

Chemical Analysis Report

CEN-DIST-2019-01-31-02

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

Event Description: **Louise / Shaw / SG Lk**

Request ID: **RQ-2019-01-21-31**

Customer: **CEN-DIST**

Project ID: **SMP**

Send Reports to:

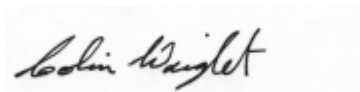
FL Dept. of Environmental Protection
FL Dept. of Environmental Protection
3319 Maguire Blvd., Suite 232
Orlando, FL 32803-3767
Attn: Mike Linger

For additional information please contact

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

Certified by: Colin Wright, Program Administrator

Date Certified: 15-FEB-2019 14:35



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: LAKE LOUISE @ CENTER OF SOUTH LOBE

Collection Date/Time: 01/30/2019 10:24

Field ID: G2CE0065

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2058605	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P358139	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P358664	
		Sulfate	16		mg SO4/L	P358666	
	SM 2120 B	Color (true)	45		PCU	P358133	
	SM 2320 B-97	Total Alkalinity	12		mg CaCO3/L	P358651	
	SM 2540 C-97	TDS	83		mg/L	P358381	
	SM 2540 D-97	TSS	2	U	mg/L	P358291	
	SM 4500 F-C-97	Fluoride	0.096	I	mg F/L	P358655	
2058608	EPA 350.1 Rev. 2.0	Ammonia-N	0.041		mg N/L	P358468	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.95		mg N/L	P358279	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.068		mg N/L	P358305	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P358294	
	SM 5310 B-00	Organic Carbon	12		mg C/L	P358329	
2058611	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P358136	

Sample Location: SHAW LAKE @ CENTER OF NORTH LOBE

Collection Date/Time: 01/30/2019 11:26

Field ID: G2CE0127

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2058606	EPA 180.1 Rev. 2.0	Turbidity	0.50		NTU	P358139	
	EPA 300.0 Rev. 2.1	Chloride	14		mg Cl/L	P358664	
		Sulfate	2.2		mg SO4/L	P358666	
	SM 2120 B	Color (true)	740		PCU	P358133	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P358651	
	SM 2540 C-97	TDS	135		mg/L	P358381	
	SM 2540 D-97	TSS	2	U	mg/L	P358291	
	SM 4500 F-C-97	Fluoride	0.042	I	mg F/L	P358655	
2058609	EPA 350.1 Rev. 2.0	Ammonia-N	0.091		mg N/L	P358468	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.9		mg N/L	P358279	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.025		mg N/L	P358305	
	EPA 365.1 Rev. 2.0	Total-P	0.021		mg P/L	P358294	
	SM 5310 B-00	Organic Carbon	46		mg C/L	P358329	
2058612	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	I	mg P/L	P358136	

Sample Location: SPRING GARDEN LAKE @ 800M N OF CENTER Collection Date/Time: 01/30/2019 11:43

Field ID: G2CE0117

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2058607	EPA 180.1 Rev. 2.0	Turbidity	4.1		NTU	P358139	
	EPA 300.0 Rev. 2.1	Chloride	210		mg Cl/L	P358664	
		Sulfate	34		mg SO4/L	P358666	
		Color (true)	35		PCU	P358133	
	SM 2320 B-97	Total Alkalinity	112		mg CaCO3/L	P358651	
	SM 2540 C-97	TDS	514		mg/L	P358381	
	SM 2540 D-97	TSS	7	I	mg/L	P358291	
	SM 4500 F-C-97	Fluoride	0.087	I	mg F/L	P358655	
2058610	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P358468	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.72		mg N/L	P358279	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.096		mg N/L	P358305	
	EPA 365.1 Rev. 2.0	Total-P	0.072		mg P/L	P358294	
	SM 5310 B-00	Organic Carbon	5.9		mg C/L	P358329	
2058613	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P358137	

Quality Assurance Report Method Blank Results

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P358139

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358664

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358666

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358468

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358279

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358305

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: P358294

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358136

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358137

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: P358133

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P358651

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

Reference Method: SM 2540 C-97
Batch ID: P358381

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P358291

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P358655

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P358329

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: P358664

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358666

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358468

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	96.0		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358279

