

Chemical Analysis Report

NE-DIST-2017-07-28-01

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

Event Description: **MELROSE LAKES-7/19/17**
Request ID: **RQ-2017-07-17-20**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way W
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Attn: Nicole Frederick

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Certified by: Colin Wright, Program Administrator

Date Certified: 17-AUG-2017 13:22

A handwritten signature in black ink, appearing to read "Colin Wright", is displayed on a light gray rectangular 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 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: Field Blank

Collection Date/Time: 07/27/2017 12:05

Field ID: 123456

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1917448	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P329346	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P329390	
		Sulfate	0.20	U	mg SO4/L	P329387	
	SM 2120 B	Color (true)	2.5	U	PCU	P329350	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P329527	
	SM 2540 C-97	TDS	15	U	mg/L	P329770	
	SM 2540 D-97	TSS	2	U	mg/L	P329861	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P329530	
1917452	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P329570	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P329446	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P329440	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P329463	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P330166	
1917456	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P329356	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: South Bull Pond

Collection Date/Time: 07/27/2017 10:45

Field ID: G1NE086107272017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1917449	EPA 180.1 Rev. 2.0	Turbidity	1.8		NTU	P329346	
	EPA 300.0 Rev. 2.1	Chloride	11	A	mg Cl/L	P329390	
		Sulfate	6.3	A	mg SO4/L	P329387	
	SM 2120 B	Color (true)	43	A	PCU	P329350	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P329527	
	SM 2540 C-97	TDS	61		mg/L	P329771	
	SM 2540 D-97	TSS	2	I	mg/L	P329862	
	SM 4500 F-C-97	Fluoride	0.052	I	mg F/L	P329530	
1917453	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	I	mg N/L	P329489	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.65		mg N/L	P329446	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P329441	
	EPA 365.1 Rev. 2.0	Total-P	0.011		mg P/L	P329463	
	SM 5310 B-00	Organic Carbon	11		mg C/L	P329792	
1917457	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P329356	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lake Rosa Ctr.

Collection Date/Time: 07/27/2017 12:45

Field ID: G1NE113007272017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1917450	EPA 180.1 Rev. 2.0	Turbidity	1.2		NTU	P329346	

Field ID: G1NE113007272017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1917450	EPA 300.0 Rev. 2.1	Chloride	9.8		mg Cl/L	P329390	
		Sulfate	9.2		mg SO4/L	P329387	
	SM 2120 B	Color (true)	3.3	I	PCU	P329350	
	SM 2320 B-97	Total Alkalinity	2.4	I	mg CaCO3/L	P329527	
	SM 2540 C-97	TDS	48		mg/L	P329771	
	SM 2540 D-97	TSS	3	I	mg/L	P329862	
	SM 4500 F-C-97	Fluoride	0.036	I	mg F/L	P329530	
1917454	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P329489	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.28		mg N/L	P329446	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P329441	
	EPA 365.1 Rev. 2.0	Total-P	0.009		mg P/L	P329463	
	SM 5310 B-00	Organic Carbon	2.5		mg C/L	P329792	
1917458	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P329357	

Ref. Method and Comment:

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

EPA 351.2 Rev. 2.0: Batch matrix spike recoveries are unavailable because of high analyte concentration in the QC sample.

Sample Location: Lake Rowan Ctr.

Collection Date/Time: 07/27/2017 11:50

Field ID: G1NE093107272017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1917451	EPA 180.1 Rev. 2.0	Turbidity	0.90		NTU	P329346	
	EPA 300.0 Rev. 2.1	Chloride	8.6		mg Cl/L	P329390	
		Sulfate	4.0		mg SO4/L	P329387	
	SM 2120 B	Color (true)	620		PCU	P329350	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P329527	
	SM 2540 C-97	TDS	159		mg/L	P329771	
	SM 2540 D-97	TSS	2	I	mg/L	P329862	
1917455	SM 4500 F-C-97	Fluoride	0.037	I	mg F/L	P329530	
	EPA 350.1 Rev. 2.0	Ammonia-N	2.5		mg N/L	P329572	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	5.3		mg N/L	P329550	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P329441	
	EPA 365.1 Rev. 2.0	Total-P	0.055		mg P/L	P329463	
1917459	SM 5310 B-00	Organic Carbon	57		mg C/L	P329792	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.020		mg P/L	P329357	

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: P329346

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329387

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329390

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329489

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329570

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329572

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329446

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329550

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329440

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329441

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329463

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P329356

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P329357

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

Reference Method: SM 2120 B
Batch ID: P329350

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P329527

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

Reference Method: SM 2540 C-97
Batch ID: P329770

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 C-97
Batch ID: P329771

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P329861

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P329862

Component	Result	Code	Units
TSS	2	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 4500 F-C-97
Batch ID: P329530

