

Chemical Analysis Report

NE-DIST-2017-10-04-02

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

Event Description: **LSJR Lakes**
Request ID: **RQ-2017-10-02-10**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
FL Dept. of Environmental Protection
8800 Baymeadows Way West
Jacksonville, FL 32256-7577
Attn: Jeremy Parrish

For additional information please contact
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Certified by: Liang Lin, Environmental Administrator

Date Certified: 23-OCT-2017 16:08

A handwritten signature in black ink, appearing to read "Liang Lin", is written on a light-colored, textured 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: LAKE LILLIE CENTER

Collection Date/Time: 10/03/2017 10:20

Field ID: G2NE1133 10032017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934033	EPA 180.1 Rev. 2.0	Turbidity	1.4		NTU	P332739	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P332942	
		Sulfate	25		mg SO4/L	P332945	
	SM 2120 B	Color (true)	56		PCU	P332752	
	SM 2320 B-97	Total Alkalinity	23		mg CaCO3/L	P333073	
	SM 2540 C-97	TDS	108		mg/L	P333046	
	SM 2540 D-97	TSS	2	I	mg/L	P333092	
	SM 4500 F-C-97	Fluoride	0.077	I	mg F/L	P333077	
1934037	EPA 350.1 Rev. 2.0	Ammonia-N	0.030		mg N/L	P333303	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.71		mg N/L	P332980	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P333055	
	EPA 365.1 Rev. 2.0	Total-P	0.024		mg P/L	P333011	
	SM 5310 B-00	Organic Carbon	9.5		mg C/L	P333153	
1934041	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P332732	

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: CLEAR LAKE CENTER

Collection Date/Time: 10/03/2017 11:00

Field ID: G2NE113410032017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934034	EPA 180.1 Rev. 2.0	Turbidity	0.30		NTU	P332739	
	EPA 300.0 Rev. 2.1	Chloride	21	A	mg Cl/L	P332942	
		Sulfate	20	A	mg SO4/L	P332945	
	SM 2120 B	Color (true)	2.5	U	PCU	P332752	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P333073	
	SM 2540 C-97	TDS	67		mg/L	P333046	
	SM 2540 D-97	TSS	2	I	mg/L	P333092	
	SM 4500 F-C-97	Fluoride	0.050	I	mg F/L	P333077	
1934038	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P333171	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.12	I	mg N/L	P332980	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P333055	
	EPA 365.1 Rev. 2.0	Total-P	0.003	I	mg P/L	P333011	
	SM 5310 B-00	Organic Carbon	1.2		mg C/L	P333153	
1934042	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P332732	

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: SILVER LAKE CENTER

Collection Date/Time: 10/03/2017 11:30

Field ID: G2NE1132

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934035	EPA 180.1 Rev. 2.0	Turbidity	3.3		NTU	P332739	
	EPA 300.0 Rev. 2.1	Chloride	17		mg Cl/L	P332942	
		Sulfate	9.7		mg SO4/L	P332945	

Field ID: G2NE1132

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934035	SM 2120 B	Color (true)	61	A	PCU	P332752	
	SM 2320 B-97	Total Alkalinity	3.0		mg CaCO3/L	P333073	
	SM 2540 C-97	TDS	76		mg/L	P333046	
	SM 2540 D-97	TSS	4	I	mg/L	P333092	
	SM 4500 F-C-97	Fluoride	0.043	I	mg F/L	P333077	
1934039	EPA 350.1 Rev. 2.0	Ammonia-N	0.033		mg N/L	P333171	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.91		mg N/L	P332980	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P333055	
	EPA 365.1 Rev. 2.0	Total-P	0.020		mg P/L	P333011	
	SM 5310 B-00	Organic Carbon	14		mg C/L	P333155	
1934043	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P332732	

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 COMO CENTER

Collection Date/Time: 10/03/2017 12:05

Field ID: G2NE0634 10032017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1934036	EPA 180.1 Rev. 2.0	Turbidity	0.85		NTU	P332739	
	EPA 300.0 Rev. 2.1	Chloride	18		mg Cl/L	P332942	
		Sulfate	14		mg SO4/L	P332945	
	SM 2120 B	Color (true)	7.7		PCU	P332752	
	SM 2320 B-97	Total Alkalinity	1.6	I	mg CaCO3/L	P333073	
1934040	SM 2540 C-97	TDS	65		mg/L	P333046	
	SM 2540 D-97	TSS	2	I	mg/L	P333092	
	SM 4500 F-C-97	Fluoride	0.043	I	mg F/L	P333077	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P333171	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.31		mg N/L	P332980	
1934044	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P333055	
	EPA 365.1 Rev. 2.0	Total-P	0.008		mg P/L	P333011	
	SM 5310 B-00	Organic Carbon	3.9		mg C/L	P333155	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P332733	

