Chemical Analysis Report

BSSP-2018-06-05-01

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

Event Description: **Reference Lake Sampling**
Request ID: **RQ-2018-06-04-74**
Customer: **BSSP**
Project ID: **LAKESREF**

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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 28-JUN-2018 17:39

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 groups are included in this report: Metals and 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: Moore Lake **Collection Date/Time: 06/05/2018 12:00**

Field ID: Moore Ref Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1997647	EPA 300.0	Bromide	0.016	U	mg Br/L	P347460	
	EPA 300.0 Rev. 2.1	Chloride	2.5		mg Cl/L	P346640	
		Sulfate	0.74		mg SO4/L	P346642	
	SM 2120 B	Color (true)	20	A	PCU	P346495	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P346670	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P346673	
1997648	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P346804	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.44		mg N/L	P346856	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P346595	
	EPA 365.1 Rev. 2.0	Total-P	0.006		mg P/L	P346762	
1997649	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P346407	
1997652	EPA 200.7 Rev. 4.4	Calcium	0.42		mg/L	P346553	
		Iron	52	I	ug/L	P346553	
		Magnesium	0.43		mg/L	P346553	
		Potassium	0.30	U	mg/L	P346553	
		Sodium	1.4	I	mg/L	P346553	
		Zinc	5.0	U	ug/L	P346553	
	EPA 200.8 Rev. 5.4	Arsenic	0.23		ug/L	P346553	
		Cadmium	0.020	U	ug/L	P346553	
		Chromium	0.40	U	ug/L	P346553	
		Copper	0.36	I	ug/L	P346553	
		Lead	0.23		ug/L	P346553	
		Nickel	0.20	U	ug/L	P346553	
		Silver	0.010	U	ug/L	P346553	

Quality Assurance Report
Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P346553

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Iron	30	U	ug/L
Magnesium	0.040	U	mg/L
Potassium	0.30	U	mg/L
Sodium	0.50	U	mg/L
Zinc	5.0	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P346553

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Copper	0.20	U	ug/L
Lead	0.050	U	ug/L
Nickel	0.20	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 300.0
Batch ID: P347460

Component	Result	Code	Units
Bromide	0.016	U	mg Br/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346640

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346642

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346804

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P346856

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

Quality Assurance Report
Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346595

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346762

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346407

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

Reference Method: SM 2120 B
Batch ID: P346495

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P346670

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

Reference Method: SM 4500 F-C-97
Batch ID: P346673

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P346553

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	102		P	85 - 115
Iron	105		P	85 - 115
Magnesium	101		P	85 - 115
Potassium	99.4		P	85 - 115
Sodium	99.9		P	85 - 115
Zinc	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P346553

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	102		P	85 - 115
Cadmium	101		P	85 - 115
Chromium	101		P	85 - 115
Copper	96.7		P	85 - 115
Lead	98.7		P	85 - 115
Nickel	99.2		P	85 - 115
Silver	88.4		P	85 - 115

Reference Method: EPA 300.0
Batch ID: P347460

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Bromide	91.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346640

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346642

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346804

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: P346856

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	97.9		P	90 - 110

Quality Assurance Report
Laboratory Control Sample Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346595

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	98.0		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346762

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346407

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

Reference Method: SM 2320 B-97
Batch ID: P346670

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	98 - 107

Reference Method: SM 4500 F-C-97
Batch ID: P346673

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.9		P	91 - 105

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P346553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1997185	Calcium	99.9		P	80 - 120
1997185	Iron	104		P	80 - 120
1997185	Magnesium	99.4		P	80 - 120
1997185	Potassium	98.5		P	80 - 120
1997185	Sodium	97.5		P	80 - 120
1997185	Zinc	105		P	80 - 120
1997957	Calcium	96.5		P	80 - 120
1997957	Iron	102	103	P/P	80 - 120
1997957	Magnesium	99.9		P	80 - 120
1997957	Potassium	98.9		P	80 - 120
1997957	Sodium	99.4		P	80 - 120
1997957	Zinc	100	101	P/P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P346553