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P329792

Component	Result	Code	Units
Organic Carbon	0.50	U	mg C/L

Reference Method: SM 5310 B-00
Batch ID: P330166

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: P329387

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329390

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chloride	98.6		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329489

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	94.7		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329570

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329572

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329446

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: P329446

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329550

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329440

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: P329441

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
NO2NO3-N	106		P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329463

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P329356

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P329357

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	97.8		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P329527

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	103		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P329530

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	95.4		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 5310 B-00
Batch ID: P329792

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	96.0		P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P330166

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

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329387

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917449	Sulfate	94.3		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329390

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917449	Chloride	96.8		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329489

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1915501	Ammonia-N	98.4	97.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329570

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917415	Ammonia-N	92.2	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329572

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917683	Ammonia-N	99.5	99.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329550

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917293	Kjeldahl Nitrogen	91.7	97.9	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329440

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329440

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917332	NO2NO3-N	99.0	98.5	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329441

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917453	NO2NO3-N	105	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329463

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917477	Total-P	97.1	101	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P329356

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917356	O-Phosphate-P	97.6	97.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P329357

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917458	O-Phosphate-P	97.1	97.8	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P329530

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917482	Fluoride	99.5	96.3	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P329792

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1917416	Organic Carbon	95.5	94.4	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P330166

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1919047	Organic Carbon	98.6	101	P/P	85 - 115

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P329346

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917410	Turbidity	0.0	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329387

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917449	Sulfate	0.140	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P329390

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917449	Chloride	0.314	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329489

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1915501	Ammonia-N	0.641	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329570

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917415	Ammonia-N	5.86	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P329572

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917683	Ammonia-N	0.163	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329446

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917414	Kjeldahl Nitrogen	1.78	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P329550

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917293	Kjeldahl Nitrogen	4.75	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329440

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917332	NO2NO3-N	0.506	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P329441

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917453	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P329463

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917477	Total-P	3.76	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P329356

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917356	O-Phosphate-P	0.205	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P329357

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917458	O-Phosphate-P	0.718	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P329350

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917449	Color (true)	1.93	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P329527

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917482	Total Alkalinity	0.0694	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P329770

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917407	TDS	5.19	Sample	P	0 - 10

Quality Assurance Report Precision

Reference Method: SM 2540 C-97
Batch ID: P329771

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917411	TDS	4.92	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P329530

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917482	Fluoride	2.44	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P329792

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1917416	Organic Carbon	0.565	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P330166

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1919047	Organic Carbon	1.74	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 300.0 Rev. 2.1
Run ID: A77948
Included Lab Sample IDs: 1917448, 1917449, 1917450, 1917451

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	102	P/P	90 - 110
Sulfate	102	101	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0
Run ID: A78030
Included Lab Sample IDs: 1917448, 1917449, 1917450, 1917451

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	99.0	P/P	95 - 105

Reference Method: SM 2120 B
Run ID: A78031
Included Lab Sample IDs: 1917448, 1917449, 1917450, 1917451

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

Quality Assurance Report Calibration Verification

Reference Method: SM 2120 B

Run ID: A78031

Included Lab Sample IDs: 1917448, 1917449, 1917450, 1917451

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A78036

Included Lab Sample IDs: 1917456, 1917457, 1917458, 1917459

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	97.7	98.5	P/P	90 - 110
O-Phosphate-P	98.7	98.6	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A78075

Included Lab Sample IDs: 1917452, 1917453, 1917454, 1917455

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	101	102	P/P	90 - 110
NO2NO3-N	102	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A78091

Included Lab Sample IDs: 1917453, 1917454

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	98.8	101	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A78103

Included Lab Sample IDs: 1917448, 1917449, 1917450, 1917451

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	103	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A78103

Included Lab Sample IDs: 1917448, 1917449, 1917450, 1917451

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	96.5	98.1	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A78118

Included Lab Sample IDs: 1917452, 1917453, 1917454, 1917455

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total-P	98.8	99.0	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A78129

Included Lab Sample IDs: 1917452, 1917455

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: A78129

Included Lab Sample IDs: 1917452, 1917455

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

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A78134

Included Lab Sample IDs: 1917452, 1917453, 1917454

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	95.9	95.9	P/P	90 - 110
Kjeldahl Nitrogen	99.4	95.9	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A78180

Included Lab Sample IDs: 1917455

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.0	95.1	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A78233

