

Chemical Analysis Report

SW-DIST-2020-01-15-01

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

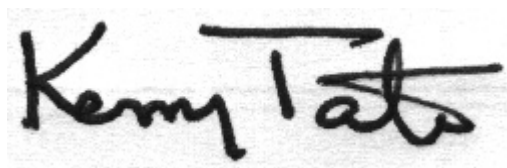
Event Description: **SMP - Hills/Pasco 1 time**
Request ID: **RQ-2020-01-13-20**
Customer: **SW-DIST**
Project ID: **SMP**

Send Reports to:
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Certified by: Kerry Tate, Ph.D., Environmental Administrator

Date Certified: 30-JAN-2020 10:57

A handwritten signature in black ink that reads "Kerry Tate". The signature is written in a cursive, flowing style with a horizontal line above the first name.

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: White Trout Lake @ Center

Collection Date/Time: 01/14/2020 09:47

Field ID: G1SW0104

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2149476	EPA 180.1 Rev. 2.0	Turbidity	0.70		NTU	P377301	
	EPA 300.0 Rev. 2.1	Chloride	31		mg Cl/L	P377330	
		Sulfate	21		mg SO4/L	P377332	
	SM 2120 B-2011	Color (true)	14		PCU	P377334	
	SM 2320 B-2011	Total Alkalinity	37	A	mg CaCO3/L	P377367	
	SM 2540 C-2011	TDS	113		mg/L	P377611	
	SM 2540 D-2011	TSS	2	U	mg/L	P377512	
	SM 4500 F-C-2011	Fluoride	0.098	I	mg F/L	P377371	
2149480	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P377309	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P377432	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P377420	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P377544	
	SM 5310 B-2011	Organic Carbon	5.8		mg C/L	P377341	
2149484	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P377211	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Commiston Lake @ Center

Collection Date/Time: 01/14/2020 10:50

Field ID: G2SW0113

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2149477	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P377301	
	EPA 300.0 Rev. 2.1	Chloride	30		mg Cl/L	P377330	
		Sulfate	3.6		mg SO4/L	P377332	
	SM 2120 B-2011	Color (true)	57	A	PCU	P377335	
	SM 2320 B-2011	Total Alkalinity	26		mg CaCO3/L	P377367	
	SM 2540 C-2011	TDS	106		mg/L	P377611	
	SM 2540 D-2011	TSS	2	U	mg/L	P377512	
	SM 4500 F-C-2011	Fluoride	0.088	I	mg F/L	P377371	
2149481	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P377309	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.82		mg N/L	P377432	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.037		mg N/L	P377420	
	EPA 365.1 Rev. 2.0	Total-P	0.017		mg P/L	P377544	
	SM 5310 B-2011	Organic Carbon	14		mg C/L	P377341	
2149485	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P377211	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Wyndham Lake @ Center

Collection Date/Time: 01/14/2020 11:50

Field ID: G1SW0113

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2149478	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P377301	
	EPA 300.0 Rev. 2.1	Chloride	22		mg Cl/L	P377330	
		Sulfate	10		mg SO4/L	P377332	
	SM 2120 B-2011	Color (true)	17		PCU	P377335	
	SM 2320 B-2011	Total Alkalinity	31		mg CaCO3/L	P377367	
	SM 2540 C-2011	TDS	86	A	mg/L	P377612	
	SM 2540 D-2011	TSS	2	IA	mg/L	P377513	
	SM 4500 F-C-2011	Fluoride	0.053	I	mg F/L	P377371	
2149482	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P377309	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.65		mg N/L	P377432	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P377420	
	EPA 365.1 Rev. 2.0	Total-P	0.016		mg P/L	P377544	
	SM 5310 B-2011	Organic Carbon	8.0		mg C/L	P377341	
2149486	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P377211	

Ref. Method and Comment:

SM 2540 D-2011: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Crews Lake off Dock

