. Method and Comment:
SM 2320 B-2011: Refer to the Lab Analysis Report for an explanation of QC Codes.
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: Sample was left out at room temperature overnight, should be stored below 6 degC.
EPA 351.2 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

Sample Location: Mountain Lake @ Center **Collection Date/Time: 08/06/2020 10:40**

Field ID: G4SW0103 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2189204	EPA 180.1 Rev. 2.0	Turbidity	6.3		NTU	P385793	
	EPA 300.0 Rev. 2.1	Chloride	20		mg Cl/L	P385892	
		Sulfate	1.3		mg SO4/L	P385897	
	SM 2120 B-2011	Color (true)	51		PCU	P385796	
	SM 2320 B-2011	Total Alkalinity	25		mg CaCO3/L	P385856	RPD
	SM 2540 C-2011	TDS	97		mg/L	P386179	
	SM 2540 D-2011	TSS	7	I	mg/L	P386220	
	SM 4500 F-C-2011	Fluoride	0.13		mg F/L	P385858	
2189207	EPA 350.1 Rev. 2.0	Ammonia-N	0.010	Y	mg N/L	P386081	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.4	Y	mg N/L	P386136	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P385822	
	EPA 365.1 Rev. 2.0	Total-P	0.087		mg P/L	P385870	
	SM 5310 B-2011	Organic Carbon	17		mg C/L	P385979	
2189210	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P385789	

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: Sample was left out at room temperature overnight, should be stored below 6 degC.
EPA 351.2 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

Sample Location: Dowling Lake 2 **Collection Date/Time: 08/06/2020 12:20**

Field ID: G4SW0084 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2189205	EPA 180.1 Rev. 2.0	Turbidity	4.3		NTU	P385793	
	EPA 300.0 Rev. 2.1	Chloride	7.0		mg Cl/L	P385892	
		Sulfate	1.4		mg SO4/L	P385897	
	SM 2120 B-2011	Color (true)	57		PCU	P385796	
	SM 2320 B-2011	Total Alkalinity	61		mg CaCO3/L	P385856	RPD
	SM 2540 C-2011	TDS	96		mg/L	P386179	
	SM 2540 D-2011	TSS	6	I	mg/L	P386220	
	SM 4500 F-C-2011	Fluoride	0.12		mg F/L	P385858	
2189208	EPA 350.1 Rev. 2.0	Ammonia-N	0.006	Y	mg N/L	P386081	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.96	Y	mg N/L	P386136	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P385822	
	EPA 365.1 Rev. 2.0	Total-P	0.10		mg P/L	P385870	
	SM 5310 B-2011	Organic Carbon	12		mg C/L	P385979	
2189211	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.027		mg P/L	P385789	

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: Sample was left out at room temperature overnight, should be stored below 6 degC.
EPA 351.2 Rev. 2.0: Sample was left out at room temperature overnight, should be stored below 6 degC.

Non-Conformance Report

NCR ID: 8370

Event(s)	Job(s)	Sample(s)	Test(s)
SW-DIST-2020-08-07-01	TLH-2020-08-07-52	2189206	
SW-DIST-2020-08-07-01	TLH-2020-08-07-52	2189207	
SW-DIST-2020-08-07-01	TLH-2020-08-07-52	2189208	

NCR Type: CUSTODY **NCR Category: General**

Observation: Samples were not stored in refrigerator overnight on 08/12/2020.

Resolution: Samples were returned to refrigerator at 10:15 am on 08/13/2020. Data will be qualified as appropriate.

Authorized by/Date: Irina Carbone 8/25/2020

NCR ID: 8397

Event(s)	Job(s)	Sample(s)	Test(s)
SW-DIST-2020-08-07-01	TLH-2020-08-07-52	2189203	
SW-DIST-2020-08-07-01	TLH-2020-08-07-52	2189205	
SW-DIST-2020-08-07-01	TLH-2020-08-07-52	2189206	
SW-DIST-2020-08-07-01	TLH-2020-08-07-52	2189208	
SW-DIST-2020-08-07-01	TLH-2020-08-07-52	2189209	
SW-DIST-2020-08-07-01	TLH-2020-08-07-52	2189211	

NCR Type: SAMPLING **NCR Category: General**

Observation: Sample containers switched in the field for field IDs: G4SW0025 and G4SW0084.

