

Chemical Analysis Report

SW-DIST-2019-09-24-01

Florida Department of Environmental Protection
Central Laboratory
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DOH Accreditation E31780

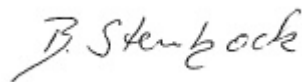
Event Description: **Lakes; Harvey, Williams, Amistead**
Request ID: **RQ-2019-09-23-07**
Customer: **SW-DIST**
Project ID: **SMP**

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Certified by: Dr. rer. nat. Bettina Steinbock, Environmental Administrator

Date Certified: 09-OCT-2019 17:48



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: WILLIAMS LAKE

Collection Date/Time: 09/23/2019 10:35

Field ID: G1SW0071

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2121910	EPA 180.1 Rev. 2.0	Turbidity	2.4		NTU	P371234	
	EPA 300.0 Rev. 2.1	Chloride	33		mg Cl/L	P371463	
	SM 2120 B	Color (true)	29	A	PCU	P371251	
	SM 2320 B-97	Total Alkalinity	18		mg CaCO3/L	P371877	
	SM 2540 C-97	TDS	112		mg/L	P371617	
	SM 2540 D-97	TSS	3	I	mg/L	P371584	
	SM 4500 F-C-97	Fluoride	0.072	I	mg F/L	P371880	
2121913	EPA 350.1 Rev. 2.0	Ammonia-N	0.005	I	mg N/L	P371743	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.81		mg N/L	P371384	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P371468	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P371494	
	SM 5310 B-00	Organic Carbon	10		mg C/L	P371372	
2121916	EPA 300.0 Rev. 2.1 dissolved	Sulfate	8.2		mg SO4/L	P371464	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P371240	

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 HARVEY CENTER

Collection Date/Time: 09/23/2019 09:50

Field ID: G1SW0001

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2121911	EPA 180.1 Rev. 2.0	Turbidity	1.3		NTU	P371234	
	EPA 300.0 Rev. 2.1	Chloride	23		mg Cl/L	P371463	
	SM 2120 B	Color (true)	72		PCU	P371251	
	SM 2320 B-97	Total Alkalinity	32		mg CaCO3/L	P371877	
	SM 2540 C-97	TDS	100		mg/L	P371617	
	SM 2540 D-97	TSS	2	I	mg/L	P371584	
	SM 4500 F-C-97	Fluoride	0.069	I	mg F/L	P371880	
2121914	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P371743	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.64		mg N/L	P371385	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P371469	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P371494	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P371372	
2121917	EPA 300.0 Rev. 2.1 dissolved	Sulfate	3.1		mg SO4/L	P371464	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P371240	

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 ARMISTEAD CENTER

Collection Date/Time: 09/23/2019 11:20

Field ID: G1SW0030

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2121912	EPA 180.1 Rev. 2.0	Turbidity	0.85		NTU	P371234	
	EPA 300.0 Rev. 2.1	Chloride	32		mg Cl/L	P371463	
	SM 2120 B	Color (true)	170		PCU	P371251	
	SM 2320 B-97	Total Alkalinity	27		mg CaCO3/L	P371877	
	SM 2540 C-97	TDS	119		mg/L	P371617	
	SM 2540 D-97	TSS	2	I	mg/L	P371584	
	SM 4500 F-C-97	Fluoride	0.11		mg F/L	P371880	
2121915	EPA 350.1 Rev. 2.0	Ammonia-N	0.018		mg N/L	P371743	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.81		mg N/L	P371385	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.053		mg N/L	P371469	
	EPA 365.1 Rev. 2.0	Total-P	0.030		mg P/L	P371494	
	SM 5310 B-00	Organic Carbon	18		mg C/L	P371372	
2121918	EPA 300.0 Rev. 2.1 dissolved	Sulfate	4.5		mg SO4/L	P371464	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P371240	

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: P371234

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371463

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P371464

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P371743

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371384

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371385

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371468

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: P371469

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: P371494

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: P371240

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

Reference Method: SM 2120 B
Batch ID: P371251

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P371877

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

Reference Method: SM 2540 C-97
Batch ID: P371617

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P371584

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P371880

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P371372

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: P371463

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	97.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P371464

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: P371743

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371384

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371385

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371468

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	103		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371469

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO ₂ NO ₃ -N	102		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371494

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371240

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

Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: SM 2120 B
Batch ID: P371251

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

Reference Method: SM 2320 B-97
Batch ID: P371877

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P371880

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.5		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P371372

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	104		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371463

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121729	Chloride	97.4	98.3	P/P	90 - 110
2121845	Chloride	96.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P371464