Collection Date/Time: 01/14/2020 12:50

Field ID: G5SW0172

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2149479	EPA 180.1 Rev. 2.0	Turbidity	0.65		NTU	P377302	
	EPA 300.0 Rev. 2.1	Chloride	6.8		mg Cl/L	P377330	
		Sulfate	0.20	U	mg SO4/L	P377332	
	SM 2120 B-2011	Color (true)	130		PCU	P377335	
	SM 2320 B-2011	Total Alkalinity	31		mg CaCO3/L	P377367	
	SM 2540 C-2011	TDS	57		mg/L	P377612	
	SM 2540 D-2011	TSS	2	U	mg/L	P377513	
	SM 4500 F-C-2011	Fluoride	0.049	I	mg F/L	P377371	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.004	I	mg N/L	P377309	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.80		mg N/L	P377432	
2149483	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P377420	
	EPA 365.1 Rev. 2.0	Total-P	0.013		mg P/L	P377544	
	SM 5310 B-2011	Organic Carbon	18		mg C/L	P377341	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P377211	
	dissolved						

Ref. Method and Comment:

SM 2540 D-2011: 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: P377301

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377302

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377330

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377332

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377309

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377432

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377420

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377544

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377211

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

Quality Assurance Report

Method Blank Results

Reference Method: SM 2120 B-2011
Batch ID: P377334

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2120 B-2011
Batch ID: P377335

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P377367

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

Reference Method: SM 2540 C-2011
Batch ID: P377611

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-2011
Batch ID: P377612

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P377512

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-2011
Batch ID: P377513

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-2011
Batch ID: P377371

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-2011
Batch ID: P377341

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: P377330

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377332

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377309

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377432

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: P377420

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377544

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377211

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	104		P	90 - 110

Reference Method: SM 2120 B-2011
Batch ID: P377334

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	99.6		P	90 - 110

Reference Method: SM 2120 B-2011
Batch ID: P377335

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Color (true)	103		P	90 - 110

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 2320 B-2011
Batch ID: P377367

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P377371

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	99.4		P	92 - 103

Reference Method: SM 5310 B-2011
Batch ID: P377341

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	101		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P377330

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149380	Chloride	100	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P377332

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149380	Sulfate	101	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P377309

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149470	Ammonia-N	95.9	96.5	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P377432

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149483	Kjeldahl Nitrogen	107	101	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
 Batch ID: P377420

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149469	NO2NO3-N	96.0	96.0	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
 Batch ID: P377544

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149470	Total-P	107	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
 Batch ID: P377211

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149376	O-Phosphate-P	95.4	96.6	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
 Batch ID: P377371

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149476	Fluoride	101	101	P/P	89 - 106

Reference Method: SM 5310 B-2011
 Batch ID: P377341

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2149480	Organic Carbon	101	98.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377301

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149380	Turbidity	0.786	Sample	P	0 - 20

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P377302

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149556	Turbidity	1.68	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377330

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149380	Chloride	0.144	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P377332

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149380	Sulfate	0.443	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P377309

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149470	Ammonia-N	0.318	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P377432

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149483	Kjeldahl Nitrogen	3.09	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P377420

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149469	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P377544

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149470	Total-P	0.154	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P377211

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149376	O-Phosphate-P	0.961	Spike	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P377334

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149377	Color (true)	2.60	Sample	P	0 - 20

Reference Method: SM 2120 B-2011
Batch ID: P377335

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149477	Color (true)	0.985	Sample	P	0 - 20

Reference Method: SM 2320 B-2011
Batch ID: P377367

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149476	Total Alkalinity	0.0121	Sample	P	0 - 2.8

Reference Method: SM 2540 C-2011
Batch ID: P377611

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149374	TDS	0.396	Sample	P	0 - 10

Reference Method: SM 2540 C-2011
Batch ID: P377612

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149478	TDS	1.16	Sample	P	0 - 10

Reference Method: SM 4500 F-C-2011
Batch ID: P377371

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149476	Fluoride	0.473	Spike	P	0 - 2.5

