

Chemical Analysis Report

CEN-DIST-2020-07-02-01

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

Event Description: **Banana, Minnie, Blue, N/S Talmadge**
Request ID: **RQ-2020-06-29-44**
Customer: **CEN-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Natalie Ayala

For additional information please contact
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Certified by: Colin Wright, Program Administrator

Date Certified: 24-JUL-2020 10:34



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: Blue Lake @ Center

Collection Date/Time: 07/01/2020 11:53

Field ID: G2CE0232

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2180447	EPA 180.1 Rev. 2.0	Turbidity	1.7		NTU	P384011	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P384896	
		Sulfate	9.5		mg SO4/L	P384900	
	SM 2120 B-2011	Color (true)	100		PCU	P384016	
	SM 2320 B-2011	Total Alkalinity	35		mg CaCO3/L	P384611	
	SM 2540 C-2011	TDS	130		mg/L	P384664	
	SM 2540 D-2011	TSS	2	U	mg/L	P384167	
	SM 4500 F-C-2011	Fluoride	0.069	I	mg F/L	P384389	
2180450	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P384039	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.2		mg N/L	P384277	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P384116	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P384400	
	SM 5310 B-2011	Organic Carbon	24		mg C/L	P384264	
2180453	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P384087	

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 Park @ Center

Collection Date/Time: 07/01/2020 13:22

Field ID: G2CE0009

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2180451	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I Y	mg N/L	P384039	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.55	Y	mg N/L	P384277	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	UY	mg N/L	P384117	
	EPA 365.1 Rev. 2.0	Total-P	0.021	Y	mg P/L	P384400	
	SM 5310 B-2011	Organic Carbon	6.7	Y	mg C/L	P384264	
2180454	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P384087	

Ref. Method and Comment:

EPA 350.1 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 351.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 353.2 Rev. 2.0: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

EPA 365.1 Rev. 2.0: Total-P: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

SM 5310 B-2011: The sample was received unpreserved: pH > 2. Sample preserved in laboratory.

Sample Location: Lake Gem @ Center

Collection Date/Time: 07/01/2020 13:36

Field ID: G2CE0204

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2180449	EPA 180.1 Rev. 2.0	Turbidity	2.5		NTU	P384011	
	EPA 300.0 Rev. 2.1	Chloride	9.6	A	mg Cl/L	P384558	
		Sulfate	18	A	mg SO4/L	P384560	
	SM 2120 B-2011	Color (true)	11		PCU	P384016	
	SM 2320 B-2011	Total Alkalinity	66	A	mg CaCO3/L	P384611	
	SM 2540 C-2011	TDS	124	A	mg/L	P384665	
	SM 2540 D-2011	TSS	5	IA	mg/L	P384168	
	SM 4500 F-C-2011	Fluoride	0.058	I	mg F/L	P384389	
2180452	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P384040	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.65		mg N/L	P384277	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P384117	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P384402	
	SM 5310 B-2011	Organic Carbon	7.2		mg C/L	P384264	
2180455	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P384087	

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: 8336

Event(s)

CEN-DIST-2020-07-02-01

Job(s)

TLH-2020-07-02-39

Sample(s)

2180451

Test(s)

NCR Type: SHIPPING/RECEIVING

NCR Category: Preservation Not Intact

Observation: Sample not preserved to pH < 2.

Resolution: Sample preserved in the laboratory on 7/2/20 by Ian McCoy.
H2SO4 Lot# SA9203100 | Expiration Date: 07/22/2020
Data will be qualified as appropriate.

Authorized by/Date: Joshua Ayres 7/20/2020

NCR ID: 8337

Event(s)

CEN-DIST-2020-07-02-01

Job(s)

TLH-2020-07-02-39

Sample(s)

2180448

Test(s)

NCR Type: SAMPLING

NCR Category: Improper Preservation

Observation: Sample has pH < 2.

Resolution: Field pH was reported as 7.94. Sample appears to be preserved with acid by mistake.
Customer Natalie Ayala contacted on 7/6/20 by Josh Ayres. Analyses canceled.