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: P332739

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1

Batch ID: P332942

Component	Result	Code	Units
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Quality Assurance Report Method Blank Results

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332942

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332945

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333171

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333303

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

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332980

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333055

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333011

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332732

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332733

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

Quality Assurance Report Method Blank Results

Reference Method: SM 2120 B
Batch ID: P332752

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P333073

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

Reference Method: SM 2540 C-97
Batch ID: P333046

Component	Result	Code	Units
TDS	15	U	mg/L

Reference Method: SM 2540 D-97
Batch ID: P333092

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
Batch ID: P333077

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
Batch ID: P333153

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

Reference Method: SM 5310 B-00
Batch ID: P333155

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: P332942

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

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332945

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: P332945

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

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333171

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	97.3		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333303

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Ammonia-N	98.1		P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332980

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

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333055

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: P333011

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332732

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332733

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

Reference Method: SM 2320 B-97
Batch ID: P333073

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

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P333077

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.9		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P333153

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

Reference Method: SM 5310 B-00
Batch ID: P333155

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.0		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332942

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934034	Chloride	102		P	90 - 110
1934036	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332945

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934034	Sulfate	99.2		P	90 - 110
1934036	Sulfate	100		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333171

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934039	Ammonia-N	96.5	94.5	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333303

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934747	Ammonia-N	95.5	97.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332980

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934037	Kjeldahl Nitrogen	91.3	99.8	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333055

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934061	NO2NO3-N	105	106	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333011

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934037	Total-P	90.7	95.8	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332732

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934007	O-Phosphate-P	92.5	95.6	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332733

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934044	O-Phosphate-P	97.4	97.3	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P333077

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934204	Fluoride	97.0	97.8	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P333153

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1933885	Organic Carbon	91.6	91.6	P/P	85 - 115

Reference Method: SM 5310 B-00
Batch ID: P333155

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1934039	Organic Carbon	95.5	96.7	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P332739

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934201	Turbidity	2.00	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332942

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934034	Chloride	0.831	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P332945

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934034	Sulfate	0.673	Sample	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333171

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934039	Ammonia-N	1.23	Spike	P	0 - 20

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P333303

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934747	Ammonia-N	2.02	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P332980

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934037	Kjeldahl Nitrogen	5.47	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P333055

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934061	NO2NO3-N	0.707	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P333011

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934037	Total-P	5.14	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332732

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934007	O-Phosphate-P	2.76	Spike	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P332733

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934044	O-Phosphate-P	0.103	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P332752

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934035	Color (true)	4.68	Sample	P	0 - 20

Reference Method: SM 2320 B-97
Batch ID: P333073

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934204	Total Alkalinity	0.311	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P333046

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934204	TDS	3.19	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P333077

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934204	Fluoride	0.470	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P333153

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1933885	Organic Carbon	0.0351	Spike	P	0 - 20

Reference Method: SM 5310 B-00
Batch ID: P333155

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1934039	Organic Carbon	0.727	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

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A79337

Included Lab Sample IDs: 1934041, 1934042, 1934043, 1934044

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.3	98.2	P/P	90 - 110
O-Phosphate-P	99.4	97.7	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A79338

Included Lab Sample IDs: 1934033, 1934034, 1934035, 1934036

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Turbidity	99.5	100	P/P	95 - 105

Reference Method: SM 2120 B

Run ID: A79343

Included Lab Sample IDs: 1934033, 1934034, 1934035, 1934036

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	106	105	P/P	85 - 115

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A79401

Included Lab Sample IDs: 1934033, 1934034, 1934035, 1934036

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	107	108	P/P	90 - 110
Sulfate	103	103	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A79454

Included Lab Sample IDs: 1934037, 1934038, 1934039, 1934040

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

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A79460

Included Lab Sample IDs: 1934037, 1934038, 1934039, 1934040

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

Reference Method: SM 2320 B-97

Run ID: A79462

Included Lab Sample IDs: 1934033, 1934034, 1934035, 1934036

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

Reference Method: SM 4500 F-C-97

Run ID: A79462

Included Lab Sample IDs: 1934033, 1934034, 1934035, 1934036

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

Reference Method: SM 4500 F-C-97

Run ID: A79462

Included Lab Sample IDs: 1934033, 1934034, 1934035, 1934036

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Fluoride	99.1	98.6	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A79463

Included Lab Sample IDs: 1934037, 1934038, 1934039, 1934040

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	96.9	98.3	P/P	90 - 110
Kjeldahl Nitrogen	98.3	94.4	P/P	90 - 110

