

Chemical Analysis Report

TLH-ROC-2021-06-08-01

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

Event Description: **Run 13**
Request ID: **RQ-2021-06-07-26**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 30-JUN-2021 10:51

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

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: N Bay1

Collection Date/Time: 06/08/2021 10:30

Field ID: G3TLHR0021

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2253306	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P399384	
	EPA 300.0 Rev. 2.1	Bromide	35		mg Br/L	P399632	
	SM 2320 B-2011	Total Alkalinity	79	A	mg CaCO3/L	P399898	
	SM 2540 D-2011	TSS	4	I Q	mg/L	P399859	
	SM 4500 F-C-2011	Fluoride	0.72		mg F/L	P400025	
2253307	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P399943	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29	I	mg N/L	P400008	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.005	I	mg N/L	P399492	
	EPA 365.1 Rev. 2.0	Total-P	0.010		mg P/L	P399816	
	SM 5310 B-2011	Organic Carbon	3.4		mg C/L	P399815	
2253308	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P399369	

Ref. Method and Comment:

SM 2540 D-2011: The sample was reanalyzed out of holding time because of analytical difficulties.

SM 4500 F-C-2011: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Bayou George Creek @ US231

Collection Date/Time: 06/08/2021 11:20

Field ID: G3TLHR0030

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2253303	EPA 180.1 Rev. 2.0	Turbidity	4.8		NTU	P399384	
	EPA 300.0 Rev. 2.1	Chloride	6.7	A	mg Cl/L	P399617	
		Sulfate	2.8	A	mg SO4/L	P399619	
	SM 2120 B-2011	Color (true)	76		PCU	P399390	RPD
	SM 2320 B-2011	Total Alkalinity	51		mg CaCO3/L	P399897	
	SM 2540 C-2011	TDS	77		mg/L	P399792	
	SM 2540 D-2011	TSS	2	I	mg/L	P399680	
	SM 4500 F-C-2011	Fluoride	0.036	I	mg F/L	P399899	
2253304	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P399646	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.27		mg N/L	P400220	MS
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.084		mg N/L	P399557	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P399850	
	SM 5310 B-2011	Organic Carbon	5.1		mg C/L	P399771	
2253305	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P399368	

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: P399384

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399617

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399619

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399632

Component	Result	Code	Units
Bromide	0.013	U	mg Br/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399646

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399943

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400008

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400220

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399492

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: P399557

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P399816

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P399850

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P399368

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P399369

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

Reference Method: SM 2120 B-2011
Batch ID: P399390

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P399897

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

Reference Method: SM 2320 B-2011
Batch ID: P399898

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

Reference Method: SM 2540 C-2011
Batch ID: P399792

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 2540 D-2011
Batch ID: P399680

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P399859

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P399899

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-2011
Batch ID: P400025

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P399771

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-2011
Batch ID: P399815

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: P399617

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.6		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399619

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.1		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399632

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399646

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399943

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400008

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	94.8		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400220

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.6		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399492

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399557

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P399816

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P399850

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: P399368

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P399369

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

Reference Method: SM 2120 B-2011
Batch ID: P399390

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.1		P	90 - 110

Reference Method: SM 2320 B-2011
Batch ID: P399897

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	94 - 106

Reference Method: SM 2320 B-2011
Batch ID: P399898

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	99.5		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P399899

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

Reference Method: SM 4500 F-C-2011
Batch ID: P400025

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-2011
Batch ID: P399771

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.5		P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P399815

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	94.5		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399617

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2253303	Chloride	97.8		P	90 - 110
2253358	Chloride	97.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399619

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2253303	Sulfate	98.0		P	90 - 110
2253358	Sulfate	97.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399632

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2250813	Bromide	99.5		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399646

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2253342	Ammonia-N	94.4	98.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399943

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2253307	Ammonia-N	97.6	97.0	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400008

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2253035	Kjeldahl Nitrogen	95.4	104	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400220

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2256239	Kjeldahl Nitrogen	99.5	115	P/F	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399492

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2253033	NO2NO3-N	103	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399557

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2253304	NO2NO3-N	99.6	99.6	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P399816

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2253037	Total-P	97.6	98.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P399850

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2253304	Total-P	103	103	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P399368

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2252713	O-Phosphate-P	97.4	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P399369