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358305

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: P358294

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358136

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358137

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

Reference Method: SM 2120 B
Batch ID: P358133

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.8		P	85 - 115

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-97
Batch ID: P358651

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

Reference Method: SM 4500 F-C-97
Batch ID: P358655

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.8		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P358329

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	98.8		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358664

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058536	Chloride	97.0		P	90 - 110
2058623	Chloride	98.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358666

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058536	Sulfate	99.1		P	90 - 110
2058623	Sulfate	98.0		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358468

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058593	Ammonia-N	97.8	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358279

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058625	Kjeldahl Nitrogen	110	108	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358305

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058608	NO2NO3-N	99.8	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058625	Total-P	103	99.2	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358136

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058611	O-Phosphate-P	95.2	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358137

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058627	O-Phosphate-P	93.7	96.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P358655

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2059451	Fluoride	97.4	97.4	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P358329

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2058610	Organic Carbon	98.4	98.1	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P358139

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058580	Turbidity	3.21	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358664

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058536	Chloride	0.0678	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P358666

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058536	Sulfate	0.115	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P358468

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058593	Ammonia-N	1.25	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P358279

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058625	Kjeldahl Nitrogen	0.999	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P358305

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058608	NO2NO3-N	1.11	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P358294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058625	Total-P	3.09	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P358136

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058611	O-Phosphate-P	2.69	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P358137

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058627	O-Phosphate-P	2.02	Spike	P	0 - 20

Reference Method: SM 2120 B
 Batch ID: P358133

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058620	Color (true)	4.26	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P358651

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2059451	Total Alkalinity	0.465	Sample	P	0 - 1.6

Reference Method: SM 2540 C-97
 Batch ID: P358381

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058580	TDS	1.01	Sample	P	0 - 10

Reference Method: SM 2540 D-97
 Batch ID: P358291

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058580	TSS	3.12	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P358655

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2059451	Fluoride	0.0	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
 Batch ID: P358329

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2058610	Organic Carbon	0.196	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: A89126

Included Lab Sample IDs: 2058605, 2058606, 2058607

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A89127

Included Lab Sample IDs: 2058611, 2058612, 2058613

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	98.9	P/P	90 - 110
O-Phosphate-P	98.9	98.6	P/P	90 - 110
O-Phosphate-P	99.3	98.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A89128

Included Lab Sample IDs: 2058605, 2058606, 2058607

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	100	100	P/P	95 - 105

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A89167

Included Lab Sample IDs: 2058608, 2058609, 2058610

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

Reference Method: SM 5310 B-00

Run ID: A89193

Included Lab Sample IDs: 2058608, 2058609, 2058610

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.4	99.4	P/P	90 - 110
Organic Carbon	97.6	97.4	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A89196

Included Lab Sample IDs: 2058608, 2058609, 2058610

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	106	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89197

Included Lab Sample IDs: 2058610

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A89205

Included Lab Sample IDs: 2058605, 2058606, 2058607

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A89209

Included Lab Sample IDs: 2058608, 2058609

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	99.5	99.2	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A89234

Included Lab Sample IDs: 2058608, 2058609, 2058610

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	93.7	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A89314

Included Lab Sample IDs: 2058605, 2058606, 2058607

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

Reference Method: SM 4500 F-C-97

Run ID: A89314

Included Lab Sample IDs: 2058605, 2058606, 2058607

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.5	100	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					3.21	
EPA 300.0 Rev. 2.1	Chloride	101	97.0	98.3		0.0678	
	Sulfate	98.3	99.1	98.0		0.115	
EPA 350.1 Rev. 2.0	Ammonia-N	96.0	97.8	99.2			1.25
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	108	110	108			0.999
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	102	99.8	101			1.11
EPA 365.1 Rev. 2.0	Total-P	101	103	99.2			3.09
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.4	95.2	97.8			2.69
	O-Phosphate-P	100	93.7	96.1			2.02
SM 2120 B	Color (true)	99.8				4.26	
SM 2320 B-97	Total Alkalinity	102				0.465	
SM 2540 C-97	TDS					1.01	
SM 2540 D-97	TSS					3.12	
SM 4500 F-C-97	Fluoride	96.8	97.4	97.4			0.0
SM 5310 B-00	Organic Carbon	98.8	98.4	98.1			0.196

