

Chemical Analysis Report

BSSP-2021-07-28-01

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-2021-07-26-20**
Customer: **BSSP**
Project ID: **LAKESREF**

Send Reports to:
FL Dept. of Environmental Protection
2600 Blair Stone Rd.
Tallahassee, FL 32399-2400
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Certified by: Thekkekalathil Chandrasekhar, Environmental Consultant

Date Certified: 20-AUG-2021 11:41



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 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: Porter Pond

Collection Date/Time: 07/27/2021 13:12

Field ID: PORTERPOND

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
2265595	EPA 300.0 Rev. 2.1	Chloride	2.1		mg Cl/L	P402077	
		Sulfate	0.41	I	mg SO4/L	P402079	
	SM 2120 B-2011	Color (true)	9.1		PCU	P401661	
	SM 2320 B-2011	Total Alkalinity	1.2	I	mg CaCO3/L	P401791	
	SM 4500 F-C-2011	Fluoride	0.035	U	mg F/L	P401793	
2265596	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P402180	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.36		mg N/L	P402524	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P401700	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P401762	MS
2265597	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P401653	
2265614	EPA 200.7 Rev. 4.4	Calcium	0.43		mg/L	P402167	
		Iron	140		ug/L	P401825	
		Magnesium	0.39		mg/L	P402167	
		Potassium	0.30	U	mg/L	P401825	
		Sodium	1.1	I	mg/L	P401825	
		Zinc	5.4	I	ug/L	P401825	
	EPA 200.8 Rev. 5.4	Arsenic	0.44		ug/L	P401825	
		Beryllium	0.010	U	ug/L	P401825	
		Cadmium	0.020	U	ug/L	P401825	
		Chromium	0.40	U	ug/L	P401825	
		Copper	0.40	U	ug/L	P402167	
		Lead	0.36	I	ug/L	P401825	
		Nickel	0.50	U	ug/L	P401825	
		Silver	0.010	U	ug/L	P401825	

Quality Assurance Report

Method Blank Results

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P401825

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

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P402167

Component	Result	Code	Units
Calcium	0.075	U	mg/L
Magnesium	0.040	U	mg/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P401825

Component	Result	Code	Units
Arsenic	0.050	U	ug/L
Beryllium	0.010	U	ug/L
Cadmium	0.020	U	ug/L
Chromium	0.40	U	ug/L
Lead	0.20	U	ug/L
Nickel	0.50	U	ug/L
Silver	0.010	U	ug/L

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P402167

Component	Result	Code	Units
Copper	0.40	U	ug/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402077

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402079

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402180

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402524

Component	Result	Code	Units
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Quality Assurance Report

Method Blank Results

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402524

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401700

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401762

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401653

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

Reference Method: SM 2120 B-2011
Batch ID: P401661

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-2011
Batch ID: P401791

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

Reference Method: SM 4500 F-C-2011
Batch ID: P401793

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: P401825

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Iron	100		P	85 - 115
Potassium	95.9		P	85 - 115
Sodium	101		P	85 - 115
Zinc	97.8		P	85 - 115

Reference Method: EPA 200.7 Rev. 4.4
Batch ID: P402167

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Calcium	104		P	85 - 115
Magnesium	105		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P401825

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Arsenic	102		P	85 - 115
Beryllium	102		P	85 - 115
Cadmium	103		P	85 - 115
Chromium	103		P	85 - 115
Lead	101		P	85 - 115
Nickel	105		P	85 - 115
Silver	102		P	85 - 115

Reference Method: EPA 200.8 Rev. 5.4
Batch ID: P402167

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Copper	95.8		P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402077

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402079

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402180

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402524

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
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Quality Assurance Report

Laboratory Control Sample Accuracy

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402524

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401700

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: P401762

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401653

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

Reference Method: SM 2120 B-2011
Batch ID: P401661

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

Reference Method: SM 2320 B-2011
Batch ID: P401791

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	101		P	94 - 106

Reference Method: SM 4500 F-C-2011
Batch ID: P401793

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	98.5		P	93 - 104

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P401825

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265614	Iron	103	102	P/P	80 - 120
2265614	Potassium	102	102	P/P	80 - 120
2265614	Sodium	103	103	P/P	80 - 120
2265614	Zinc	99.3	97.1	P/P	80 - 120
2265686	Iron	104		P	80 - 120
2265686	Potassium	102		P	80 - 120
2265686	Sodium	105		P	80 - 120
2265686	Zinc	100		P	80 - 120

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P402167

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264638	Calcium	105	104	P/P	80 - 120
2264638	Magnesium	106	106	P/P	80 - 120
2265323	Calcium	103		P	80 - 120
2265323	Magnesium	104		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P401825

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265614	Arsenic	99.4	100	P/P	80 - 120
2265614	Beryllium	105	104	P/P	80 - 120
2265614	Cadmium	102	100	P/P	80 - 120
2265614	Chromium	102	103	P/P	80 - 120
2265614	Lead	99.7	99.6	P/P	80 - 120
2265614	Nickel	102	103	P/P	80 - 120
2265614	Silver	101	102	P/P	80 - 120
2265686	Arsenic	101		P	80 - 120
2265686	Beryllium	103		P	80 - 120
2265686	Cadmium	102		P	80 - 120
2265686	Chromium	102		P	80 - 120
2265686	Lead	100		P	80 - 120
2265686	Nickel	105		P	80 - 120
2265686	Silver	102		P	80 - 120