Authorized by/Date: Joshua Ayres 7/24/2020

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: P384011

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384558

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384560

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384896

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384900

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384039

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384040

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384277

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384116

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384117

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384400

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384402

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384087

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

Reference Method: SM 2120 B-2011
Batch ID: P384016

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P384611

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

Reference Method: SM 2540 C-2011
Batch ID: P384664

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P384665

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P384167

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P384168

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P384389

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P384264

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: P384558

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384560

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384896

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384900

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	95.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384039

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384040

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384277

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	107		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384116

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384117

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384400

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	108		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384402

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: P384087

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.0		P	90 - 110

Reference Method: SM 2120 B-2011
Batch ID: P384016

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	98.1		P	85 - 115

Reference Method: SM 2320 B-2011
Batch ID: P384611

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.5		P	93 - 104

Reference Method: SM 4500 F-C-2011
Batch ID: P384389

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

Reference Method: SM 5310 B-2011
Batch ID: P384264

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	100		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384558

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180449	Chloride	103		P	90 - 110
2180537	Chloride	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384560

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180449	Sulfate	102		P	90 - 110
2180537	Sulfate	102		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384896

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180294	Chloride	98.6		P	90 - 110
2180401	Chloride	99.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384900

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180294	Sulfate	96.3		P	90 - 110
2180401	Sulfate	96.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384039

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180432	Ammonia-N	98.6	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384040

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180452	Ammonia-N	98.5	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384277

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180451	Kjeldahl Nitrogen	109	109	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384116

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180368	NO2NO3-N	98.0	97.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384117

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384117

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180451	NO2NO3-N	99.5	99.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384400

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180368	Total-P	107	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384402

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180472	Total-P	107	109	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384087

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180435	O-Phosphate-P	98.0	99.2	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P384389

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180449	Fluoride	98.7	98.2	P/P	94 - 107

Reference Method: SM 5310 B-2011
Batch ID: P384264

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2180452	Organic Carbon	101	103	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P384011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180427	Turbidity	5.48	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384558

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180449	Chloride	0.0178	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384560

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180449	Sulfate	0.270	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384896

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180294	Chloride	0.142	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P384900

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180294	Sulfate	0.493	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384039

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180432	Ammonia-N	0.360	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P384040

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180452	Ammonia-N	0.296	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P384277

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180451	Kjeldahl Nitrogen	0.0161	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384116

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180368	NO2NO3-N	0.284	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P384117

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180451	NO2NO3-N	0.504	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180368	Total-P	1.22	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P384402

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180472	Total-P	1.47	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P384087

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180435	O-Phosphate-P	1.22	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P384016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180431	Color (true)	1.32	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P384611

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180449	Total Alkalinity	0.158	Sample	P	0 - 8.1

Reference Method: SM 2540 C-2011
Batch ID: P384664

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180431	TDS	3.15	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 C-2011
Batch ID: P384665

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180449	TDS	3.23	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P384389

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180449	Fluoride	0.462	Spike	P	0 - 2.8

Reference Method: SM 5310 B-2011
Batch ID: P384264

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2180452	Organic Carbon	1.09	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: A99661

Included Lab Sample IDs: 2180447, 2180449

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

Reference Method: SM 2120 B-2011

Run ID: A99662

Included Lab Sample IDs: 2180447, 2180449

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.8	101	P/P	90 - 115

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A99668

Included Lab Sample IDs: 2180450, 2180451, 2180452

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.5	98.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A99692

Included Lab Sample IDs: 2180453, 2180454, 2180455

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.5	99.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A99705

Included Lab Sample IDs: 2180450, 2180451, 2180452

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

Reference Method: SM 5310 B-2011

Run ID: A99754

Included Lab Sample IDs: 2180450, 2180451, 2180452

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.0	102	P/P	90 - 110
Organic Carbon	99.1	99.0	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A99792

Included Lab Sample IDs: 2180447, 2180449

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A99796

Included Lab Sample IDs: 2180450, 2180451, 2180452

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A99796

Included Lab Sample IDs: 2180450, 2180451, 2180452

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	101	99.8	P/P	90 - 110
Kjeldahl Nitrogen	99.8	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A99844

Included Lab Sample IDs: 2180450, 2180451, 2180452

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	98.5	P/P	90 - 110
Total-P	98.5	97.0	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A99856

Included Lab Sample IDs: 2180449

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.6	98.9	P/P	90 - 110
Sulfate	98.8	99.1	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A99877

Included Lab Sample IDs: 2180447, 2180449

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	98.6	P/P	90 - 110
Total Alkalinity	98.6	99.6	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A99978