Resolution: Field parameters switched to match information on containers.
Customers email attached to event file.
Biology and Chemistry supervisors notified

Authorized by/Date: Joshua Ayres 8/25/2020

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: P385793

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385892

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385897

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386081

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386136

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385822

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385870

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385789

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

Reference Method: SM 2120 B-2011
Batch ID: P385796

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Quality Assurance Report
Method Blank Results

Reference Method: SM 2320 B-2011
Batch ID: P385856

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

Reference Method: SM 2540 C-2011
Batch ID: P386179

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P386220

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P385858

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P385979

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: P385892

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385897

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386081

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386136

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: P385822

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385870

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: P385789

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

Reference Method: SM 2120 B-2011
Batch ID: P385796

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

Reference Method: SM 2320 B-2011
Batch ID: P385856

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

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-2011
Batch ID: P385858

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	100		P	90 - 106

Reference Method: SM 5310 B-2011
Batch ID: P385979

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.4		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385892

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189197	Chloride	104		P	90 - 110
2189215	Chloride	106		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385897

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189197	Sulfate	106		P	90 - 110
2189215	Sulfate	105		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386081

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189217	Ammonia-N	98.2	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386136

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189206	Kjeldahl Nitrogen	109	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385822

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189156	NO2NO3-N	90.5	91.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385870

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189155	Total-P	104	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385789

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189174	O-Phosphate-P	94.3	95.2	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P385858

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189203	Fluoride	98.8	98.8	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P385979

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2189372	Organic Carbon	98.0	98.3	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P385793

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189172	Turbidity	2.54	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385892

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189197	Chloride	0.647	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P385897

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189197	Sulfate	1.91	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P386081

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189217	Ammonia-N	0.927	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P386136

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189206	Kjeldahl Nitrogen	1.94	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P385822

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189156	NO2NO3-N	0.525	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P385870

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189155	Total-P	2.18	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P385789

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189174	O-Phosphate-P	0.828	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2120 B-2011
Batch ID: P385796

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189172	Color (true)	0.537	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P385856

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189203	Total Alkalinity	9.81	Sample	F	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P386179

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189172	TDS	2.67	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P385858

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189203	Fluoride	0.0	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P385979

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2189372	Organic Carbon	0.243	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: A100348
Included Lab Sample IDs: 2189209, 2189210, 2189211

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.4	98.0	P/P	90 - 110
O-Phosphate-P	98.0	97.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A100349
Included Lab Sample IDs: 2189203, 2189204, 2189205

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

Reference Method: SM 2120 B-2011
Run ID: A100351
Included Lab Sample IDs: 2189203, 2189204, 2189205

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	103	104	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A100367
Included Lab Sample IDs: 2189206, 2189207, 2189208

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	99.0	P/P	90 - 110

Reference Method: SM 2320 B-2011
Run ID: A100379
Included Lab Sample IDs: 2189203, 2189204, 2189205

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	98.2	99.6	P/P	90 - 110
Total Alkalinity	99.5	102	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Run ID: A100379
Included Lab Sample IDs: 2189203, 2189204, 2189205

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

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A100386
Included Lab Sample IDs: 2189203, 2189204, 2189205

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	104	P/P	90 - 110
Chloride	104	104	P/P	90 - 110
Sulfate	103	104	P/P	90 - 110
Sulfate	104	104	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A100415
Included Lab Sample IDs: 2189207, 2189208

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A100427
Included Lab Sample IDs: 2189206

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	97.0	98.0	P/P	90 - 110

Reference Method: SM 5310 B-2011
Run ID: A100436
Included Lab Sample IDs: 2189206, 2189207, 2189208

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	101	98.3	P/P	90 - 110
Organic Carbon	98.3	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A100478
Included Lab Sample IDs: 2189206, 2189207, 2189208

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.8	98.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A100512
Included Lab Sample IDs: 2189206, 2189207, 2189208

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	104	P/P	90 - 110
Kjeldahl Nitrogen	104	94.8	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					2.54	
EPA 300.0 Rev. 2.1	Chloride	103	104	106		0.647	
	Sulfate	104	106	105		1.91	
EPA 350.1 Rev. 2.0	Ammonia-N	98.4	98.2	99.2			0.927
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	101	109	106			1.94
EPA 353.2 Rev. 2.0	NO2NO3-N	97.5	90.5	91.0			0.525
EPA 365.1 Rev. 2.0	Total-P	103	104	107			2.18
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	94.3	95.2			0.828
SM 2120 B-2011	Color (true)	102				0.537	
SM 2320 B-2011	Total Alkalinity	102				9.81	
SM 2540 C-2011	TDS					2.67	
SM 4500 F-C-2011	Fluoride	100	98.8	98.8			0.0
SM 5310 B-2011	Organic Carbon	99.4	98.0	98.3			0.243