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P402167

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2264638	Copper	93.1	92.4	P/P	80 - 120
2265323	Copper	94.1		P	80 - 120

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P402077

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265015	Chloride	94.9		P	90 - 110
2265753	Chloride	98.0		P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P402079

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265015	Sulfate	94.1		P	90 - 110
2265753	Sulfate	97.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P402180

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265654	Ammonia-N	98.2	97.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P402524

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265511	Kjeldahl Nitrogen	101	104	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P401700

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265596	NO2NO3-N	102	100	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P401762

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265477	Total-P	109	111	P/F	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P401653

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265507	O-Phosphate-P	95.8	96.6	P/P	90 - 110

Reference Method: SM 4500 F-C-2011
Batch ID: P401793

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
2265774	Fluoride	99.6	98.9	P/P	92 - 107

Quality Assurance Report Precision

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P401825

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265614	Iron	0.970	Spike	P	0 - 20
2265614	Potassium	0.0957	Spike	P	0 - 20
2265614	Sodium	0.189	Spike	P	0 - 20
2265614	Zinc	2.19	Spike	P	0 - 20

Reference Method: EPA 200.7 Rev. 4.4

Batch ID: P402167

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264638	Calcium	0.960	Spike	P	0 - 20
2264638	Magnesium	0.675	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P401825

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265614	Arsenic	0.851	Spike	P	0 - 20
2265614	Beryllium	0.132	Spike	P	0 - 20
2265614	Cadmium	1.17	Spike	P	0 - 20
2265614	Chromium	0.861	Spike	P	0 - 20
2265614	Lead	0.128	Spike	P	0 - 20
2265614	Nickel	0.994	Spike	P	0 - 20
2265614	Silver	0.723	Spike	P	0 - 20

Reference Method: EPA 200.8 Rev. 5.4

Batch ID: P402167

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2264638	Copper	0.816	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P402077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265753	Chloride	1.21	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P402079

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265753	Sulfate	1.19	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0

Batch ID: P402180

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265654	Ammonia-N	0.381	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0

Batch ID: P402524

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265511	Kjeldahl Nitrogen	2.08	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0

Batch ID: P401700

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265596	NO2NO3-N	0.990	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0

Batch ID: P401762

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265477	Total-P	1.41	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Batch ID: P401653

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265507	O-Phosphate-P	0.832	Spike	P	0 - 20

Reference Method: SM 2120 B-2011

Batch ID: P401661

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265653	Color (true)	16.5	Sample	P	0 - 20

Reference Method: SM 2320 B-2011

Batch ID: P401791

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265774	Total Alkalinity	0.925	Sample	P	0 - 5.2

Reference Method: SM 4500 F-C-2011

Batch ID: P401793

Replicated

Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
2265774	Fluoride	0.460	Spike	P	0 - 2.1

Quality Assurance Report Precision

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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A106883

Included Lab Sample IDs: 2265597

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	98.1	98.0	P/P	90 - 110

Reference Method: SM 2120 B-2011

Run ID: A106885

Included Lab Sample IDs: 2265595

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	102	P/P	90 - 115

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A106916

Included Lab Sample IDs: 2265596

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	99.5	101	P/P	90 - 110

Reference Method: SM 2320 B-2011

Run ID: A106969

Included Lab Sample IDs: 2265595

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	99.4	P/P	90 - 110

Reference Method: SM 4500 F-C-2011

Run ID: A106969

Included Lab Sample IDs: 2265595

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	100	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A106978

Included Lab Sample IDs: 2265596

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	95.2	96.2	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A107013

Included Lab Sample IDs: 2265614

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Arsenic	103	104	P/P	90 - 110
Beryllium	103	104	P/P	90 - 110
Cadmium	102	102	P/P	90 - 110
Chromium	103	103	P/P	90 - 110
Nickel	105	105	P/P	90 - 110
Silver	95.6	96.2	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A107025

Included Lab Sample IDs: 2265595

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	98.2	99.4	P/P	90 - 110
Sulfate	97.8	98.9	P/P	90 - 110

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A107042

Included Lab Sample IDs: 2265614

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Lead	101	97.8	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A107062

Included Lab Sample IDs: 2265614

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Iron	97.4	98.3	P/P	95 - 105
Potassium	98.6	98.0	P/P	95 - 105
Sodium	100	98.2	P/P	95 - 105
Zinc	99.6	102	P/P	95 - 105

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A107121

Included Lab Sample IDs: 2265596

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

Reference Method: EPA 200.8 Rev. 5.4

Run ID: A107160

Included Lab Sample IDs: 2265614

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Copper	95.1	92.8	P/P	90 - 110