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121729	Sulfate	97.5	99.7	P/P	90 - 110
2121845	Sulfate	97.4		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P371743

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121913	Ammonia-N	97.1	98.3	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371384

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121913	Kjeldahl Nitrogen	98.0	98.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371385

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121742	Kjeldahl Nitrogen	99.4	94.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371468

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121804	NO2NO3-N	99.4	99.4	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371469

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121914	NO2NO3-N	101	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P371494

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121846	Total-P	95.8	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P371240

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121916	O-Phosphate-P	94.7	95.2	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P371880

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2122535	Fluoride	96.9	96.9	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P371372

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2121994	Organic Carbon	102	97.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P371234

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121845	Turbidity	2.71	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P371463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121729	Chloride	0.902	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1 dissolved
Batch ID: P371464

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121729	Sulfate	2.21	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P371743

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121913	Ammonia-N	1.14	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371384

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121913	Kjeldahl Nitrogen	0.398	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P371385

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121742	Kjeldahl Nitrogen	3.17	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371468

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121804	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P371469

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121914	NO2NO3-N	0.995	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P371494

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121846	Total-P	0.0628	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P371240

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121916	O-Phosphate-P	0.527	Spike	P	0 - 20

Reference Method: SM 2120 B
 Batch ID: P371251

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121910	Color (true)	2.74	Sample	P	0 - 20

Reference Method: SM 2320 B-97
 Batch ID: P371877

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2122535	Total Alkalinity	0.300	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
 Batch ID: P371617

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121802	TDS	4.83	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
 Batch ID: P371880

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2122535	Fluoride	0.0	Spike	P	0 - 2.5

Reference Method: SM 5310 B-00
 Batch ID: P371372

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2121994	Organic Carbon	2.45	Spike	P	0 - 20

* Sample, spike and/or laboratory control sample precision (LCS) is reported.

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A94452

Included Lab Sample IDs: 2121910, 2121911, 2121912

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.7	99.3	P/P	90 - 110
Chloride	98.9	98.7	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1 dissolved

Run ID: A94452

Included Lab Sample IDs: 2121916, 2121917, 2121918

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

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A94462

Included Lab Sample IDs: 2121910, 2121911, 2121912

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	102	100	P/P	95 - 105

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A94463

Included Lab Sample IDs: 2121916, 2121917, 2121918

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.6	99.1	P/P	90 - 110
O-Phosphate-P	99.6	98.3	P/P	90 - 110

Reference Method: SM 2120 B

Run ID: A94469

Included Lab Sample IDs: 2121910, 2121911, 2121912

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	103	P/P	90 - 115
Color (true)	103	103	P/P	90 - 115

Reference Method: SM 5310 B-00

Run ID: A94516

Included Lab Sample IDs: 2121913, 2121914, 2121915

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A94525

Included Lab Sample IDs: 2121913, 2121914, 2121915

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A94584

Included Lab Sample IDs: 2121913, 2121914, 2121915

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	99.0	P/P	90 - 110
Total-P	99.0	99.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A94616

Included Lab Sample IDs: 2121913, 2121914, 2121915

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.7	100	P/P	90 - 110
Kjeldahl Nitrogen	99.6	100	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A94667

Included Lab Sample IDs: 2121913, 2121914, 2121915

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	99.2	P/P	90 - 110
Ammonia-N	99.2	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A94719

Included Lab Sample IDs: 2121910, 2121911, 2121912

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	101	P/P	90 - 110
Total Alkalinity	99.7	103	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A94719

Included Lab Sample IDs: 2121910, 2121911, 2121912

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	100	P/P	90 - 110
Fluoride	99.0	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			Precision	
						LCS	MS
EPA 180.1 Rev. 2.0	Turbidity					2.71	
EPA 300.0 Rev. 2.1	Chloride	97.3	97.4	98.3	96.8		0.902
EPA 300.0 Rev. 2.1 dissolved	Sulfate	98.2	97.5	99.7	97.4		2.21
EPA 350.1 Rev. 2.0	Ammonia-N	97.4	97.1	98.3			1.14
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.8	98.0	98.7			0.398
	Kjeldahl Nitrogen	96.0	99.4	94.9			3.17
EPA 353.2 Rev. 2.0	NO2NO3-N	103	99.4	99.4			0.0
	NO2NO3-N	102	101	100			0.995
EPA 365.1 Rev. 2.0	Total-P	98.1	95.8	95.8			0.0628
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	99.3	94.7	95.2			0.527
SM 2120 B	Color (true)	102				2.74	
SM 2320 B-97	Total Alkalinity	102				0.300	
SM 2540 C-97	TDS					4.83	
SM 4500 F-C-97	Fluoride	95.5	96.9	96.9			0.0
SM 5310 B-00	Organic Carbon	104	102	97.7			2.45

