

Chemical Analysis Report

NE-DIST-2019-07-26-02

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

Event Description: **Interlachen 1/2 makeup**

Request ID: **RQ-2019-07-22-27**

Customer: **NE-DIST**

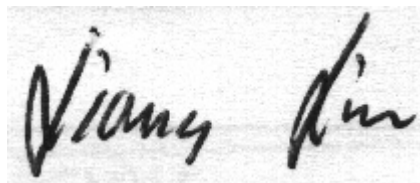
Project ID: **SMP**

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Certified by: Liang Lin, Environmental Administrator

Date Certified: 13-AUG-2019 15:40

A handwritten signature in black ink, appearing to read "Liang Lin", is shown on a light-colored background.

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: Gillis Pond Center

Collection Date/Time: 07/25/2019 11:20

Field ID: G1NE0863

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2106346	EPA 180.1 Rev. 2.0	Turbidity	2.6		NTU	P368028	
	EPA 300.0 Rev. 2.1	Chloride	10		mg Cl/L	P368400	
		Sulfate	2.7		mg SO4/L	P368402	
	SM 2120 B	Color (true)	120		PCU	P368032	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P368375	
	SM 2540 C-97	TDS	38		mg/L	P368473	
	SM 2540 D-97	TSS	4	I	mg/L	P368226	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P368378	
2106350	EPA 350.1 Rev. 2.0	Ammonia-N	0.32		mg N/L	P368746	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.5		mg N/L	P368155	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.25		mg N/L	P368133	
	EPA 365.1 Rev. 2.0	Total-P	0.027		mg P/L	P368141	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P368108	
2106354	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P368016	

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: Hardesty lake Center

Collection Date/Time: 07/25/2019 09:50

Field ID: G1NE0869

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2106347	EPA 180.1 Rev. 2.0	Turbidity	2.8		NTU	P368028	
	EPA 300.0 Rev. 2.1	Chloride	7.1		mg Cl/L	P368400	
		Sulfate	0.66		mg SO4/L	P368402	
	SM 2120 B	Color (true)	150		PCU	P368032	
	SM 2320 B-97	Total Alkalinity	1.2	I	mg CaCO3/L	P368375	
	SM 2540 C-97	TDS	43		mg/L	P368473	
	SM 2540 D-97	TSS	5	I	mg/L	P368226	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P368378	
2106351	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P368680	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.96		mg N/L	P368155	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P368133	
	EPA 365.1 Rev. 2.0	Total-P	0.047		mg P/L	P368141	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P368108	
2106355	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P368018	

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: Church Lake Center

Collection Date/Time: 07/25/2019 10:30

Field ID: G1NE0867

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2106348	EPA 180.1 Rev. 2.0	Turbidity	0.70		NTU	P368028	
	EPA 300.0 Rev. 2.1	Chloride	5.2		mg Cl/L	P368400	
		Sulfate	3.0		mg SO4/L	P368402	
	SM 2120 B	Color (true)	13		PCU	P368032	
	SM 2320 B-97	Total Alkalinity	4.8		mg CaCO3/L	P368375	
	SM 2540 C-97	TDS	26		mg/L	P368473	
	SM 2540 D-97	TSS	2	I	mg/L	P368226	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P368378	
2106352	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P368680	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.34		mg N/L	P368156	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P368133	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P368141	
	SM 5310 B-00	Organic Carbon	4.1		mg C/L	P368108	
2106356	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P368018	

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: Smith lake Center

Collection Date/Time: 07/25/2019 12:30

Field ID: G2NE1156

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2106349	EPA 180.1 Rev. 2.0	Turbidity	0.55		NTU	P368028	
	EPA 300.0 Rev. 2.1	Chloride	5.1		mg Cl/L	P368400	
		Sulfate	0.64		mg SO4/L	P368402	
	SM 2120 B	Color (true)	23		PCU	P368032	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P368375	
	SM 2540 C-97	TDS	26		mg/L	P368474	
	SM 2540 D-97	TSS	2	U	mg/L	P368227	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P368378	
2106353	EPA 350.1 Rev. 2.0	Ammonia-N	0.008		mg N/L	P368680	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.56		mg N/L	P368156	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P368133	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P368141	
	SM 5310 B-00	Organic Carbon	9.0		mg C/L	P368108	
2106357	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P368018	

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: P368028

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368400

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368402

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368680

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368746

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368155

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368156

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368133

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368141

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: P368016

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368018

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

Reference Method: SM 2120 B
Batch ID: P368032

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P368375

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

Reference Method: SM 2540 C-97
Batch ID: P368473

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P368474

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P368226

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P368227

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P368378

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report

Method Blank Results

Reference Method: SM 5310 B-00
Batch ID: P368108

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: P368400

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368402

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.9		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368680

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368746

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368155

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	95.4		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368156

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	93.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368133

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368141

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	96.6		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368016

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368018

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

Reference Method: SM 2120 B
Batch ID: P368032

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

Reference Method: SM 2320 B-97
Batch ID: P368375

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	98 - 106

Reference Method: SM 4500 F-C-97
Batch ID: P368378

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.2		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P368108

