

Chemical Analysis Report

NE-DIST-2017-10-25-01

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

Event Description: **Melrose Lakes-10/17/17**

Request ID: **RQ-2017-10-16-28**

Customer: **NE-DIST**

Project ID: **SMP**

Send Reports to:
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Date Certified: 16-NOV-2017 15:54



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 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: South Bull Pond Center

Collection Date/Time: 10/24/2017 10:15

Field ID: G1NE0861 10242017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1939779	EPA 180.1 Rev. 2.0	Turbidity	0.80		NTU	P334058	
	EPA 300.0 Rev. 2.1	Chloride	9.0		mg Cl/L	P334255	
		Sulfate	4.1		mg SO4/L	P334259	
	SM 2120 B	Color (true)	170		PCU	P334055	
	SM 2320 B-97	Total Alkalinity	1.5	I	mg CaCO3/L	P334145	
	SM 2540 C-97	TDS	56		mg/L	P334616	
	SM 2540 D-97	TSS	3	I	mg/L	P334656	
	SM 4500 F-C-97	Fluoride	0.046	I	mg F/L	P334147	
1939783	EPA 350.1 Rev. 2.0	Ammonia-N	0.25		mg N/L	P334567	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	1.0		mg N/L	P334631	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.006	I	mg N/L	P334294	
	EPA 365.1 Rev. 2.0	Total-P	0.022		mg P/L	P334118	
	SM 5310 B-00	Organic Carbon	16		mg C/L	P334512	
1939787	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.006	I	mg P/L	P334051	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Lake Rowan Center

Collection Date/Time: 10/24/2017 11:30

Field ID: G1NE0931 10242017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1939780	EPA 180.1 Rev. 2.0	Turbidity	1.5		NTU	P334058	
	EPA 300.0 Rev. 2.1	Chloride	6.8		mg Cl/L	P334255	
		Sulfate	1.2		mg SO4/L	P334259	
	SM 2120 B	Color (true)	670		PCU	P334055	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P334145	
	SM 2540 C-97	TDS	92		mg/L	P334616	
	SM 2540 D-97	TSS	4	I	mg/L	P334656	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P334147	
1939784	EPA 350.1 Rev. 2.0	Ammonia-N	2.6		mg N/L	P334710	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	6.0		mg N/L	P334631	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P334363	
	EPA 365.1 Rev. 2.0	Total-P	0.051		mg P/L	P334118	
	SM 5310 B-00	Organic Carbon	53		mg C/L	P334512	
1939788	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.014		mg P/L	P334051	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Lake Rosa Center

Collection Date/Time: 10/24/2017 12:25

Field ID: G1NE1130 10242017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1939781	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P334058	
	EPA 300.0 Rev. 2.1	Chloride	9.7		mg Cl/L	P334255	
		Sulfate	8.0		mg SO4/L	P334259	

Field ID: G1NE1130 10242017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1939781	SM 2120 B	Color (true)	6.6		PCU	P334055	
	SM 2320 B-97	Total Alkalinity	2.6		mg CaCO3/L	P334145	
	SM 2540 C-97	TDS	35		mg/L	P334616	
	SM 2540 D-97	TSS	3	I	mg/L	P334656	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P334147	
1939785	EPA 350.1 Rev. 2.0	Ammonia-N	0.003	I	mg N/L	P334567	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.29		mg N/L	P334631	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P334363	
	EPA 365.1 Rev. 2.0	Total-P	0.01		mg P/L	P334118	
	SM 5310 B-00	Organic Carbon	2.8		mg C/L	P334512	
1939789	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P334051	

Ref. Method and Comment:

SM 2540 D-97: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

Sample Location: Lake Rosa Center DUP

Collection Date/Time: 10/24/2017 12:30

Field ID: G1NE1130 10242017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1939782	EPA 180.1 Rev. 2.0	Turbidity	0.95		NTU	P334058	
	EPA 300.0 Rev. 2.1	Chloride	9.6		mg Cl/L	P334255	
		Sulfate	7.9		mg SO4/L	P334259	
	SM 2120 B	Color (true)	6.4		PCU	P334055	
	SM 2320 B-97	Total Alkalinity	2.5		mg CaCO3/L	P334145	
	SM 2540 C-97	TDS	31		mg/L	P334616	
	SM 2540 D-97	TSS	2	I	mg/L	P334656	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P334147	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P334567	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.25		mg N/L	P334446	
1939786	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P334363	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P334119	
	SM 5310 B-00	Organic Carbon	2.6		mg C/L	P334512	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P334051	