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2058605, 2058606, 2058607
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2058605, 2058606, 2058607
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2058605, 2058606, 2058607
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2058608, 2058609, 2058610
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2058608, 2058609, 2058610
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2058608, 2058609, 2058610
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2058608, 2058609, 2058610
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2058611, 2058612, 2058613
SM 2120 B / E31780	True Color measured at 450 nm	2058605, 2058606, 2058607
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2058605, 2058606, 2058607
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2058605, 2058606, 2058607
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2058605, 2058606, 2058607
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2058605, 2058606, 2058607
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2058608, 2058609, 2058610

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	01/31/2019			01/31/2019 16:32	Adrian Shelby	2058605, 2058606, 2058607
EPA 300.0 Rev. 2.1	01/31/2019			02/07/2019 20:09	Lipi Saha	2058605
	01/31/2019			02/07/2019 20:23	Lipi Saha	2058606
	01/31/2019			02/07/2019 20:38	Lipi Saha	2058607
EPA 350.1 Rev. 2.0	01/31/2019			02/04/2019 11:34	Ping Hua	2058608
	01/31/2019			02/04/2019 11:36	Ping Hua	2058609
	01/31/2019			02/04/2019 11:37	Ping Hua	2058610
EPA 351.2 Rev. 2.0	01/31/2019	02/04/2019 12:25	Adrian Shelby	02/05/2019 12:28	Joseph Suarez	2058608
	01/31/2019	02/04/2019 12:25	Adrian Shelby	02/05/2019 12:29	Joseph Suarez	2058609
	01/31/2019	02/04/2019 12:25	Adrian Shelby	02/05/2019 12:31	Joseph Suarez	2058610
EPA 353.2 Rev. 2.0	01/31/2019			02/04/2019 11:33	Beverly Y. Sanders	2058608
	01/31/2019			02/04/2019 11:39	Beverly Y. Sanders	2058609
	01/31/2019			02/04/2019 11:40	Beverly Y. Sanders	2058610
EPA 365.1 Rev. 2.0	01/31/2019	02/04/2019 13:15	Sima Feizi	02/05/2019 12:53	Rosalyn Ballman	2058610
	01/31/2019	02/04/2019 13:15	Sima Feizi	02/05/2019 16:43	Rosalyn Ballman	2058608
	01/31/2019	02/04/2019 13:15	Sima Feizi	02/05/2019 16:44	Rosalyn Ballman	2058609
EPA 365.1 Rev. 2.0 dissolved	01/31/2019			01/31/2019 15:33	Jhamieka S. Greenwood	2058611
	01/31/2019			01/31/2019 15:51	Jhamieka S. Greenwood	2058612
	01/31/2019			01/31/2019 15:57	Jhamieka S. Greenwood	2058613
SM 2120 B	01/31/2019			01/31/2019 15:57	Julia Storbeck	2058605
	01/31/2019			01/31/2019 15:59	Julia Storbeck	2058607
	01/31/2019			01/31/2019 16:20	Julia Storbeck	2058606
SM 2320 B-97	01/31/2019			02/09/2019 10:05	Dale L. Simmons	2058605
	01/31/2019			02/09/2019 10:14	Dale L. Simmons	2058606
	01/31/2019			02/09/2019 10:26	Dale L. Simmons	2058607
SM 2540 C-97	01/31/2019			02/01/2019 15:25	Mariam Hanna	2058605, 2058606, 2058607
SM 2540 D-97	01/31/2019			02/01/2019 16:00	Mariam Hanna	2058605, 2058606, 2058607
SM 4500 F-C-97	01/31/2019			02/09/2019 10:05	Dale L. Simmons	2058605
	01/31/2019			02/09/2019 10:14	Dale L. Simmons	2058606
	01/31/2019			02/09/2019 10:26	Dale L. Simmons	2058607
SM 5310 B-00	01/31/2019			02/05/2019 02:28	Julia Storbeck	2058610
	01/31/2019			02/05/2019 04:16	Julia Storbeck	2058608
	01/31/2019			02/05/2019 04:30	Julia Storbeck	2058609