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368400

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106252	Chloride	95.1		P	90 - 110
2106349	Chloride	97.0		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368402

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106252	Sulfate	99.5		P	90 - 110
2106349	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368680

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106352	Ammonia-N	100	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368746

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2107139	Ammonia-N	99.0	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368155

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106271	Kjeldahl Nitrogen	100	109	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368156

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106386	Kjeldahl Nitrogen	104	96.8	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368133

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106345	NO2NO3-N	100	99.5	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368141

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106345	Total-P	96.2	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368016

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106258	O-Phosphate-P	93.6	95.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368018

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106357	O-Phosphate-P	96.5	97.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P368378

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106631	Fluoride	98.4	98.4	P/P	89 - 106

Reference Method: SM 5310 B-00
Batch ID: P368108

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2106319	Organic Carbon	99.8	100	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P368028

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106279	Turbidity	0.568	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368400

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106252	Chloride	1.13	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P368402

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106252	Sulfate	1.59	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368680

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106352	Ammonia-N	0.690	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P368746

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2107139	Ammonia-N	1.39	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368155

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106271	Kjeldahl Nitrogen	4.91	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P368156

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106386	Kjeldahl Nitrogen	3.50	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P368133

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106345	NO2NO3-N	0.581	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P368141

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106345	Total-P	3.29	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368016

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106258	O-Phosphate-P	1.48	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P368018

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106357	O-Phosphate-P	0.826	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P368032

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106540	Color (true)	1.03	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P368375

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106631	Total Alkalinity	0.0102	Sample	P	0 - 2.8

Reference Method: SM 2540 C-97
Batch ID: P368473

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106237	TDS	1.16	Sample	P	0 - 10

Reference Method: SM 2540 C-97
Batch ID: P368474

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106253	TDS	2.31	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P368378

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106631	Fluoride	0.0	Spike	P	0 - 2.5

Quality Assurance Report Precision

Reference Method: SM 5310 B-00
Batch ID: P368108

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2106319	Organic Carbon	0.163	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: A93063

Included Lab Sample IDs: 2106354, 2106355, 2106356, 2106357

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.4	98.9	P/P	90 - 110
O-Phosphate-P	98.9	95.6	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A93065

Included Lab Sample IDs: 2106346, 2106347, 2106348, 2106349

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	101	100	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A93066

Included Lab Sample IDs: 2106346, 2106347, 2106348, 2106349

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

Reference Method: SM 5310 B-00

Run ID: A93112

Included Lab Sample IDs: 2106350, 2106351, 2106352, 2106353

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A93127

Included Lab Sample IDs: 2106350, 2106351, 2106352, 2106353

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A93147

Included Lab Sample IDs: 2106346, 2106347, 2106348, 2106349

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	95.3	96.6	P/P	90 - 110
Chloride	96.6	97.6	P/P	90 - 110
Sulfate	101	102	P/P	90 - 110
Sulfate	99.2	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A93156

Included Lab Sample IDs: 2106350, 2106351, 2106352, 2106353

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.0	95.3	P/P	90 - 110
Kjeldahl Nitrogen	95.3	95.6	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A93186

Included Lab Sample IDs: 2106350, 2106351, 2106352, 2106353

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.5	100	P/P	90 - 110
Total-P	99.2	98.5	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A93228

Included Lab Sample IDs: 2106346, 2106347, 2106348, 2106349

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

Reference Method: SM 4500 F-C-97

Run ID: A93228

Included Lab Sample IDs: 2106346, 2106347, 2106348, 2106349

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A93358

Included Lab Sample IDs: 2106351, 2106352, 2106353

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A93374

Included Lab Sample IDs: 2106350

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	104	104	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					0.568	
EPA 300.0 Rev. 2.1	Chloride	95.9	95.1	97.0		1.13	
	Sulfate	99.9	99.5	101		1.59	
EPA 350.1 Rev. 2.0	Ammonia-N	100	100	101			0.690
	Ammonia-N	102	99.0	101			1.39
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	95.4	100	109			4.91
	Kjeldahl Nitrogen	93.2	104	96.8			3.50
EPA 353.2 Rev. 2.0	NO2NO3-N	100	100	99.5			0.581
EPA 365.1 Rev. 2.0	Total-P	96.6	96.2	101			3.29
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	97.2	93.6	95.0			1.48
	O-Phosphate-P	99.3	96.5	97.3			0.826
SM 2120 B	Color (true)	101				1.03	
SM 2320 B-97	Total Alkalinity	103				0.0102	
SM 2540 C-97	TDS					1.16	
	TDS					2.31	
SM 4500 F-C-97	Fluoride	98.2	98.4	98.4			0.0
SM 5310 B-00	Organic Carbon	98.4	99.8	100			0.163

