

Chemical Analysis Report

SW-DIST-2018-06-20-01

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

Event Description: **LVI Lakes**
Request ID: **RQ-2018-06-18-03**
Customer: **SW-DIST**
Project ID: **SMP**

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Certified by: Colin Wright, Program Administrator

Date Certified: 13-JUL-2018 14:35

A handwritten signature in black ink, appearing to read "Colin Wright", is positioned on a light gray rectangular 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 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: SUNSHINE LAKE

Collection Date/Time: 06/19/2018 12:04

Field ID: G1SW0072

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2002245	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P347228	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P347539	
		Sulfate	3.1		mg SO4/L	P347543	
	SM 2120 B	Color (true)	56	A	PCU	P347209	
	SM 2320 B-97	Total Alkalinity	16		mg CaCO3/L	P347842	
	SM 2540 C-97	TDS	79		mg/L	P347759	
	SM 2540 D-97	TSS	2	I	mg/L	P347733	
	SM 4500 F-C-97	Fluoride	0.071	I	mg F/L	P347846	
2002247	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P347352	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.81		mg N/L	P348067	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P347511	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P347426	
	SM 5310 B-00	Organic Carbon	13		mg C/L	P347527	
2002249	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P347213	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: LAKE JOSEPHINE

Collection Date/Time: 06/19/2018 10:35

Field ID: G1SW0105

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2002246	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P347228	
	EPA 300.0 Rev. 2.1	Chloride	43		mg Cl/L	P347539	
		Sulfate	10		mg SO4/L	P347543	
	SM 2120 B	Color (true)	170		PCU	P347208	
	SM 2320 B-97	Total Alkalinity	27	A	mg CaCO3/L	P347841	
	SM 2540 C-97	TDS	154	A	mg/L	P347759	
	SM 2540 D-97	TSS	3	IA	mg/L	P347733	
	SM 4500 F-C-97	Fluoride	0.13		mg F/L	P347845	
2002248	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P347352	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.1		mg N/L	P348067	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P347512	
	EPA 365.1 Rev. 2.0	Total-P	0.038		mg P/L	P347426	
	SM 5310 B-00	Organic Carbon	22		mg C/L	P347697	
2002250	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P347213	

Ref. Method and Comment:

SM 2540 D-97: 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: P347228

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347539

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347543

Component	Result	Code	Units
Sulfate	0.20	U	mg SO ₄ /L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347352

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348067

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347511

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347512

Component	Result	Code	Units
NO ₂ NO ₃ -N	0.004	U	mg N/L

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347426

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347213

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B
Batch ID: P347208

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B
Batch ID: P347209

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P347841

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

Reference Method: SM 2320 B-97
Batch ID: P347842

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

Reference Method: SM 2540 C-97
Batch ID: P347759

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P347733

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P347845

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P347846

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P347527

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P347697

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: P347539

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.7		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347543

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.2		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347352

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: P348067

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347511

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: P347512

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347426

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	96.4		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347213

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

Reference Method: SM 2320 B-97
Batch ID: P347841

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 107

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P347842

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P347845

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.5		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P347846

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.8		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P347527

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.7		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P347697

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.2		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347539

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002065	Chloride	101		P	90 - 110
2002171	Chloride	101		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347543

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002065	Sulfate	101		P	90 - 110
2002171	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347352

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002230	Ammonia-N	101	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348067

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002247	Kjeldahl Nitrogen	100	106	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347511

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002230	NO2NO3-N	102	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347512

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002248	NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347426

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002230	Total-P	95.4	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347213

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002249	O-Phosphate-P	95.1	96.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P347845

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002246	Fluoride	96.6	97.2	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P347846

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002385	Fluoride	96.3	96.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P347527

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002105	Organic Carbon	96.6	95.7	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P347697

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2002390	Organic Carbon	94.6	95.6	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P347228

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002171	Turbidity	7.24	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347539

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002065	Chloride	2.62	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P347543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002065	Sulfate	0.864	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P347352

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002230	Ammonia-N	0.0562	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P348067

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002247	Kjeldahl Nitrogen	3.21	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347511

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002230	NO2NO3-N	0.487	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P347512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002248	NO2NO3-N	0.496	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P347426

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002230	Total-P	3.52	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P347213

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002249	O-Phosphate-P	1.46	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P347208

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002227	Color (true)	0.184	Sample	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P347209

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002245	Color (true)	0.109	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P347841

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002246	Total Alkalinity	0.581	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P347842

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002385	Total Alkalinity	0.588	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P347759

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002246	TDS	5.83	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P347845

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002246	Fluoride	0.480	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P347846

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002385	Fluoride	0.0	Spike	P	0 - 3.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P347527

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002105	Organic Carbon	0.795	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P347697

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2002390	Organic Carbon	0.958	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A84722

Included Lab Sample IDs: 2002245, 2002246

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	107	P/P	85 - 115
Color (true)	101	101	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A84723

Included Lab Sample IDs: 2002249, 2002250

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	100	P/P	90 - 110
O-Phosphate-P	97.4	96.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A84731

Included Lab Sample IDs: 2002245, 2002246

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.0	99.5	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A84777