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2189203, 2189204, 2189205
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2189203, 2189204, 2189205
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2189203, 2189204, 2189205
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2189206, 2189207, 2189208
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2189206, 2189207, 2189208
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2189206, 2189207, 2189208
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2189206, 2189207, 2189208
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2189209, 2189210, 2189211
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2189203, 2189204, 2189205
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2189203, 2189204, 2189205
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2189203, 2189204, 2189205
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2189203, 2189204, 2189205
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2189203, 2189204, 2189205
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2189206, 2189207, 2189208

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	08/07/2020			08/07/2020 15:13	Blanca Fach	2189203, 2189204, 2189205
EPA 300.0 Rev. 2.1	08/07/2020			08/09/2020 01:51	Julia Storbeck	2189203
	08/07/2020			08/09/2020 02:03	Julia Storbeck	2189204
	08/07/2020			08/09/2020 02:40	Julia Storbeck	2189205
EPA 350.1 Rev. 2.0	08/07/2020			08/15/2020 13:01	Ping Hua	2189206
	08/07/2020			08/15/2020 13:02	Ping Hua	2189207
	08/07/2020			08/15/2020 13:03	Ping Hua	2189208
EPA 351.2 Rev. 2.0	08/07/2020	08/17/2020 14:20	David Boose	08/18/2020 11:22	Jhamieka S. Greenwood	2189206
	08/07/2020	08/17/2020 14:20	David Boose	08/18/2020 11:39	Jhamieka S. Greenwood	2189207
	08/07/2020	08/17/2020 14:20	David Boose	08/18/2020 11:40	Jhamieka S. Greenwood	2189208
EPA 353.2 Rev. 2.0	08/07/2020			08/10/2020 08:56	Beverly Y. Sanders	2189206
	08/07/2020			08/10/2020 08:57	Beverly Y. Sanders	2189207
	08/07/2020			08/10/2020 08:58	Beverly Y. Sanders	2189208
EPA 365.1 Rev. 2.0	08/07/2020	08/11/2020 11:28	Yen Ta	08/12/2020 15:21	Benjamin T. Nordmann	2189207
	08/07/2020	08/11/2020 11:28	Yen Ta	08/12/2020 15:22	Benjamin T. Nordmann	2189208
	08/07/2020	08/11/2020 11:28	Yen Ta	08/13/2020 08:45	Lipi Saha	2189206
EPA 365.1 Rev. 2.0 dissolved	08/07/2020			08/07/2020 15:37	Samantha Davila	2189209
	08/07/2020			08/07/2020 15:43	Samantha Davila	2189210
	08/07/2020			08/07/2020 15:44	Samantha Davila	2189211
SM 2120 B-2011	08/07/2020			08/07/2020 18:50	Julia Storbeck	2189203
	08/07/2020			08/07/2020 18:51	Julia Storbeck	2189204
	08/07/2020			08/07/2020 18:52	Julia Storbeck	2189205
SM 2320 B-2011	08/07/2020			08/10/2020 16:30	Dale L. Simmons	2189203
	08/07/2020			08/10/2020 20:53	Dale L. Simmons	2189204
	08/07/2020			08/10/2020 21:06	Dale L. Simmons	2189205
SM 2540 C-2011	08/07/2020			08/12/2020 15:12	Yijie Li	2189203, 2189204, 2189205
SM 2540 D-2011	08/07/2020			08/12/2020 15:12	Yijie Li	2189203, 2189204, 2189205
SM 4500 F-C-2011	08/07/2020			08/10/2020 16:20	Dale L. Simmons	2189203
	08/07/2020			08/10/2020 20:53	Dale L. Simmons	2189204
	08/07/2020			08/10/2020 21:06	Dale L. Simmons	2189205
SM 5310 B-2011	08/07/2020			08/12/2020 16:13	David Boose	2189206
	08/07/2020			08/12/2020 16:28	David Boose	2189207
	08/07/2020			08/12/2020 17:06	David Boose	2189208