Reference Method: EPA 200.7 Rev. 4.4

Run ID: A107254

Included Lab Sample IDs: 2265614

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Calcium	99.4	102	P/P	95 - 105
Magnesium	101	103	P/P	95 - 105

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A107302

Included Lab Sample IDs: 2265596

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	105	108	P/P	90 - 110

Quality Assurance Report

Calibration Verification

* 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 SMP	MS
			LCS				
EPA 200.7 Rev. 4.4	Calcium	104	105	104	103		0.960
	Iron	100	103	102	104		0.970
	Magnesium	105	106	106	104		0.675
	Potassium	95.9	102	102	102		0.0957
	Sodium	101	103	103	105		0.189
	Zinc	97.8	99.3	97.1	100		2.19
EPA 200.8 Rev. 5.4	Arsenic	102	101	99.4	100		0.851
	Beryllium	102	103	105	104		0.132
	Cadmium	103	102	102	100		1.17
	Chromium	103	102	102	103		0.861
	Copper	95.8	93.1	92.4	94.1		0.816
	Lead	101	100	99.7	99.6		0.128
	Nickel	105	105	102	103		0.994
	Silver	102	102	101	102		0.723
EPA 300.0 Rev. 2.1	Chloride	97.5	98.0	94.9		1.21	
	Sulfate	96.8	97.6	94.1		1.19	
EPA 350.1 Rev. 2.0	Ammonia-N	101	98.2	97.8			0.381
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.8	101	104			2.08
EPA 353.2 Rev. 2.0	NO ₂ NO ₃ -N	100	102	100			0.990
EPA 365.1 Rev. 2.0	Total-P	103	109	111			1.41
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	100	95.8	96.6			0.832
SM 2120 B-2011	Color (true)	101				16.5	
SM 2320 B-2011	Total Alkalinity	101				0.925	
SM 4500 F-C-2011	Fluoride	98.5	99.6	98.9			0.460

Reference Method Descriptions

Method	Description	Associated Samples
EPA 200.7 Rev. 4.4	Total Recoverable Metals analysis using ICP emission spectroscopy for aqueous samples supporting Clean Water Act Projects	2265614
EPA 200.8 Rev. 5.4	Total Recoverable Metals analysis using ICP-MS for aqueous samples supporting Clean Water Act Projects	2265614
EPA 300.0 Rev. 2.1	Chloride in aqueous matrices	2265595
EPA 300.0 Rev. 2.1	Sulfate in aqueous matrices	2265595
EPA 350.1 Rev. 2.0	Ammonia in aqueous matrices as mg N/L	2265596
EPA 351.2 Rev. 2.0	Total Kjeldahl Nitrogen in aqueous matrices	2265596
EPA 353.2 Rev. 2.0	Nitrite/Nitrate in aqueous matrices as mg N/L	2265596
EPA 365.1 Rev. 2.0	Total Phosphorus in aqueous matrices as mg P/L	2265596
EPA 365.1 Rev. 2.0 dissolved	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	2265597
SM 2120 B-2011	True Color measured at 450 nm (not valid for NPDES monitoring)	2265595
SM 2320 B-2011	Alkalinity in aqueous matrices as mg CaCO ₃ /L	2265595
SM 4500 F-C-2011	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	2265595

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	07/28/2021	08/02/2021 14:50	Elliott D. Healy	08/05/2021 12:55	Betina Topolski	2265614
	07/28/2021	08/09/2021 13:00	Elliott D. Healy	08/13/2021 15:40	Josef B Mick	2265614
EPA 200.8 Rev. 5.4	07/28/2021	08/02/2021 14:50	Elliott D. Healy	08/03/2021 20:15	Alexander Thompson	2265614
	07/28/2021	08/02/2021 14:50	Elliott D. Healy	08/04/2021 12:49	Alexander Thompson	2265614
	07/28/2021	08/09/2021 13:00	Elliott D. Healy	08/10/2021 14:36	Alexander Thompson	2265614
	07/28/2021			08/05/2021 16:39	Lipi Saha	2265595
EPA 300.0 Rev. 2.1	07/28/2021			08/09/2021 14:04	Ping Hua	2265596
EPA 350.1 Rev. 2.0	07/28/2021			08/17/2021 09:50	Virginia P. Brown	2265596
EPA 351.2 Rev. 2.0	07/28/2021	08/16/2021 13:00	Benjamin T. Nordmann	07/29/2021 10:59	Beverly Y. Sanders	2265596
EPA 353.2 Rev. 2.0	07/28/2021			08/02/2021 12:42	Shengyu Ding	2265596
EPA 365.1 Rev. 2.0	07/28/2021	07/30/2021 15:31	Simonne.V. Calhoun	07/28/2021 15:30	Ping Hua	2265597
EPA 365.1 Rev. 2.0 dissolved	07/28/2021			07/28/2021 17:20	Benjamin T. Nordmann	2265595
SM 2120 B-2011	07/28/2021			07/30/2021 18:33	Dale L. Simmons	2265595
SM 2320 B-2011	07/28/2021			07/30/2021 18:33	Dale L. Simmons	2265595
SM 4500 F-C-2011	07/28/2021					