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1997185	Arsenic	105		P	80 - 120
1997185	Cadmium	102		P	80 - 120
1997185	Chromium	101		P	80 - 120
1997185	Copper	97.0		P	80 - 120
1997185	Lead	100		P	80 - 120
1997185	Nickel	99.8		P	80 - 120
1997185	Silver	87.6		P	80 - 120
1997957	Arsenic	106	104	P/P	80 - 120
1997957	Cadmium	104	102	P/P	80 - 120
1997957	Chromium	103	102	P/P	80 - 120
1997957	Copper	96.7	94.8	P/P	80 - 120
1997957	Lead	102	101	P/P	80 - 120
1997957	Nickel	99.6	97.8	P/P	80 - 120
1997957	Silver	89.2	89.2	P/P	80 - 120

Reference Method: EPA 300.0
Batch ID: P347460

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1997647	Bromide	99.0	100	P/P	90 - 110
1998375	Bromide	99.8		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346640

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1997493	Chloride	97.2		P	90 - 110
1997716	Chloride	96.9		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346642

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1997493	Sulfate	99.0		P	90 - 110
1997716	Sulfate	101		P	90 - 110

Quality Assurance Report
Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346804

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1997414	Ammonia-N	102	100	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P346856

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1997334	Kjeldahl Nitrogen	103	95.0	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346595

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1997648	NO2NO3-N	102	104	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346762

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1997412	Total-P	98.4	98.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346407

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1997336	O-Phosphate-P	96.1	97.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P346673

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1997945	Fluoride	98.5	97.7	P/P	91 - 105

Quality Assurance Report
Precision

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P346553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1997957	Calcium	0.844	Spike	P	0 - 20
1997957	Iron	0.676	Spike	P	0 - 20
1997957	Magnesium	1.06	Spike	P	0 - 20
1997957	Potassium	0.0893	Spike	P	0 - 20
1997957	Sodium	0.637	Spike	P	0 - 20
1997957	Zinc	0.956	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P346553

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1997957	Arsenic	1.15	Spike	P	0 - 20
1997957	Cadmium	2.10	Spike	P	0 - 20
1997957	Chromium	1.53	Spike	P	0 - 20
1997957	Copper	1.93	Spike	P	0 - 20
1997957	Lead	1.48	Spike	P	0 - 20
1997957	Nickel	1.72	Spike	P	0 - 20
1997957	Silver	0.00428	Spike	P	0 - 20

Reference Method: EPA 300.0
Batch ID: P347460

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1997647	Bromide	1.31	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346640

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1997493	Chloride	1.25	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P346642

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1997493	Sulfate	0.919	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P346804

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1997414	Ammonia-N	1.15	Spike	P	0 - 20

Quality Assurance Report
Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P346856

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1997334	Kjeldahl Nitrogen	5.34	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P346595

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1997648	NO2NO3-N	1.46	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P346762

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1997412	Total-P	0.0246	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P346407

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1997336	O-Phosphate-P	1.01	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P346495

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1997647	Color (true)	0.813	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P346670

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1997945	Total Alkalinity	0.723	Sample	P	0 - 1.6

Reference Method: SM 4500 F-C-97
Batch ID: P346673

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1997945	Fluoride	0.513	Spike	P	0 - 3.5

* 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: A84357
Included Lab Sample IDs: 1997649

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.6	98.2	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A84395
Included Lab Sample IDs: 1997647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	98.0	100	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0
Run ID: A84451
Included Lab Sample IDs: 1997648

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

Reference Method: EPA 200.7 Rev. 4.4
Run ID: A84472
Included Lab Sample IDs: 1997652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	100	99.0	P/P	90 - 110
Iron	99.9	98.8	P/P	90 - 110
Magnesium	101	99.5	P/P	90 - 110
Potassium	99.1	98.8	P/P	90 - 110
Sodium	99.9	99.7	P/P	90 - 110
Zinc	101	100	P/P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Run ID: A84476
Included Lab Sample IDs: 1997647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	100	99.8	P/P	90 - 110
Sulfate	98.5	100	P/P	90 - 110

Reference Method: SM 2320 B-97
Run ID: A84489
Included Lab Sample IDs: 1997647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.6	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Run ID: A84489
Included Lab Sample IDs: 1997647

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

Quality Assurance Report
Calibration Verification

Reference Method: EPA 200.8 Rev. 5.4
Run ID: A84497
Included Lab Sample IDs: 1997652

