

Chemical Analysis Report

WAS-SECT-2018-09-05-02

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

Event Description: **East River, Dickson Bay, St. Marks**

Request ID: **RQ-2018-05-28-12**

Customer: **WAS-SECT**

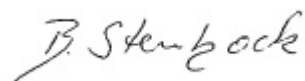
Project ID: **SMP**

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Date Certified: 21-SEP-2018 16:43



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: St. Marks River at Channel Marker 60

Collection Date/Time: 09/05/2018 13:45

Field ID: G1WA0055

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2022181	EPA 180.1 Rev. 2.0	Turbidity	1.6		NTU	P351208	
	SM 2320 B-97	Total Alkalinity	130		mg CaCO3/L	P351405	
	SM 2540 D-97	TSS	3	I	mg/L	P351726	
	SM 4500 F-C-97	Fluoride	0.12		mg F/L	P351412	
2022183	EPA 350.1 Rev. 2.0	Ammonia-N	0.012		mg N/L	P351295	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29		mg N/L	P351246	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.24		mg N/L	P351425	
	EPA 365.1 Rev. 2.0	Total-P	0.033		mg P/L	P351279	
	SM 5310 B-00	Organic Carbon	5.5		mg C/L	P351441	
2022185	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.029		mg P/L	P351137	

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: East River Downstream of Boggy Bayou

Collection Date/Time: 09/05/2018 13:15

Field ID: G1WA0056

Matrix: W-SURF-SLT

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2022182	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P351208	
	SM 2320 B-97	Total Alkalinity	112	A	mg CaCO3/L	P351406	
	SM 2540 D-97	TSS	6	IA	mg/L	P351727	
	SM 4500 F-C-97	Fluoride	0.78		mg F/L	P351413	
2022184	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P351355	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.81		mg N/L	P351242	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P351345	
	EPA 365.1 Rev. 2.0	Total-P	0.025		mg P/L	P351276	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P351338	
2022186	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.008	U	mg P/L	P351138	

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: P351208

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351295

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351355

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351242

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351246

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351345

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351425

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351276

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351279

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351137

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351138

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

Reference Method: SM 2320 B-97
Batch ID: P351405

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

Reference Method: SM 2320 B-97
Batch ID: P351406

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

Reference Method: SM 2540 D-97
Batch ID: P351726

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P351727

Component	Result	Code	Units
TSS	3	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P351412

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
Batch ID: P351413

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P351338

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: P351441

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351295

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351355

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351242

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351246

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351345

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.5		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351425

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: P351276

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	97.8		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351279

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: P351137

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351138

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	103		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P351405

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

Reference Method: SM 2320 B-97
Batch ID: P351406

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

Reference Method: SM 4500 F-C-97
Batch ID: P351412

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.7		P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P351413

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.7		P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P351338

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	95.0		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P351441

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	92.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351295

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022183	Ammonia-N	101	102	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351355

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022184	Ammonia-N	98.4	99.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351242

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021997	Kjeldahl Nitrogen	95.9	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351246

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022200	Kjeldahl Nitrogen	95.6	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351345

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021998	NO2NO3-N	102	102	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351425

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022183	NO2NO3-N	101		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351276

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021998	Total-P	92.3	92.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351279

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022275	Total-P	101	97.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351137

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022132	O-Phosphate-P	94.6	95.6	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351138

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022186	O-Phosphate-P	93.3	94.1	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P351412

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022280	Fluoride	97.5	98.2	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P351413

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2021184	Fluoride	96.8	97.4	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P351338

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2020430	Organic Carbon	94.0	95.1	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P351441

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2022131	Organic Carbon	98.2		P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P351208

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022197	Turbidity	2.92	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351295

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022183	Ammonia-N	0.676	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P351355

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022184	Ammonia-N	0.701	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351242

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021997	Kjeldahl Nitrogen	3.77	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P351246

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022200	Kjeldahl Nitrogen	2.77	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351345

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021998	NO2NO3-N	0.491	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P351425

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022183	NO2NO3-N	0.227	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351276

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021998	Total-P	0.234	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P351279

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022275	Total-P	3.76	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351137

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022132	O-Phosphate-P	0.977	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P351138

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022186	O-Phosphate-P	0.854	Spike	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P351405

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022280	Total Alkalinity	0.869	Sample	P	0 - 1.6

Reference Method: SM 2320 B-97
Batch ID: P351406

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022182	Total Alkalinity	1.39	Sample	P	0 - 1.6

Reference Method: SM 4500 F-C-97
Batch ID: P351412

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022280	Fluoride	0.473	Spike	P	0 - 3.5

Reference Method: SM 4500 F-C-97
Batch ID: P351413

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2021184	Fluoride	0.473	Spike	P	0 - 3.5

