Chemical Analysis Report

TLH-ROC-2018-03-29-01

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

Event Description: **kit A w/ bacteria**
Request ID: **RQ-2018-03-26-57**
Customer: **TLH-ROC**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd
Tallahassee, FL 32399
Attn: Michael Eckles

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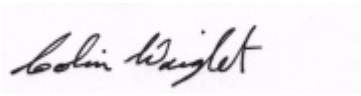
Certified by: Colin Wright, Program Administrator

Date Certified: 20-APR-2018 10:34



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: SAUL CREEK @ MOUTH **Collection Date/Time: 03/29/2018 11:20**

Field ID: G2TLHR0014 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1979290	EPA 180.1 Rev. 2.0	Turbidity	6.5		NTU	P342448	
	EPA 300.0 Rev. 2.1	Chloride	12		mg Cl/L	P342596	
		Sulfate	7.7		mg SO4/L	P342599	
	SM 2120 B	Color (true)	46		PCU	P342459	
	SM 2320 B-97	Total Alkalinity	41		mg CaCO3/L	P343026	RPD
	SM 2540 C-97	TDS	89		mg/L	P343093	
	SM 2540 D-97	TSS	4	I	mg/L	P342611	
	SM 4500 F-C-97	Fluoride	0.068	I	mg F/L	P343647	
1979293	EPA 350.1 Rev. 2.0	Ammonia-N	0.015		mg N/L	P342928	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.35		mg N/L	P342604	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.45		mg N/L	P342848	
	EPA 365.1 Rev. 2.0	Total-P	0.029		mg P/L	P342650	
	SM 5310 B-00	Organic Carbon	4.7		mg C/L	P343082	
1979296	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P342543	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: DOUBLE BAYOU 800M UPSTREAM FROM LAKE WIMICO **Collection Date/Time: 03/29/2018 11:40**

Field ID: G2TLHR0003 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1979291	EPA 180.1 Rev. 2.0	Turbidity	6.7	A	NTU	P342448	
	EPA 300.0 Rev. 2.1	Chloride	10		mg Cl/L	P342596	
		Sulfate	7.8		mg SO4/L	P342599	
	SM 2120 B	Color (true)	41		PCU	P342459	
	SM 2320 B-97	Total Alkalinity	42		mg CaCO3/L	P343026	RPD
	SM 2540 C-97	TDS	85		mg/L	P343093	
	SM 2540 D-97	TSS	5	I	mg/L	P342612	
	SM 4500 F-C-97	Fluoride	0.068	I	mg F/L	P343647	
1979294	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P342928	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34		mg N/L	P342604	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.46		mg N/L	P342848	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P342650	
	SM 5310 B-00	Organic Carbon	4.5		mg C/L	P343082	
1979297	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.005	I	mg P/L	P342543	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: HORSESHOE CREEK 100M UPSTREAM FROM INTERCOASTAL/LAKE WIMICO **Collection Date/Time: 03/29/2018 12:15**

Field ID: G2TLHR0033 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes

Field ID: G2TLHR0033 Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1979292	EPA 180.1 Rev. 2.0	Turbidity	8.0		NTU	P342448	
	EPA 300.0 Rev. 2.1	Chloride	33		mg Cl/L	P342596	
		Sulfate	11		mg SO4/L	P342599	
	SM 2120 B	Color (true)	43		PCU	P342459	
	SM 2320 B-97	Total Alkalinity	42	AJ	mg CaCO3/L	P343026	RPD
	SM 2540 C-97	TDS	122	A	mg/L	P343093	
	SM 2540 D-97	TSS	6	IA	mg/L	P342612	
	SM 4500 F-C-97	Fluoride	0.075	I	mg F/L	P343647	
1979295	EPA 350.1 Rev. 2.0	Ammonia-N	0.005		mg N/L	P343071	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.46		mg N/L	P342604	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.38		mg N/L	P342848	
	EPA 365.1 Rev. 2.0	Total-P	0.026		mg P/L	P342650	
	SM 5310 B-00	Organic Carbon	4.4		mg C/L	P343082	
1979298	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P342543	

Ref. Method and Comment:
EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
SM 2320 B-97: Refer to the narrative for an explanation of QC Codes.
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: P342448

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342596

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342599

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P342928

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343071

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342604

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P342848

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P342650

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342543

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

Reference Method: SM 2120 B
Batch ID: P342459

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P343026

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

Reference Method: SM 2540 C-97
Batch ID: P343093

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P342611

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P342612

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report
Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P343647