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	2106346, 2106347, 2106348, 2106349
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	2106346, 2106347, 2106348, 2106349
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	2106346, 2106347, 2106348, 2106349
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	2106350, 2106351, 2106352, 2106353
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	2106350, 2106351, 2106352, 2106353
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	2106350, 2106351, 2106352, 2106353
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	2106350, 2106351, 2106352, 2106353
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2106354, 2106355, 2106356, 2106357
SM 2120 B / E31780	True Color measured at 450 nm	2106346, 2106347, 2106348, 2106349
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	2106346, 2106347, 2106348, 2106349
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	2106346, 2106347, 2106348, 2106349
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices using a maximum of 250 mL of sample	2106346, 2106347, 2106348, 2106349
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2106346, 2106347, 2106348, 2106349
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	2106350, 2106351, 2106352, 2106353

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	07/26/2019			07/26/2019 15:55	Adrian Shelby	2106346, 2106347, 2106348, 2106349
EPA 300.0 Rev. 2.1	07/26/2019			07/31/2019 12:47	Jhamieka S. Greenwood	2106349
	07/26/2019			07/31/2019 15:13	Jhamieka S. Greenwood	2106346
	07/26/2019			07/31/2019 15:25	Jhamieka S. Greenwood	2106347
	07/26/2019			07/31/2019 15:37	Jhamieka S. Greenwood	2106348
EPA 350.1 Rev. 2.0	07/26/2019			08/07/2019 13:57	Ping Hua	2106352
	07/26/2019			08/07/2019 14:07	Ping Hua	2106351
	07/26/2019			08/07/2019 14:09	Ping Hua	2106353
	07/26/2019			08/08/2019 11:53	Ping Hua	2106350
EPA 351.2 Rev. 2.0	07/26/2019	07/30/2019 11:45	Adrian Shelby	07/31/2019 10:28	Joseph Suarez	2106350
	07/26/2019	07/30/2019 11:45	Adrian Shelby	07/31/2019 10:30	Joseph Suarez	2106351
	07/26/2019	07/30/2019 11:45	Adrian Shelby	07/31/2019 10:44	Joseph Suarez	2106352
	07/26/2019	07/30/2019 11:45	Adrian Shelby	07/31/2019 10:45	Joseph Suarez	2106353
EPA 353.2 Rev. 2.0	07/26/2019			07/30/2019 11:30	Beverly Y. Sanders	2106350
	07/26/2019			07/30/2019 11:31	Beverly Y. Sanders	2106351
	07/26/2019			07/30/2019 11:32	Beverly Y. Sanders	2106352
	07/26/2019			07/30/2019 11:34	Beverly Y. Sanders	2106353
EPA 365.1 Rev. 2.0	07/26/2019	07/30/2019 12:01	Vijayalakshmi Reddy	08/01/2019 09:58	Lipi Saha	2106350
	07/26/2019	07/30/2019 12:01	Vijayalakshmi Reddy	08/01/2019 10:06	Lipi Saha	2106351
	07/26/2019	07/30/2019 12:01	Vijayalakshmi Reddy	08/01/2019 10:07	Lipi Saha	2106352
	07/26/2019	07/30/2019 12:01	Vijayalakshmi Reddy	08/01/2019 10:08	Lipi Saha	2106353
EPA 365.1 Rev. 2.0 dissolved	07/26/2019			07/26/2019 15:47	Jhamieka S. Greenwood	2106357
	07/26/2019			07/26/2019 16:00	Jhamieka S. Greenwood	2106354
	07/26/2019			07/26/2019 16:02	Jhamieka S. Greenwood	2106355
	07/26/2019			07/26/2019 16:03	Jhamieka S. Greenwood	2106356
SM 2120 B	07/26/2019			07/26/2019 17:26	Madeline Funaro	2106346, 2106347
	07/26/2019			07/26/2019 17:27	Madeline Funaro	2106348
	07/26/2019			07/26/2019 17:28	Madeline Funaro	2106349
SM 2320 B-97	07/26/2019			08/02/2019 05:29	Dale L. Simmons	2106346
	07/26/2019			08/02/2019 05:39	Dale L. Simmons	2106347
	07/26/2019			08/02/2019 05:53	Dale L. Simmons	2106348
	07/26/2019			08/02/2019 06:02	Dale L. Simmons	2106349
SM 2540 C-97	07/26/2019			07/30/2019 14:45	Sima Feizi	2106346, 2106347, 2106348, 2106349
SM 2540 D-97	07/26/2019			07/30/2019 14:45	Sima Feizi	2106346, 2106347, 2106348, 2106349
SM 4500 F-C-97	07/26/2019			08/02/2019 05:29	Dale L. Simmons	2106346
	07/26/2019			08/02/2019 05:39	Dale L. Simmons	2106347
	07/26/2019			08/02/2019 05:53	Dale L. Simmons	2106348
	07/26/2019			08/02/2019 06:02	Dale L. Simmons	2106349
SM 5310 B-00	07/26/2019			07/29/2019 22:22	Madeline Funaro	2106350
	07/26/2019			07/29/2019 22:34	Madeline Funaro	2106351

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
SM 5310 B-00	07/26/2019			07/29/2019 22:46	Madeline Funaro	2106352
	07/26/2019			07/29/2019 23:00	Madeline Funaro	2106353