Reference Method: SM 5310 B-2011
Batch ID: P377341

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2149480	Organic Carbon	1.82	Spike	P	0 - 20

Quality Assurance Report Precision

* 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: A96853

Included Lab Sample IDs: 2149476, 2149477, 2149478, 2149479

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A96905

Included Lab Sample IDs: 2149484, 2149485, 2149486, 2149487

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	100	98.9	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A96947

Included Lab Sample IDs: 2149476, 2149477, 2149478, 2149479

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	101	P/P	95 - 105
Turbidity	99.5	99.5	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A96950

Included Lab Sample IDs: 2149480, 2149481, 2149482, 2149483

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.2	98.6	P/P	90 - 110
Ammonia-N	98.6	99.6	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A96960

Included Lab Sample IDs: 2149476, 2149477, 2149478, 2149479

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	85 - 115
Color (true)	102	102	P/P	85 - 115

Reference Method: SM 5310 B-2011

Run ID: A96961

Included Lab Sample IDs: 2149480, 2149481, 2149482, 2149483

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	102	102	P/P	90 - 110
Organic Carbon	103	99.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A96974

Included Lab Sample IDs: 2149480, 2149481, 2149482, 2149483

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	97.0	97.0	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: SM 2320 B-2011

Run ID: A96976

Included Lab Sample IDs: 2149476, 2149477, 2149478, 2149479

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	102	103	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A96976

Included Lab Sample IDs: 2149476, 2149477, 2149478, 2149479

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A97079

Included Lab Sample IDs: 2149480, 2149481, 2149482, 2149483

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	99.9	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A97098

Included Lab Sample IDs: 2149480, 2149481, 2149482, 2149483

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	108	108	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					0.786	
	Turbidity					1.68	
EPA 300.0 Rev. 2.1	Chloride	100	100	100			0.144
	Sulfate	100	101	101			0.443
EPA 350.1 Rev. 2.0	Ammonia-N	98.2	95.9	96.5			0.318
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106	107	101			3.09
EPA 353.2 Rev. 2.0	NO2NO3-N	97.5	96.0	96.0			0.0
EPA 365.1 Rev. 2.0	Total-P	106	107	107			0.154
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	104	95.4	96.6			0.961
SM 2120 B-2011	Color (true)	99.6				2.60	
	Color (true)	103				0.985	
SM 2320 B-2011	Total Alkalinity	104				0.0121	
SM 2540 C-2011	TDS					0.396	
	TDS					1.16	
SM 4500 F-C-2011	Fluoride	99.4	101	101			0.473
SM 5310 B-2011	Organic Carbon	101	101	98.9			1.82

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2149476, 2149477, 2149478, 2149479
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2149476, 2149477, 2149478, 2149479
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2149476, 2149477, 2149478, 2149479
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2149480, 2149481, 2149482, 2149483
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2149480, 2149481, 2149482, 2149483
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2149480, 2149481, 2149482, 2149483
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2149480, 2149481, 2149482, 2149483
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2149484, 2149485, 2149486, 2149487
SM 2120 B-2011 / E31780	True Color measured at 450 nm (not valid for NPDES monitoring)	2149476, 2149477, 2149478, 2149479
SM 2320 B-2011 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2149476, 2149477, 2149478, 2149479
SM 2540 C-2011 / E31780	Total Dissolved Solids in aqueous matrices	2149476, 2149477, 2149478, 2149479
SM 2540 D-2011 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2149476, 2149477, 2149478, 2149479
SM 4500 F-C-2011 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2149476, 2149477, 2149478, 2149479
SM 5310 B-2011 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2149480, 2149481, 2149482, 2149483