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2121910, 2121911, 2121912
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2121910, 2121911, 2121912
EPA 300.0 Rev. 2.1 dissolved / E31780	Sulfate, dissolved, in filtered, aqueous matrices	2121916, 2121917, 2121918
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2121913, 2121914, 2121915
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2121913, 2121914, 2121915
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2121913, 2121914, 2121915
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2121913, 2121914, 2121915
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2121916, 2121917, 2121918
SM 2120 B / E31780	True Color measured at 450 nm	2121910, 2121911, 2121912
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2121910, 2121911, 2121912
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2121910, 2121911, 2121912
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2121910, 2121911, 2121912
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2121910, 2121911, 2121912
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2121913, 2121914, 2121915

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	09/24/2019			09/24/2019 16:58	Rosalyn Ballman	2121910, 2121911, 2121912
EPA 300.0 Rev. 2.1	09/24/2019			09/25/2019 22:42	Jhamieka S. Greenwood	2121910
	09/24/2019			09/25/2019 22:54	Jhamieka S. Greenwood	2121911
	09/24/2019			09/25/2019 23:30	Jhamieka S. Greenwood	2121912
EPA 300.0 Rev. 2.1 dissolved	09/24/2019			09/25/2019 23:43	Jhamieka S. Greenwood	2121916
	09/24/2019			09/25/2019 23:55	Jhamieka S. Greenwood	2121917
	09/24/2019			09/26/2019 00:07	Jhamieka S. Greenwood	2121918
EPA 350.1 Rev. 2.0	09/24/2019			10/02/2019 12:08	Ping Hua	2121913
	09/24/2019			10/02/2019 12:25	Ping Hua	2121914
	09/24/2019			10/02/2019 12:26	Ping Hua	2121915
EPA 351.2 Rev. 2.0	09/24/2019	09/26/2019 11:50	Sima Feizi	09/27/2019 18:04	Julia Storbeck	2121913
	09/24/2019	09/26/2019 11:50	Sima Feizi	09/27/2019 18:48	Julia Storbeck	2121914
	09/24/2019	09/26/2019 11:50	Sima Feizi	09/27/2019 18:49	Julia Storbeck	2121915
EPA 353.2 Rev. 2.0	09/24/2019			09/26/2019 10:52	Beverly Y. Sanders	2121913
	09/24/2019			09/26/2019 10:59	Beverly Y. Sanders	2121914
	09/24/2019			09/26/2019 11:05	Beverly Y. Sanders	2121915
EPA 365.1 Rev. 2.0	09/24/2019	09/27/2019 15:05	Lipi Saha	09/30/2019 11:09	Lipi Saha	2121913
	09/24/2019	09/27/2019 15:05	Lipi Saha	09/30/2019 11:17	Lipi Saha	2121914
	09/24/2019	09/27/2019 15:05	Lipi Saha	09/30/2019 11:18	Lipi Saha	2121915
EPA 365.1 Rev. 2.0 dissolved	09/24/2019			09/24/2019 16:05	Jhamieka S. Greenwood	2121916
	09/24/2019			09/24/2019 16:41	Jhamieka S. Greenwood	2121917
	09/24/2019			09/24/2019 16:42	Jhamieka S. Greenwood	2121918
SM 2120 B	09/24/2019			09/24/2019 17:38	Madeline Funaro	2121910, 2121911
	09/24/2019			09/24/2019 18:00	Madeline Funaro	2121912
SM 2320 B-97	09/24/2019			10/01/2019 19:19	Dale L. Simmons	2121910
	09/24/2019			10/01/2019 19:32	Dale L. Simmons	2121911
	09/24/2019			10/01/2019 20:15	Dale L. Simmons	2121912
SM 2540 C-97	09/24/2019			09/25/2019 14:25	Yijie Li	2121910, 2121911, 2121912
SM 2540 D-97	09/24/2019			09/25/2019 14:25	Yijie Li	2121910, 2121911, 2121912
SM 4500 F-C-97	09/24/2019			10/01/2019 19:19	Dale L. Simmons	2121910
	09/24/2019			10/01/2019 19:32	Dale L. Simmons	2121911
	09/24/2019			10/01/2019 20:15	Dale L. Simmons	2121912
SM 5310 B-00	09/24/2019			09/26/2019 01:25	Madeline Funaro	2121913
	09/24/2019			09/26/2019 01:37	Madeline Funaro	2121914
	09/24/2019			09/26/2019 01:51	Madeline Funaro	2121915