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: P334058

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P334255

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334255

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334259

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334567

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334710

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334446

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334631

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334294

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334363

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334118

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
Batch ID: P334119

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334051

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

Reference Method: SM 2120 B
Batch ID: P334055

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P334145

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

Reference Method: SM 2540 C-97
Batch ID: P334616

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P334656

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P334147

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P334512

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: P334255

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334255

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334259

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Sulfate	99.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334567

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	93.1		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334710

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334446

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334631

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334294

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334363

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334118

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334119

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total-P	105		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334051

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

Reference Method: SM 2320 B-97
Batch ID: P334145

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	102		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P334147

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.3		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P334512

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.6		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334255

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939780	Chloride	104	104	P/P	90 - 110
1939808	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334259

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939780	Sulfate	98.9	99.6	P/P	90 - 110
1939808	Sulfate	98.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334567

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939785	Ammonia-N	96.2	95.0	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334710

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939709	Ammonia-N	102	102	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334446

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939811	Kjeldahl Nitrogen	99.3	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334631

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939785	Kjeldahl Nitrogen	98.6	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334294

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939783	NO2NO3-N	98.6	97.1	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334363

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939750	NO2NO3-N	94.8	95.3	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334118

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939740	Total-P	104	107	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334119

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939886	Total-P	101	102	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334051

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939789	O-Phosphate-P	95.0	96.5	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P334147

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939884	Fluoride	98.0	98.0	P/P	91 - 105

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SM 5310 B-00
Batch ID: P334512

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1939645	Organic Carbon	94.8	94.9	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P334058

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939774	Turbidity	3.61	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334255

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939780	Chloride	0.489	Spike	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P334259

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939780	Sulfate	0.667	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334567

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939785	Ammonia-N	1.17	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P334710

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939709	Ammonia-N	0.199	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334446

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939811	Kjeldahl Nitrogen	2.97	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P334631

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939785	Kjeldahl Nitrogen	1.16	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334294

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939783	NO2NO3-N	1.49	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P334363

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939750	NO2NO3-N	0.384	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334118

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939740	Total-P	2.87	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P334119

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939886	Total-P	0.520	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P334051

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939789	O-Phosphate-P	1.57	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P334055

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939807	Color (true)	0.861	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P334145

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939884	Total Alkalinity	0.110	Sample	P	0 - 4.8

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P334616

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939744	TDS	6.77	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P334147

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939884	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P334512

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1939645	Organic Carbon	0.0826	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: A79806
Included Lab Sample IDs: 1939787, 1939789

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	96.2	92.1	P/P	90 - 110
O-Phosphate-P	97.6	95.2	P/P	90 - 110

Reference Method: SM 2120 B
Run ID: A79807
Included Lab Sample IDs: 1939779, 1939780, 1939781, 1939782

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	101	98.4	P/P	85 - 115
Color (true)	103	100	P/P	85 - 115

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A79808
Included Lab Sample IDs: 1939779, 1939780, 1939781, 1939782

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Run ID: A79817
Included Lab Sample IDs: 1939788, 1939790

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A79817

Included Lab Sample IDs: 1939788, 1939790

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.3	99.8	P/P	90 - 110
O-Phosphate-P	99.6	99.3	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A79839

Included Lab Sample IDs: 1939779, 1939780, 1939781, 1939782

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	99.5	102	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A79839

Included Lab Sample IDs: 1939779, 1939780, 1939781, 1939782

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79864

Included Lab Sample IDs: 1939783, 1939784, 1939785, 1939786

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A79892

Included Lab Sample IDs: 1939783

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

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A79916

Included Lab Sample IDs: 1939784, 1939785, 1939786

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

Reference Method: SM 5310 B-00

Run ID: A79974

Included Lab Sample IDs: 1939783, 1939784, 1939785, 1939786

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	97.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79995

Included Lab Sample IDs: 1939783, 1939785, 1939786

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

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79995

Included Lab Sample IDs: 1939783, 1939785, 1939786

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	103	104	P/P	90 - 110
Ammonia-N	103	101	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80001

Included Lab Sample IDs: 1939786

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	100	104	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A80055

Included Lab Sample IDs: 1939784

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	100	98.8	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A80098