Included Lab Sample IDs: 2002247, 2002248

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A84842

Included Lab Sample IDs: 2002247, 2002248

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	100	100	P/P	90 - 110
NO2NO3-N	100	101	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A84844

Included Lab Sample IDs: 2002247

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	95.6	96.8	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A84847

Included Lab Sample IDs: 2002245, 2002246

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	101	98.8	P/P	90 - 110
Sulfate	103	100	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 5310 B-00
Run ID: A84915
Included Lab Sample IDs: 2002248

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	96.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A84934
Included Lab Sample IDs: 2002248

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.0	99.5	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A84969
Included Lab Sample IDs: 2002245, 2002246

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	100	104	P/P	90 - 110
Total Alkalinity	101	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A84969
Included Lab Sample IDs: 2002245, 2002246

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	101	100	P/P	90 - 110
Fluoride	102	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A84970
Included Lab Sample IDs: 2002247

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A85111
Included Lab Sample IDs: 2002247, 2002248

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	103	102	P/P	90 - 110
Kjeldahl Nitrogen	97.9	103	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		LCS	Precision	MS
						SMP	
EPA 180.1 Rev. 2.0	Turbidity					7.24	
EPA 300.0 Rev. 2.1	Chloride	98.7	101	101		2.62	
	Sulfate	98.2	101	101		0.864	
EPA 350.1 Rev. 2.0	Ammonia-N	101	101	101			0.0562
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.5	100	106			3.21
EPA 353.2 Rev. 2.0	NO2NO3-N	102	102	103			0.487
	NO2NO3-N	102	101	100			0.496
EPA 365.1 Rev. 2.0	Total-P	96.4	95.4	101			3.52
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.9	95.1	96.5			1.46
SM 2120 B	Color (true)					0.184	
	Color (true)					0.109	
SM 2320 B-97	Total Alkalinity	103				0.581	
	Total Alkalinity	102				0.588	
SM 2540 C-97	TDS					5.83	
SM 4500 F-C-97	Fluoride	96.5	96.6	97.2			0.480
	Fluoride	98.8	96.3	96.3			0.0
SM 5310 B-00	Organic Carbon	95.7	96.6	95.7			0.795
	Organic Carbon	99.2	94.6	95.6			0.958

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2002245, 2002246
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2002245, 2002246
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2002245, 2002246
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2002247, 2002248
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2002247, 2002248
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2002247, 2002248
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2002247, 2002248
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2002249, 2002250
SM 2120 B / E31780	True Color measured at 450 nm	2002245, 2002246
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2002245, 2002246
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2002245, 2002246
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2002245, 2002246
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2002245, 2002246
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2002247, 2002248

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	06/20/2018			06/20/2018 16:21	William L. Brown IV	2002245, 2002246
EPA 300.0 Rev. 2.1	06/20/2018			06/26/2018 02:26	Lipi Saha	2002245
	06/20/2018			06/26/2018 02:38	Lipi Saha	2002246
EPA 350.1 Rev. 2.0	06/20/2018			06/22/2018 12:19	Ping Hua	2002247
	06/20/2018			06/22/2018 12:30	Ping Hua	2002248
EPA 351.2 Rev. 2.0	06/20/2018	07/09/2018 10:25	Tanya Welborn	07/10/2018 09:23	Joseph Suarez	2002247
	06/20/2018	07/09/2018 10:25	Tanya Welborn	07/10/2018 09:30	Joseph Suarez	2002248
EPA 353.2 Rev. 2.0	06/20/2018			06/26/2018 12:55	Lauren Bottorf	2002247
	06/20/2018			06/26/2018 13:02	Lauren Bottorf	2002248
EPA 365.1 Rev. 2.0	06/20/2018	06/25/2018 09:50	Sima Feizi	06/29/2018 14:13	Beverly Y. Sanders	2002248
	06/20/2018	06/25/2018 09:50	Sima Feizi	07/02/2018 14:52	Beverly Y. Sanders	2002247
EPA 365.1 Rev. 2.0 dissolved	06/20/2018			06/20/2018 14:39	Megan Treadwell	2002249
	06/20/2018			06/20/2018 15:05	Megan Treadwell	2002250
SM 2120 B	06/20/2018			06/20/2018 14:51	Blanca Fach	2002245
	06/20/2018			06/20/2018 15:05	Blanca Fach	2002246
SM 2320 B-97	06/20/2018			07/01/2018 17:05	Dale L. Simmons	2002246
	06/20/2018			07/01/2018 22:25	Dale L. Simmons	2002245
SM 2540 C-97	06/20/2018			06/22/2018 15:45	Yijie Li	2002245, 2002246
SM 2540 D-97	06/20/2018			06/22/2018 15:45	Yijie Li	2002245, 2002246
SM 4500 F-C-97	06/20/2018			07/01/2018 16:58	Dale L. Simmons	2002246
	06/20/2018			07/01/2018 22:25	Dale L. Simmons	2002245
SM 5310 B-00	06/20/2018			06/26/2018 06:37	Megan Treadwell	2002247
	06/20/2018			06/27/2018 20:45	Julia Storbeck	2002248