

Chemical Analysis Report

NE-DIST-2017-03-30-01

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

Event Description: **LSJR Lake**
Request ID: **RQ-2017-03-27-02**
Customer: **NE-DIST**
Project ID: **SMP**

Send Reports to:
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8800 Baymeadows Way West
Jacksonville, FL 32256-7577
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Certified by: Thekkekalathil Chandrasekhar, Chemist Administrator Date Certified: 21-APR-2017 11:54



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: Lake Como Center

Collection Date/Time: 03/29/2017 13:30

Field ID: G2NE0634 03292017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884622	EPA 180.1 Rev. 2.0	Turbidity	0.60		NTU	P322543	
	EPA 300.0 Rev. 2.1	Chloride	21		mg Cl/L	P323033	
		Sulfate	14		mg SO4/L	P323036	
	SM 2120 B	Color (true)	4.6	I	PCU	P322523	
	SM 2320 B-97	Total Alkalinity	1.3	I	mg CaCO3/L	P323074	
	SM 2540 C-97	TDS	66		mg/L	P323100	
	SM 2540 D-97	TSS	2	U	mg/L	P322877	
	SM 4500 F-C-97	Fluoride	0.040	I	mg F/L	P323006	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.009		mg N/L	P322503	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.40		mg N/L	P322566	
1884627	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P322717	
	EPA 365.1 Rev. 2.0	Total-P	0.007		mg P/L	P322673	
	SM 5310 B-00	Organic Carbon	3.2		mg C/L	P322583	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P322535	
	dissolved						

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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: 03/29/2017 12:35

Field ID: G2NE1132 03292017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884623	EPA 180.1 Rev. 2.0	Turbidity	2.9	A	NTU	P322543	
	EPA 300.0 Rev. 2.1	Chloride	19		mg Cl/L	P323033	
		Sulfate	9.5		mg SO4/L	P323036	
	SM 2120 B	Color (true)	33	A	PCU	P322523	
	SM 2320 B-97	Total Alkalinity	2.5		mg CaCO3/L	P323074	
	SM 2540 C-97	TDS	65		mg/L	P323100	
	SM 2540 D-97	TSS	5	I	mg/L	P322877	
	SM 4500 F-C-97	Fluoride	0.052	I	mg F/L	P323006	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P322503	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.99		mg N/L	P322566	
1884628	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P322717	
	EPA 365.1 Rev. 2.0	Total-P	0.014		mg P/L	P322673	
	SM 5310 B-00	Organic Carbon	15		mg C/L	P322583	
	EPA 365.1 Rev. 2.0	O-Phosphate-P	0.004	U	mg P/L	P322536	
	dissolved						

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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: 03/29/2017 11:40

Field ID: G2NE1134 03292017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884624	EPA 180.1 Rev. 2.0	Turbidity	0.55		NTU	P322543	

Field ID: G2NE1134 03292017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884624	EPA 300.0 Rev. 2.1	Chloride	28		mg Cl/L	P323033	
		Sulfate	26		mg SO4/L	P323036	
	SM 2120 B	Color (true)	2.5	U	PCU	P322523	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P323003	
	SM 2540 C-97	TDS	86		mg/L	P323100	
	SM 2540 D-97	TSS	3	U	mg/L	P322877	
	SM 4500 F-C-97	Fluoride	0.066	I	mg F/L	P323006	
1884629	EPA 350.1 Rev. 2.0	Ammonia-N	0.006		mg N/L	P322503	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.18	I	mg N/L	P322567	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P322717	
	EPA 365.1 Rev. 2.0	Total-P	0.004	I	mg P/L	P322673	
	SM 5310 B-00	Organic Carbon	0.72	I	mg C/L	P322583	
1884634	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P322536	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: Lake Lillie Center

Collection Date/Time: 03/29/2017 10:44

Field ID: G2NE1133 03292017

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884625	EPA 180.1 Rev. 2.0	Turbidity	1.9		NTU	P322543	
	EPA 300.0 Rev. 2.1	Chloride	21		mg Cl/L	P323033	
		Sulfate	33		mg SO4/L	P323036	
	SM 2120 B	Color (true)	15		PCU	P322523	
	SM 2320 B-97	Total Alkalinity	24		mg CaCO3/L	P323003	
	SM 2540 C-97	TDS	120	A	mg/L	P323100	
	SM 2540 D-97	TSS	4	I	mg/L	P322877	
1884630	SM 4500 F-C-97	Fluoride	0.084	I	mg F/L	P323006	
	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P322503	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.65		mg N/L	P322567	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P322717	
	EPA 365.1 Rev. 2.0	Total-P	0.015		mg P/L	P322673	
1884635	SM 5310 B-00	Organic Carbon	8.0		mg C/L	P322583	
	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P322536	

Ref. Method and Comment:

EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.