Reference Method: SM 5310 B-00
Batch ID: P351338

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2020430	Organic Carbon	0.988	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P351441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2022131	Organic Carbon	0.652	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 365.1 Rev. 2.0 dissolved

Run ID: A86300

Included Lab Sample IDs: 2022185, 2022186

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A86327

Included Lab Sample IDs: 2022181, 2022182

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	104	102	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86350

Included Lab Sample IDs: 2022183

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A86368

Included Lab Sample IDs: 2022183, 2022184

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	104	103	P/P	90 - 110
Kjeldahl Nitrogen	98.7	99.4	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A86370

Included Lab Sample IDs: 2022183, 2022184

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

Reference Method: SM 5310 B-00

Run ID: A86377

Included Lab Sample IDs: 2022184

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	93.8	94.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A86380

Included Lab Sample IDs: 2022184

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.5	97.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A86384

Included Lab Sample IDs: 2022184

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

Reference Method: SM 2320 B-97

Run ID: A86400

Included Lab Sample IDs: 2022181, 2022182

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	P/P	90 - 110
Total Alkalinity	102	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A86400

Included Lab Sample IDs: 2022181, 2022182

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	99.5	P/P	90 - 110
Fluoride	99.0	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A86403

Included Lab Sample IDs: 2022183

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

Reference Method: SM 5310 B-00

Run ID: A86406

Included Lab Sample IDs: 2022183

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	92.4	93.2	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity					2.92	
EPA 350.1 Rev. 2.0	Ammonia-N	102	101	102			0.676
	Ammonia-N	95.9	98.4	99.2			0.701
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	95.9	101			3.77
	Kjeldahl Nitrogen	106	95.6	101			2.77
EPA 353.2 Rev. 2.0	NO2NO3-N	98.5	102	102			0.491
	NO2NO3-N	102	101				0.227
EPA 365.1 Rev. 2.0	Total-P	97.8	92.3	92.6			0.234
	Total-P	102	101	97.3			3.76
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.6	94.6	95.6			0.977
	O-Phosphate-P	103	93.3	94.1			0.854
SM 2320 B-97	Total Alkalinity	103				0.869	
	Total Alkalinity	103				1.39	
SM 4500 F-C-97	Fluoride	98.7	97.5	98.2			0.473
	Fluoride	98.7	96.8	97.4			0.473
SM 5310 B-00	Organic Carbon	95.0	94.0	95.1			0.988
	Organic Carbon	92.6	98.2				0.652

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2022181, 2022182
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2022183, 2022184
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2022183, 2022184
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2022183, 2022184
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2022183, 2022184
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2022185, 2022186
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2022181, 2022182
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2022181, 2022182
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2022181, 2022182
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2022183, 2022184

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	09/05/2018			09/06/2018 16:48	Megan Treadwell	2022181, 2022182
EPA 350.1 Rev. 2.0	09/05/2018			09/07/2018 11:50	Ping Hua	2022183
	09/05/2018			09/10/2018 11:25	Ping Hua	2022184
EPA 351.2 Rev. 2.0	09/05/2018	09/07/2018 09:40	Adrian Shelby	09/10/2018 10:16	Joseph Suarez	2022184
	09/05/2018	09/07/2018 09:40	Adrian Shelby	09/10/2018 10:53	Joseph Suarez	2022183
EPA 353.2 Rev. 2.0	09/05/2018			09/10/2018 15:38	Lauren Bottorf	2022184
	09/05/2018			09/11/2018 12:40	Lauren Bottorf	2022183
EPA 365.1 Rev. 2.0	09/05/2018	09/07/2018 11:52	Sima Feizi	09/10/2018 12:25	Beverly Y. Sanders	2022184
	09/05/2018	09/07/2018 11:52	Sima Feizi	09/10/2018 12:58	Beverly Y. Sanders	2022183
EPA 365.1 Rev. 2.0 dissolved	09/05/2018			09/05/2018 17:29	Julia Storbeck	2022185
	09/05/2018			09/05/2018 17:40	Julia Storbeck	2022186
SM 2320 B-97	09/05/2018			09/11/2018 06:41	Dale L. Simmons	2022181
	09/05/2018			09/11/2018 10:50	Dale L. Simmons	2022182
SM 2540 D-97	09/05/2018			09/07/2018 15:06	Yijie Li	2022181, 2022182
SM 4500 F-C-97	09/05/2018			09/11/2018 06:41	Dale L. Simmons	2022181
	09/05/2018			09/11/2018 09:47	Dale L. Simmons	2022182
SM 5310 B-00	09/05/2018			09/08/2018 09:03	Megan Treadwell	2022184
	09/05/2018			09/11/2018 10:29	Megan Treadwell	2022183