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	100	99.4	P/P	90 - 110
Cadmium	99.3	100	P/P	90 - 110
Chromium	102	103	P/P	90 - 110
Copper	98.1	98.2	P/P	90 - 110
Lead	98.4	98.8	P/P	90 - 110
Nickel	97.9	98.2	P/P	90 - 110
Silver	98.5	99.6	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Run ID: A84534
Included Lab Sample IDs: 1997648

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Run ID: A84598
Included Lab Sample IDs: 1997648

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

Reference Method: EPA 351.2 Rev. 2.0
Run ID: A84626
Included Lab Sample IDs: 1997648

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.6	97.2	P/P	90 - 110

Reference Method: EPA 300.0
Run ID: A84813
Included Lab Sample IDs: 1997647

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Bromide	96.8	97.4	P/P	90 - 110

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

Quality Assurance Report
Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery			Precision		
						LCS	SMP	MS
EPA 200.7 Rev. 4.4	Calcium	102	99.9	96.5				0.844
	Iron	105	104	102	103			0.676
	Magnesium	101	99.4	99.9				1.06
	Potassium	99.4	98.5	98.9				0.0893
	Sodium	99.9	97.5	99.4				0.637
	Zinc	102	105	100	101			0.956
EPA 200.8 Rev. 5.4	Arsenic	102	105	106	104			1.15
	Cadmium	101	102	104	102			2.10
	Chromium	101	101	103	102			1.53
	Copper	96.7	97.0	96.7	94.8			1.93
	Lead	98.7	100	102	101			1.48
	Nickel	99.2	99.8	99.6	97.8			1.72
	Silver	88.4	87.6	89.2	89.2			0.0042
EPA 300.0	Bromide	91.9	99.0	100	99.8			1.31
EPA 300.0 Rev. 2.1	Chloride	103	97.2	96.9			1.25	
	Sulfate	106	99.0	101			0.919	
EPA 350.1 Rev. 2.0	Ammonia-N	102	102	100				1.15
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	97.9	103	95.0				5.34
EPA 353.2 Rev. 2.0	NO2NO3-N	98.0	102	104				1.46
EPA 365.1 Rev. 2.0	Total-P	101	98.4	98.3				0.0246
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	96.1	97.5				1.01
SM 2120 B	Color (true)						0.813	
SM 2320 B-97	Total Alkalinity	104					0.723	
SM 4500 F-C-97	Fluoride	95.9	98.5	97.7				0.513

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 200.7 Rev. 4.4 / E31780	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	1997652
EPA 200.8 Rev. 5.4 / E31780	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	1997652
EPA 300.0 / E31780	Bromide in aqueous matrices	1997647
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1997647
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1997647
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1997648
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1997648
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1997648
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1997648
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1997649
SM 2120 B / E31780	True Color measured at 450 nm	1997647
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1997647
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1997647

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 200.7 Rev. 4.4	06/05/2018	06/07/2018 14:30	Elliott D. Healy	06/08/2018 18:14	Betina Topolski	1997652
EPA 200.8 Rev. 5.4	06/05/2018	06/07/2018 14:30	Elliott D. Healy	06/11/2018 23:50	Nadine Brooks	1997652
EPA 300.0	06/05/2018			06/19/2018 21:37	Julia Storbeck	1997647
EPA 300.0 Rev. 2.1	06/05/2018			06/08/2018 17:18	Lipi Saha	1997647
EPA 350.1 Rev. 2.0	06/05/2018			06/12/2018 11:28	Ping Hua	1997648
EPA 351.2 Rev. 2.0	06/05/2018	06/13/2018 10:30	Adrian Shelby	06/15/2018 13:38	Joseph Suarez	1997648
EPA 353.2 Rev. 2.0	06/05/2018			06/08/2018 10:30	Lauren Bottorf	1997648
EPA 365.1 Rev. 2.0	06/05/2018	06/12/2018 12:15	Lipi Saha	06/14/2018 14:41	Beverly Y. Sanders	1997648
EPA 365.1 Rev. 2.0 dissolved	06/05/2018			06/05/2018 15:28	Megan Treadwell	1997649
SM 2120 B	06/05/2018			06/06/2018 15:45	Julia Storbeck	1997647
SM 2320 B-97	06/05/2018			06/08/2018 02:40	Dale L. Simmons	1997647
SM 4500 F-C-97	06/05/2018			06/08/2018 02:40	Dale L. Simmons	1997647