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2252722	O-Phosphate-P	99.3	100	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P399899

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2252615	Fluoride	101	101	P/P	92 - 107

Reference Method: SM 5310 B-2011
Batch ID: P399771

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2253343	Organic Carbon	95.5	96.1	P/P	85 - 115

Reference Method: SM 5310 B-2011
Batch ID: P399815

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2253460	Organic Carbon	94.1	95.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P399384

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253008	Turbidity	5.34	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399617

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253303	Chloride	1.12	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399619

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253303	Sulfate	0.0323	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P399632

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2250813	Bromide	0.811	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399646

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253342	Ammonia-N	3.46	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P399943

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253307	Ammonia-N	0.529	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400008

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253035	Kjeldahl Nitrogen	7.24	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P400220

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2256239	Kjeldahl Nitrogen	7.91	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399492

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253033	NO2NO3-N	1.47	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P399557

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253304	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P399816

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253037	Total-P	0.948	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P399850

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253304	Total-P	0.488	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P399368

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2252713	O-Phosphate-P	1.83	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P399369

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2252722	O-Phosphate-P	0.635	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P399390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253016	Color (true)	20.7	Sample	F	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P399897

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2252615	Total Alkalinity	0.205	Sample	P	0 - 5.2

Quality Assurance Report Precision

Reference Method: SM 2320 B-2011
 Batch ID: P399898

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253306	Total Alkalinity	0.670	Sample	P	0 - 5.2

Reference Method: SM 2540 C-2011
 Batch ID: P399792

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2252680	TDS	0.590	Sample	P	0 - 10

Reference Method: SM 2540 D-2011
 Batch ID: P399859

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2254324	TSS	5.99	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
 Batch ID: P399899

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2252615	Fluoride	0.0	Spike	P	0 - 2.1

Reference Method: SM 4500 F-C-2011
 Batch ID: P400025

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2255537	Fluoride	0.457	Spike	P	0 - 2.1

Reference Method: SM 5310 B-2011
 Batch ID: P399771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253343	Organic Carbon	0.487	Spike	P	0 - 20

Reference Method: SM 5310 B-2011
 Batch ID: P399815

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2253460	Organic Carbon	0.944	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: A105940

Included Lab Sample IDs: 2253305, 2253308

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.9	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A105945

Included Lab Sample IDs: 2253303, 2253306

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.0	99.0	P/P	95 - 105

Reference Method: SM 2120 B-2011

Run ID: A105947

Included Lab Sample IDs: 2253303

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A105956

Included Lab Sample IDs: 2253303

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.8	100	P/P	90 - 110
Sulfate	98.1	99.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A105984

Included Lab Sample IDs: 2253307

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	103	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A106016

Included Lab Sample IDs: 2253304

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A106041

Included Lab Sample IDs: 2253306

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	95.6	96.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A106044

Included Lab Sample IDs: 2253304

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.9	98.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-2011

Run ID: A106104

Included Lab Sample IDs: 2253304

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.0	96.2	P/P	90 - 110

Reference Method: SM 5310 B-2011

Run ID: A106122

Included Lab Sample IDs: 2253307

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.6	97.6	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A106152

Included Lab Sample IDs: 2253303, 2253306

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	97.2	P/P	90 - 110
Total Alkalinity	99.7	99.2	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A106152

Included Lab Sample IDs: 2253303

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	104	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106165

Included Lab Sample IDs: 2253304, 2253307

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A106175

Included Lab Sample IDs: 2253307

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.1	98.6	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A106203

Included Lab Sample IDs: 2253306

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A106277

Included Lab Sample IDs: 2253307

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: A106277

Included Lab Sample IDs: 2253307

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	94.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A106324

Included Lab Sample IDs: 2253304

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	94.9	98.5	P/P	90 - 110

* Pass/Fail determinations are made for each bracketing calibration verification check.

Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.

Where they are different, both control limits are provided.