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	01/15/2020			01/15/2020 18:01	Yen Ta	2149476, 2149477, 2149478, 2149479
EPA 300.0 Rev. 2.1	01/15/2020			01/16/2020 23:28	Lipi Saha	2149476
	01/15/2020			01/16/2020 23:40	Lipi Saha	2149477
	01/15/2020			01/16/2020 23:52	Lipi Saha	2149478
	01/15/2020			01/17/2020 00:04	Lipi Saha	2149479
EPA 350.1 Rev. 2.0	01/15/2020			01/16/2020 16:42	Ping Hua	2149480
	01/15/2020			01/16/2020 16:43	Ping Hua	2149481
	01/15/2020			01/16/2020 16:51	Ping Hua	2149482
	01/15/2020			01/16/2020 16:53	Ping Hua	2149483
EPA 351.2 Rev. 2.0	01/15/2020	01/21/2020 12:05	Jhamieka S. Greenwood	01/23/2020 13:31	Virginia P. Brown	2149480
	01/15/2020	01/21/2020 12:05	Jhamieka S. Greenwood	01/23/2020 13:32	Virginia P. Brown	2149481
	01/15/2020	01/21/2020 12:05	Jhamieka S. Greenwood	01/23/2020 13:34	Virginia P. Brown	2149482
	01/15/2020	01/21/2020 12:05	Jhamieka S. Greenwood	01/23/2020 13:35	Virginia P. Brown	2149483
EPA 353.2 Rev. 2.0	01/15/2020			01/17/2020 12:24	Beverly Y. Sanders	2149480
	01/15/2020			01/17/2020 12:25	Beverly Y. Sanders	2149481
	01/15/2020			01/17/2020 12:26	Beverly Y. Sanders	2149482
	01/15/2020			01/17/2020 12:27	Beverly Y. Sanders	2149483
EPA 365.1 Rev. 2.0	01/15/2020	01/22/2020 14:24	Yen Ta	01/24/2020 14:20	Benjamin T. Nordmann	2149480
	01/15/2020	01/22/2020 14:24	Yen Ta	01/24/2020 14:21	Benjamin T. Nordmann	2149481
	01/15/2020	01/22/2020 14:24	Yen Ta	01/24/2020 14:22	Benjamin T. Nordmann	2149482
	01/15/2020	01/22/2020 14:24	Yen Ta	01/24/2020 14:23	Benjamin T. Nordmann	2149483
EPA 365.1 Rev. 2.0 dissolved	01/15/2020			01/15/2020 17:38	Jhamieka S. Greenwood	2149484
	01/15/2020			01/15/2020 17:39	Jhamieka S. Greenwood	2149485, 2149486
	01/15/2020			01/15/2020 17:40	Jhamieka S. Greenwood	2149487
SM 2120 B-2011	01/15/2020			01/15/2020 18:38	Madeline Funaro	2149476
	01/15/2020			01/15/2020 18:43	Madeline Funaro	2149477, 2149478
	01/15/2020			01/15/2020 18:44	Madeline Funaro	2149479
SM 2320 B-2011	01/15/2020			01/17/2020 06:30	Dale L. Simmons	2149476
	01/15/2020			01/17/2020 07:15	Dale L. Simmons	2149477
	01/15/2020			01/17/2020 07:28	Dale L. Simmons	2149478
	01/15/2020			01/17/2020 07:41	Dale L. Simmons	2149479
SM 2540 C-2011	01/15/2020			01/16/2020 15:45	Sima Feizi	2149476, 2149477, 2149478, 2149479
SM 2540 D-2011	01/15/2020			01/16/2020 15:45	Sima Feizi	2149476, 2149477, 2149478, 2149479
SM 4500 F-C-2011	01/15/2020			01/17/2020 06:20	Dale L. Simmons	2149476
	01/15/2020			01/17/2020 07:15	Dale L. Simmons	2149477
	01/15/2020			01/17/2020 07:28	Dale L. Simmons	2149478
	01/15/2020			01/17/2020 07:41	Dale L. Simmons	2149479
SM 5310 B-2011	01/15/2020			01/16/2020 23:28	Lauren Lees	2149480
	01/15/2020			01/17/2020 03:17	Lauren Lees	2149481
	01/15/2020			01/17/2020 03:32	Lauren Lees	2149482

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-2011	01/15/2020			01/17/2020 03:45	Lauren Lees	2149483