Included Lab Sample IDs: 1917453, 1917454, 1917455

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.0	97.6	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A78375

Included Lab Sample IDs: 1917452

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	99.4	101	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				0.0	
EPA 300.0 Rev. 2.1	Chloride	98.6	96.8		0.314	
	Sulfate	96.8	94.3		0.140	
EPA 350.1 Rev. 2.0	Ammonia-N	94.7	98.4	97.5		0.641
	Ammonia-N	102	92.2	99.0		5.86
	Ammonia-N	98.2	99.5	99.7		0.163
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	106				1.78
	Kjeldahl Nitrogen	98.0	91.7	97.9		4.75
EPA 353.2 Rev. 2.0	NO2NO3-N	104	99.0	98.5		0.506

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 353.2 Rev. 2.0	NO2NO3-N	106	105	105		0.0
EPA 365.1 Rev. 2.0	Total-P	98.0	97.1	101		3.76
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	101	97.6	97.8		0.205
	O-Phosphate-P	97.8	97.1	97.8		0.718
SM 2120 B	Color (true)				1.93	
SM 2320 B-97	Total Alkalinity	103			0.0694	
SM 2540 C-97	TDS				5.19	
	TDS				4.92	
SM 4500 F-C-97	Fluoride	95.4	99.5	96.3		2.44
SM 5310 B-00	Organic Carbon	96.0	95.5	94.4		0.565
	Organic Carbon	101	98.6	101		1.74

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1917448, 1917449, 1917450, 1917451
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1917448, 1917449, 1917450, 1917451
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1917448, 1917449, 1917450, 1917451
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1917452, 1917453, 1917454, 1917455
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1917452, 1917453, 1917454, 1917455
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1917452, 1917453, 1917454, 1917455
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1917452, 1917453, 1917454, 1917455
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1917456, 1917457, 1917458, 1917459
SM 2120 B / E31780	True Color measured at 450 nm	1917448, 1917449, 1917450, 1917451
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1917448, 1917449, 1917450, 1917451
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1917448, 1917449, 1917450, 1917451
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1917448, 1917449, 1917450, 1917451
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1917448, 1917449, 1917450, 1917451
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1917452, 1917453, 1917454, 1917455

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	07/28/2017			07/28/2017 15:25	DeAsia Armster	1917448, 1917449, 1917450, 1917451
EPA 300.0 Rev. 2.1	07/28/2017			07/28/2017	Julia Storbeck	1917448, 1917449, 1917450, 1917451
EPA 350.1 Rev. 2.0	07/28/2017			08/01/2017	Sofia Elnemr	1917453, 1917454
	07/28/2017			08/02/2017	Sofia Elnemr	1917452, 1917455
EPA 351.2 Rev. 2.0	07/28/2017	08/01/2017	Adrian Shelby	08/02/2017	Joseph Suarez	1917452, 1917453, 1917454
	07/28/2017	08/02/2017	Adrian Shelby	08/04/2017	Joseph Suarez	1917455
EPA 353.2 Rev. 2.0	07/28/2017			08/01/2017	Beverly Y. Sanders	1917452, 1917453, 1917454, 1917455
EPA 365.1 Rev. 2.0	07/28/2017	08/01/2017	Sima Feizi	08/02/2017	Lipi Saha	1917452, 1917453, 1917454, 1917455
EPA 365.1 Rev. 2.0 dissolved	07/28/2017			07/28/2017 15:33	Ping Hua	1917458
	07/28/2017			07/28/2017 16:02	Ping Hua	1917456
	07/28/2017			07/28/2017 16:03	Ping Hua	1917457, 1917459
SM 2120 B	07/28/2017			07/28/2017 15:21	Tanya Welborn	1917448
	07/28/2017			07/28/2017 15:23	Tanya Welborn	1917449
	07/28/2017			07/28/2017 15:24	Tanya Welborn	1917450
	07/28/2017			07/28/2017 15:37	Tanya Welborn	1917451
SM 2320 B-97	07/28/2017			08/02/2017	Dale L. Simmons	1917448, 1917449, 1917450, 1917451
SM 2540 C-97	07/28/2017			08/01/2017	Yijie Li	1917448, 1917449, 1917450, 1917451
SM 2540 D-97	07/28/2017			08/01/2017	Yijie Li	1917448, 1917449, 1917450, 1917451
SM 4500 F-C-97	07/28/2017			08/02/2017	Dale L. Simmons	1917448, 1917449, 1917450, 1917451
SM 5310 B-00	07/28/2017			08/04/2017	Sofia Elnemr	1917453, 1917454, 1917455
	07/28/2017			08/12/2017	Sofia Elnemr	1917452