Included Lab Sample IDs: 1939783, 1939784, 1939785

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	102	102	P/P	90 - 110
Kjeldahl Nitrogen	104	104	P/P	90 - 110
Kjeldahl Nitrogen	104	106	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 SMP	MS
EPA 180.1 Rev. 2.0	Turbidity						3.61	
EPA 300.0 Rev. 2.1	Chloride	104	104	104	103			0.489
	Sulfate	99.6	98.9	99.6	98.7			0.667
EPA 350.1 Rev. 2.0	Ammonia-N	93.1	96.2	95.0				1.17
	Ammonia-N	95.4	102	102				0.199
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	104	99.3	103				2.97
	Kjeldahl Nitrogen	100	98.6	100				1.16
EPA 353.2 Rev. 2.0	NO2NO3-N	104	98.6	97.1				1.49
	NO2NO3-N	104	94.8	95.3				0.384
EPA 365.1 Rev. 2.0	Total-P	103	104	107				2.87
	Total-P	105	101	102				0.520
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	96.1	95.0	96.5				1.57
SM 2120 B	Color (true)						0.861	
SM 2320 B-97	Total Alkalinity	102					0.110	
SM 2540 C-97	TDS						6.77	

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
SM 4500 F-C-97	Fluoride	97.3	98.0	98.0		0.0
SM 5310 B-00	Organic Carbon	96.6	94.8	94.9		0.0826

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1939779, 1939780, 1939781, 1939782
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1939779, 1939780, 1939781, 1939782
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1939779, 1939780, 1939781, 1939782
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1939783, 1939784, 1939785, 1939786
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1939783, 1939784, 1939785, 1939786
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1939783, 1939784, 1939785, 1939786
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1939783, 1939784, 1939785, 1939786
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1939787, 1939788, 1939789, 1939790
SM 2120 B / E31780	True Color measured at 450 nm	1939779, 1939780, 1939781, 1939782
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO ₃ /L	1939779, 1939780, 1939781, 1939782
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1939779, 1939780, 1939781, 1939782
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1939779, 1939780, 1939781, 1939782
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1939779, 1939780, 1939781, 1939782
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1939783, 1939784, 1939785, 1939786

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	10/25/2017			10/25/2017 16:57	DeAsia Armster	1939779, 1939780, 1939781, 1939782
EPA 300.0 Rev. 2.1	10/25/2017			10/27/2017	Irina Carbone	1939779, 1939780, 1939781, 1939782
EPA 350.1 Rev. 2.0	10/25/2017			11/01/2017	Sofia Elnemr	1939783, 1939785, 1939786
	10/25/2017			11/03/2017	Sofia Elnemr	1939784
EPA 351.2 Rev. 2.0	10/25/2017	11/01/2017	Adrian Shelby	11/01/2017	Joseph Suarez	1939786
	10/25/2017	11/03/2017	Adrian Shelby	11/06/2017	Joseph Suarez	1939783, 1939784, 1939785
EPA 353.2 Rev. 2.0	10/25/2017			10/30/2017	Beverly Y. Sanders	1939783
	10/25/2017			10/31/2017	Beverly Y. Sanders	1939784, 1939785, 1939786
EPA 365.1 Rev. 2.0	10/25/2017	10/26/2017	Sima Feizi	10/27/2017	Lipi Saha	1939783, 1939784, 1939785, 1939786
EPA 365.1 Rev. 2.0 dissolved	10/25/2017			10/25/2017 14:53	Megan Treadwell	1939789
	10/25/2017			10/25/2017 15:21	Megan Treadwell	1939787
	10/25/2017			10/25/2017 17:11	Megan Treadwell	1939790
	10/25/2017			10/25/2017 17:18	Megan Treadwell	1939788
SM 2120 B	10/25/2017			10/25/2017 16:05	Tanya Welborn	1939781
	10/25/2017			10/25/2017 16:06	Tanya Welborn	1939782
	10/25/2017			10/25/2017 16:34	Tanya Welborn	1939779
	10/25/2017			10/25/2017 16:35	Tanya Welborn	1939780
SM 2320 B-97	10/25/2017			10/26/2017	Dale L. Simmons	1939779, 1939780
	10/25/2017			10/27/2017	Dale L. Simmons	1939781, 1939782
SM 2540 C-97	10/25/2017			10/27/2017	Yijie Li	1939779, 1939780, 1939781, 1939782
SM 2540 D-97	10/25/2017			10/27/2017	Yijie Li	1939779, 1939780, 1939781, 1939782
SM 4500 F-C-97	10/25/2017			10/26/2017	Dale L. Simmons	1939779, 1939780
	10/25/2017			10/27/2017	Dale L. Simmons	1939781, 1939782
SM 5310 B-00	10/25/2017			11/01/2017	Ping Hua	1939783, 1939784, 1939785, 1939786