Reference Method: SM 5310 B-00

Run ID: A79484

Included Lab Sample IDs: 1934037, 1934038, 1934039, 1934040

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	96.4	96.7	P/P	90 - 110
Organic Carbon	96.7	97.4	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79488

Included Lab Sample IDs: 1934038, 1934039, 1934040

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	101	99.5	P/P	90 - 110
Ammonia-N	99.1	101	P/P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0

Run ID: A79523

Included Lab Sample IDs: 1934037

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Ammonia-N	99.8	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		Precision SMP	MS
			LCS			
EPA 180.1 Rev. 2.0	Turbidity				2.00	
EPA 300.0 Rev. 2.1	Chloride	103	102	103	0.831	
	Sulfate	99.0	99.2	100	0.673	
EPA 350.1 Rev. 2.0	Ammonia-N	97.3	96.5	94.5		1.23
	Ammonia-N	98.1	95.5	97.6		2.02
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	103	91.3	99.8		5.47
EPA 353.2 Rev. 2.0	NO2NO3-N	106	105	106		0.707
EPA 365.1 Rev. 2.0	Total-P	96.6	90.7	95.8		5.14

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.7	92.5	95.6		2.76
	O-Phosphate-P	101	97.4	97.3		0.103
SM 2120 B	Color (true)				4.68	
SM 2320 B-97	Total Alkalinity	102			0.311	
SM 2540 C-97	TDS				3.19	
SM 4500 F-C-97	Fluoride	96.9	97.0	97.8		0.470
SM 5310 B-00	Organic Carbon	95.5	91.6	91.6		0.0351
	Organic Carbon	99.0	95.5	96.7		0.727

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1934033, 1934034, 1934035, 1934036
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1934033, 1934034, 1934035, 1934036
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1934033, 1934034, 1934035, 1934036
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1934037, 1934038, 1934039, 1934040
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1934037, 1934038, 1934039, 1934040
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1934037, 1934038, 1934039, 1934040
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1934037, 1934038, 1934039, 1934040
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1934041, 1934042, 1934043, 1934044
SM 2120 B / E31780	True Color measured at 450 nm	1934033, 1934034, 1934035, 1934036
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1934033, 1934034, 1934035, 1934036
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1934033, 1934034, 1934035, 1934036
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1934033, 1934034, 1934035, 1934036
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1934033, 1934034, 1934035, 1934036
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1934037, 1934038, 1934039, 1934040

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	10/04/2017			10/04/2017 16:16	DeAsia Armster	1934033, 1934034, 1934035, 1934036
EPA 300.0 Rev. 2.1	10/04/2017			10/07/2017	Julia Storbeck	1934033, 1934034, 1934035, 1934036
EPA 350.1 Rev. 2.0	10/04/2017			10/10/2017	Sofia Elnemr	1934038, 1934039, 1934040
	10/04/2017			10/12/2017	Sofia Elnemr	1934037
EPA 351.2 Rev. 2.0	10/04/2017	10/09/2017	Adrian Shelby	10/10/2017	Virginia P. Brown	1934037, 1934038, 1934039, 1934040
EPA 353.2 Rev. 2.0	10/04/2017			10/10/2017	Beverly Y. Sanders	1934037, 1934038, 1934039, 1934040
EPA 365.1 Rev. 2.0	10/04/2017	10/09/2017	Sima Feizi	10/10/2017	Lipi Saha	1934037, 1934038, 1934039, 1934040
EPA 365.1 Rev. 2.0 dissolved	10/04/2017			10/04/2017 15:30	Megan Treadwell	1934044
	10/04/2017			10/04/2017 16:08	Megan Treadwell	1934041
	10/04/2017			10/04/2017 16:09	Megan Treadwell	1934042, 1934043
SM 2120 B	10/04/2017			10/04/2017 16:59	Tanya Welborn	1934033
	10/04/2017			10/04/2017 17:00	Tanya Welborn	1934034
	10/04/2017			10/04/2017 17:01	Tanya Welborn	1934035
	10/04/2017			10/04/2017 17:02	Tanya Welborn	1934036
SM 2320 B-97	10/04/2017			10/10/2017	Dale L. Simmons	1934033, 1934034, 1934035, 1934036
SM 2540 C-97	10/04/2017			10/06/2017	Yijie Li	1934033, 1934034, 1934035, 1934036
SM 2540 D-97	10/04/2017			10/06/2017	Yijie Li	1934033, 1934034, 1934035, 1934036
SM 4500 F-C-97	10/04/2017			10/10/2017	Dale L. Simmons	1934033, 1934034, 1934035, 1934036
SM 5310 B-00	10/04/2017			10/10/2017	Ping Hua	1934037, 1934038, 1934039, 1934040