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P343082

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: P342596

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.2		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342599

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	98.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P342928

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343071

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342604

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P342848

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P342650

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P342650

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342543

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

Reference Method: SM 2320 B-97
Batch ID: P343026

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	98.3		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P343647

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.2		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P343082

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.0		P	85 - 115

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342596

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979005	Chloride	97.8		P	90 - 110
1979233	Chloride	94.4		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342599

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979005	Sulfate	100		P	90 - 110
1979233	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P342928

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979070	Ammonia-N	96.6	97.8	P/P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343071

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979295	Ammonia-N	97.7	99.1	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342604

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979293	Kjeldahl Nitrogen	99.9	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P342848

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979374	NO2NO3-N	108	108	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P342650

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979293	Total-P	102	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342543

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979350	O-Phosphate-P	95.3	96.9	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P343647

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979292	Fluoride	96.9	97.5	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P343082

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1979043	Organic Carbon	94.4	97.0	P/P	85 - 115

Quality Assurance Report
Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P342448

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979291	Turbidity	4.04	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P342596

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979005	Chloride	0.600	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P342928

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979070	Ammonia-N	0.681	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P343071

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979295	Ammonia-N	1.23	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P342604

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979293	Kjeldahl Nitrogen	2.09	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P342848

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979374	NO2NO3-N	0.926	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P342650

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979293	Total-P	2.01	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P342543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979350	O-Phosphate-P	1.16	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P342459

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979232	Color (true)	1.47	Sample	P	0 - 20

Quality Assurance Report
Precision

Reference Method: SM 2320 B-97
Batch ID: P343026

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979292	Total Alkalinity	2.33	Sample	F	0 - 1.6

Reference Method: SM 2540 C-97
Batch ID: P343093

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979292	TDS	6.56	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P343647

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979292	Fluoride	0.477	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P343082

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1979043	Organic Carbon	1.61	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: EPA 300.0 Rev. 2.1
Run ID: A82892
Included Lab Sample IDs: 1979290, 1979291, 1979292

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	99.6	101	P/P	90 - 110
Chloride	99.9	99.6	P/P	90 - 110
Sulfate	100	101	P/P	90 - 110
Sulfate	98.8	100	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A82942
Included Lab Sample IDs: 1979290, 1979291, 1979292

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	98.5	98.5	P/P	95 - 105

Quality Assurance Report
Calibration Verification

Reference Method: SM 2120 B
Run ID: A82944
Included Lab Sample IDs: 1979290, 1979291, 1979292

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	99.6	102	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A82973
Included Lab Sample IDs: 1979296, 1979297, 1979298

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	101	100	P/P	90 - 110
O-Phosphate-P	99.3	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A83025
Included Lab Sample IDs: 1979293, 1979294, 1979295

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

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A83030
Included Lab Sample IDs: 1979293, 1979294, 1979295

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

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A83062
Included Lab Sample IDs: 1979293, 1979294, 1979295

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

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A83082
Included Lab Sample IDs: 1979293, 1979294

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	102	99.5	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A83116
Included Lab Sample IDs: 1979290, 1979291, 1979292

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	97.3	100	P/P	90 - 110
Total Alkalinity	98.9	97.3	P/P	90 - 110

Quality Assurance Report
Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A83131
Included Lab Sample IDs: 1979295

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.7	99.0	P/P	90 - 110

Reference Method: SM 5310 B-00
Run ID: A83136
Included Lab Sample IDs: 1979293, 1979294, 1979295

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	97.7	P/P	90 - 110
Organic Carbon	97.4	97.0	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A83315
Included Lab Sample IDs: 1979290, 1979291, 1979292

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

* Pass/Fail determinations are made for each bracketing calibration verification check.
Control limits for initial calibration checks may be different from those for continuing checks, depending on method requirements.
Where they are different, both control limits are provided.