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 180.1 Rev. 2.0	Turbidity				5.34	
EPA 300.0 Rev. 2.1	Bromide	98.0	99.5		0.811	
	Chloride	97.6	97.8	97.3	1.12	
	Sulfate	98.1	98.0	97.2	0.0323	
	Ammonia-N	98.4	94.4	98.0		3.46
EPA 350.1 Rev. 2.0	Ammonia-N	100	97.6	97.0		0.529
	Kjeldahl Nitrogen	94.8	95.4	104		7.24
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.6	99.5	115		7.91
	NO2NO3-N	102	103	102		1.47
EPA 353.2 Rev. 2.0	NO2NO3-N	102	99.6	99.6		0.0
	Total-P	104	97.6	98.5		0.948
EPA 365.1 Rev. 2.0	Total-P	104	103	103		0.488
	O-Phosphate-P	100	97.4	99.2		1.83
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	99.3	100		0.635
SM 2120 B-2011	Color (true)	99.1			20.7	
SM 2320 B-2011	Total Alkalinity	101			0.205	
	Total Alkalinity	99.5			0.670	
SM 2540 C-2011	TDS				0.590	
SM 2540 D-2011	TSS				5.99	
SM 4500 F-C-2011	Fluoride	101	101	101		0.0
	Fluoride	99.8				0.457
SM 5310 B-2011	Organic Carbon	96.5	95.5	96.1		0.487
	Organic Carbon	94.5	94.1	95.2		0.944

Reference Method Descriptions

Method	Description	Associated Samples
EPA 180.1 Rev. 2.0	Turbidity in aqueous matrices	2253303, 2253306
EPA 300.0 Rev. 2.1	Bromide in aqueous matrices	2253306
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2253303
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2253303
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2253304, 2253307
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2253304, 2253307
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2253304, 2253307
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2253304, 2253307
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2253305, 2253308
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2253303
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO3/L	2253303, 2253306
SM 2540 C-2011	Total Dissolved Solids in aqueous matrices	2253303
SM 2540 D-2011	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2253303, 2253306
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2253303, 2253306
SM 5310 B-2011	Nonpurgeable Organic Carbon in aqueous matrices	2253304, 2253307

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	06/08/2021			06/08/2021 16:44	Yen Ta	2253303, 2253306
EPA 300.0 Rev. 2.1	06/08/2021			06/11/2021 12:07	Lipi Saha	2253306
	06/08/2021			06/11/2021 20:08	Lipi Saha	2253303
EPA 350.1 Rev. 2.0	06/08/2021			06/14/2021 15:07	Roberta Tatti	2253304
	06/08/2021			06/18/2021 12:46	Roberta Tatti	2253307
EPA 351.2 Rev. 2.0	06/08/2021	06/21/2021 14:57	Benjamin T. Nordmann	06/24/2021 15:22	Letuzia M De Oliveira	2253307
	06/08/2021	06/25/2021 16:59	Benjamin T. Nordmann	06/28/2021 11:49	Letuzia M De Oliveira	2253304
EPA 353.2 Rev. 2.0	06/08/2021			06/10/2021 11:43	Beverly Y. Sanders	2253307
	06/08/2021			06/11/2021 10:52	Beverly Y. Sanders	2253304
EPA 365.1 Rev. 2.0	06/08/2021	06/17/2021 11:39	Shengyu Ding	06/18/2021 09:53	Shengyu Ding	2253307
	06/08/2021	06/17/2021 11:39	Shengyu Ding	06/18/2021 10:11	Shengyu Ding	2253304
EPA 365.1 Rev. 2.0 dissolved	06/08/2021			06/08/2021 14:53	Lipi Saha	2253305
	06/08/2021			06/08/2021 14:54	Lipi Saha	2253308
SM 2120 B-2011	06/08/2021			06/08/2021 17:20	Madeline Gruver	2253303
SM 2320 B-2011	06/08/2021			06/17/2021 18:34	Dale L. Simmons	2253303
	06/08/2021			06/17/2021 23:46	Dale L. Simmons	2253306
SM 2540 C-2011	06/08/2021			06/11/2021 15:27	Yijie Li	2253303
SM 2540 D-2011	06/08/2021			06/11/2021 15:27	Yijie Li	2253303
	06/08/2021			06/15/2021 14:12	Yijie Li	2253306
SM 4500 F-C-2011	06/08/2021			06/17/2021 18:34	Dale L. Simmons	2253303
	06/08/2021			06/22/2021 03:21	Patrick M. Roche	2253306
SM 5310 B-2011	06/08/2021			06/16/2021 00:40	Touraj Touran	2253304
	06/08/2021			06/16/2021 02:43	Madeline Gruver	2253307