Included Lab Sample IDs: 2180447

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	101	P/P	90 - 110
Sulfate	101	101	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				5.48	
EPA 300.0 Rev. 2.1	Chloride	101	103	102	0.0178	
	Chloride	97.4	98.6	99.1	0.142	
	Sulfate	100	102	102	0.270	
	Sulfate	95.9	96.3	96.8	0.493	
EPA 350.1 Rev. 2.0	Ammonia-N	102	98.6	99.0		0.360
	Ammonia-N	101	98.5	98.8		0.296
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	107	109	109		0.0161
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	99.0	98.0	97.5		0.284
	NO ₂ NO ₃ -N	99.0	99.5	99.0		0.504
EPA 365.1 Rev. 2.0	Total-P	108	107	105		1.22
	Total-P	103	107	109		1.47
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.0	98.0	99.2		1.22
SM 2120 B-2011	Color (true)	98.1			1.32	
SM 2320 B-2011	Total Alkalinity	99.5			0.158	
SM 2540 C-2011	TDS				3.15	
	TDS				3.23	
SM 4500 F-C-2011	Fluoride	100	98.7	98.2		0.462
SM 5310 B-2011	Organic Carbon	100	101	103		1.09

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2180447, 2180449
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2180447, 2180449
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2180447, 2180449
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2180450, 2180451, 2180452
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2180450, 2180451, 2180452
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2180450, 2180451, 2180452
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2180450, 2180451, 2180452
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2180453, 2180454, 2180455
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2180447, 2180449
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2180447, 2180449
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2180447, 2180449
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2180447, 2180449
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2180447, 2180449
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2180450, 2180451, 2180452

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	07/02/2020			07/02/2020 14:42	Yen Ta	2180447, 2180449
EPA 300.0 Rev. 2.1	07/02/2020			07/09/2020 00:46	Elliott Rodriguez	2180449
	07/02/2020			07/17/2020 00:29	Julia Storbeck	2180447
EPA 350.1 Rev. 2.0	07/02/2020			07/05/2020 20:59	Ping Hua	2180450
	07/02/2020			07/05/2020 21:00	Ping Hua	2180451
	07/02/2020			07/05/2020 21:06	Ping Hua	2180452
EPA 351.2 Rev. 2.0	07/02/2020	07/09/2020 09:20	Sima Feizi	07/10/2020 13:04	Jhamieka S. Greenwood	2180451
	07/02/2020	07/09/2020 09:20	Sima Feizi	07/10/2020 13:17	Jhamieka S. Greenwood	2180450
	07/02/2020	07/09/2020 09:20	Sima Feizi	07/10/2020 13:19	Jhamieka S. Greenwood	2180452
EPA 353.2 Rev. 2.0	07/02/2020			07/07/2020 09:02	Beverly Y. Sanders	2180450
	07/02/2020			07/07/2020 09:09	Beverly Y. Sanders	2180451
	07/02/2020			07/07/2020 09:15	Beverly Y. Sanders	2180452
EPA 365.1 Rev. 2.0	07/02/2020	07/10/2020 13:26	Yen Ta	07/14/2020 07:54	Lipi Saha	2180450
	07/02/2020	07/10/2020 13:26	Yen Ta	07/14/2020 07:55	Lipi Saha	2180451
	07/02/2020	07/10/2020 13:26	Yen Ta	07/14/2020 08:09	Lipi Saha	2180452
EPA 365.1 Rev. 2.0 dissolved	07/02/2020			07/02/2020 17:19	Carlos Miranda	2180453
	07/02/2020			07/02/2020 17:20	Carlos Miranda	2180454
	07/02/2020			07/02/2020 17:21	Carlos Miranda	2180455
SM 2120 B-2011	07/02/2020			07/02/2020 16:02	Madeline Gruver	2180447
	07/02/2020			07/02/2020 16:04	Madeline Gruver	2180449
SM 2320 B-2011	07/02/2020			07/13/2020 20:49	Dale L. Simmons	2180449
	07/02/2020			07/13/2020 23:02	Dale L. Simmons	2180447
SM 2540 C-2011	07/02/2020			07/06/2020 19:14	Madeline Gruver	2180447, 2180449
SM 2540 D-2011	07/02/2020			07/06/2020 19:14	Madeline Gruver	2180447, 2180449
SM 4500 F-C-2011	07/02/2020			07/09/2020 01:41	Dale L. Simmons	2180449
	07/02/2020			07/09/2020 03:25	Dale L. Simmons	2180447
SM 5310 B-2011	07/02/2020			07/08/2020 15:18	David Boose	2180452
	07/02/2020			07/08/2020 17:46	David Boose	2180450
	07/02/2020			07/08/2020 18:01	David Boose	2180451