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision		
					LCS	SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					4.04	
EPA 300.0 Rev. 2.1	Chloride	97.2	97.8	94.4		0.600	
	Sulfate	98.8	100	101			
EPA 350.1 Rev. 2.0	Ammonia-N	97.5	96.6	97.8			0.681
	Ammonia-N	98.6	97.7	99.1			1.23
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	110	99.9	103			2.09
EPA 353.2 Rev. 2.0	NO2NO3-N	106	108	108			0.926
EPA 365.1 Rev. 2.0	Total-P	102	102	104			2.01
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.0	95.3	96.9			1.16
SM 2120 B	Color (true)					1.47	
SM 2320 B-97	Total Alkalinity	98.3				2.33	
SM 2540 C-97	TDS					6.56	
SM 4500 F-C-97	Fluoride	96.2	96.9	97.5			0.477
SM 5310 B-00	Organic Carbon	96.0	94.4	97.0			1.61

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1979290, 1979291, 1979292
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1979290, 1979291, 1979292

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1979290, 1979291, 1979292
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1979293, 1979294, 1979295
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1979293, 1979294, 1979295
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1979293, 1979294, 1979295
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1979293, 1979294, 1979295
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1979296, 1979297, 1979298
SM 2120 B / E31780	True Color measured at 450 nm	1979290, 1979291, 1979292
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1979290, 1979291, 1979292
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1979290, 1979291, 1979292
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1979290, 1979291, 1979292
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1979290, 1979291, 1979292
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1979293, 1979294, 1979295

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	03/29/2018			03/29/2018 16:28	DeAsia Armster	1979290, 1979291, 1979292
EPA 300.0 Rev. 2.1	03/29/2018			03/31/2018 02:30	Lipi Saha	1979290
	03/29/2018			03/31/2018 02:42	Lipi Saha	1979291
	03/29/2018			03/31/2018 03:18	Lipi Saha	1979292
EPA 350.1 Rev. 2.0	03/29/2018			04/05/2018 13:01	Ping Hua	1979293
	03/29/2018			04/05/2018 13:02	Ping Hua	1979294
	03/29/2018			04/09/2018 13:27	Ping Hua	1979295
EPA 351.2 Rev. 2.0	03/29/2018	04/03/2018 09:50	Adrian Shelby	04/04/2018 10:43	Joseph Suarez	1979293
	03/29/2018	04/03/2018 09:50	Adrian Shelby	04/04/2018 10:51	Joseph Suarez	1979294
	03/29/2018	04/03/2018 09:50	Adrian Shelby	04/04/2018 10:52	Joseph Suarez	1979295
EPA 353.2 Rev. 2.0	03/29/2018			04/05/2018 13:21	Lauren Bottorf	1979293
	03/29/2018			04/05/2018 13:30	Lauren Bottorf	1979294
	03/29/2018			04/05/2018 13:31	Lauren Bottorf	1979295
EPA 365.1 Rev. 2.0	03/29/2018	04/03/2018 13:07	Sima Feizi	04/04/2018 11:39	Beverly Y. Sanders	1979293
	03/29/2018	04/03/2018 13:07	Sima Feizi	04/04/2018 11:41	Beverly Y. Sanders	1979294
	03/29/2018	04/03/2018 13:07	Sima Feizi	04/04/2018 11:42	Beverly Y. Sanders	1979295
EPA 365.1 Rev. 2.0 dissolved	03/29/2018			03/30/2018 12:13	Megan Treadwell	1979296
	03/29/2018			03/30/2018 12:14	Megan Treadwell	1979297
	03/29/2018			03/30/2018 12:19	Megan Treadwell	1979298
SM 2120 B	03/29/2018			03/29/2018 17:13	Tanya Welborn	1979290, 1979291
	03/29/2018			03/29/2018 17:14	Tanya Welborn	1979292
SM 2320 B-97	03/29/2018			04/06/2018 23:14	Dale L. Simmons	1979292
	03/29/2018			04/07/2018 03:10	Dale L. Simmons	1979290
	03/29/2018			04/07/2018 03:20	Dale L. Simmons	1979291
SM 2540 C-97	03/29/2018			03/30/2018 11:35	DeAsia Armster	1979290, 1979291, 1979292
SM 2540 D-97	03/29/2018			03/30/2018 11:35	DeAsia Armster	1979290, 1979291, 1979292
SM 4500 F-C-97	03/29/2018			04/17/2018 16:43	Dale L. Simmons	1979292
	03/29/2018			04/17/2018 18:02	Dale L. Simmons	1979290
	03/29/2018			04/17/2018 18:06	Dale L. Simmons	1979291
SM 5310 B-00	03/29/2018			04/06/2018 20:57	Julia Storbeck	1979293
	03/29/2018			04/06/2018 21:12	Julia Storbeck	1979294
	03/29/2018			04/06/2018 21:49	Julia Storbeck	1979295