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

Sample Location: FIELD BLANK

Collection Date/Time: 03/29/2017 13:45

Field ID: FIELD BLANK 03292017

Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884626	EPA 180.1 Rev. 2.0	Turbidity	0.10	U	NTU	P322543	
	EPA 300.0 Rev. 2.1	Chloride	0.20	U	mg Cl/L	P323033	
		Sulfate	0.20	U	mg SO4/L	P323036	

Field ID: FIELD BLANK 03292017 Matrix: W-FIELD-BK

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1884626	SM 2120 B	Color (true)	2.5	U	PCU	P322523	
	SM 2320 B-97	Total Alkalinity	0.65	U	mg CaCO3/L	P323004	
	SM 2540 C-97	TDS	15	U	mg/L	P323100	
	SM 2540 D-97	TSS	2	U	mg/L	P322877	
	SM 4500 F-C-97	Fluoride	0.035	U	mg F/L	P323007	
1884631	EPA 350.1 Rev. 2.0	Ammonia-N	0.002	U	mg N/L	P322503	
	EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	0.080	U	mg N/L	P322567	
	EPA 353.2 Rev. 2.0	NO2NO3-N	0.004	U	mg N/L	P322717	
	EPA 365.1 Rev. 2.0	Total-P	0.002	U	mg P/L	P322673	
	SM 5310 B-00	Organic Carbon	0.50	U	mg C/L	P322583	
1884636	EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	0.004	U	mg P/L	P322536	

Ref. Method and Comment:
 EPA 300.0 Rev. 2.1: Sulfate: Batch relative percent difference is unavailable because of low analyte concentration in the QC sample.
 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: P322543

Component	Result	Code	Units
Turbidity	0.10	U	NTU

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P323033

Component	Result	Code	Units
Chloride	0.20	U	mg Cl/L

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P323036

Component	Result	Code	Units
Sulfate	0.20	U	mg SO4/L

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P322503

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P322566

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P322567

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

Quality Assurance Report Method Blank Results

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322717

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

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322673

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322535

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322536

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

Reference Method: SM 2120 B
Batch ID: P322523

Component	Result	Code	Units
Color (true)	2.5	U	PCU

Reference Method: SM 2320 B-97
Batch ID: P323003

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

Reference Method: SM 2320 B-97
Batch ID: P323004

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

Reference Method: SM 2320 B-97
Batch ID: P323074

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

Reference Method: SM 2540 C-97
Batch ID: P323100

Component	Result	Code	Units
TDS	15	U	mg/L

Quality Assurance Report Method Blank Results

Reference Method: SM 2540 D-97
 Batch ID: P322877

Component	Result	Code	Units
TSS	2	U	mg/L

Reference Method: SM 4500 F-C-97
 Batch ID: P323006

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 4500 F-C-97
 Batch ID: P323007

Component	Result	Code	Units
Fluoride	0.035	U	mg F/L

Reference Method: SM 5310 B-00
 Batch ID: P322583

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: P323033

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

Reference Method: EPA 300.0 Rev. 2.1
 Batch ID: P323036

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

Reference Method: EPA 350.1 Rev. 2.0
 Batch ID: P322503

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P322566

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

Reference Method: EPA 351.2 Rev. 2.0
 Batch ID: P322567

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: P322567

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Kjeldahl Nitrogen	99.2		P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322717

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: P322673

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: P322535

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

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322536

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
O-Phosphate-P	99.2		P	90 - 110

Reference Method: SM 2320 B-97
Batch ID: P323003

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P323004

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	105		P	95 - 108

Reference Method: SM 2320 B-97
Batch ID: P323074

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Total Alkalinity	104		P	95 - 108

Reference Method: SM 4500 F-C-97
Batch ID: P323006

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	96.4		P	92 - 103

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 4500 F-C-97
Batch ID: P323007

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Fluoride	97.4		P	92 - 103

Reference Method: SM 5310 B-00
Batch ID: P322583

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Organic Carbon	99.4		P	85 - 115

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323033

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884623	Chloride	102		P	90 - 110
1884697	Chloride	103		P	90 - 110

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323036

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884623	Sulfate	101		P	90 - 110
1884697	Sulfate	101		P	90 - 110

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322503

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884627	Ammonia-N	106	103	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322566

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884628	Kjeldahl Nitrogen	102	94.7	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322567

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884744	Kjeldahl Nitrogen	102	100	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322717

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884628	NO2NO3-N	103	103	P/P	90 - 110

Quality Assurance Report Matrix Spike Accuracy

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322673

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884630	Total-P	100	105	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322535

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884516	O-Phosphate-P	97.6	98.7	P/P	90 - 110

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322536

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884633	O-Phosphate-P	99.0	100	P/P	90 - 110

Reference Method: SM 4500 F-C-97
Batch ID: P323006

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884504	Fluoride	101	101	P/P	91 - 105

Reference Method: SM 4500 F-C-97
Batch ID: P323007

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1885134	Fluoride	98.9	98.9	P/P	91 - 105

Reference Method: SM 5310 B-00
Batch ID: P322583

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1884616	Organic Carbon	98.1	97.2	P/P	85 - 115

Quality Assurance Report Precision

Reference Method: EPA 180.1 Rev. 2.0
Batch ID: P322543

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884623	Turbidity	0.692	Sample	P	0 - 20

Reference Method: EPA 300.0 Rev. 2.1
Batch ID: P323033

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884697	Chloride	0.409	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: EPA 350.1 Rev. 2.0
Batch ID: P322503

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884627	Ammonia-N	2.39	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322566

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884628	Kjeldahl Nitrogen	3.86	Spike	P	0 - 20

Reference Method: EPA 351.2 Rev. 2.0
Batch ID: P322567

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884744	Kjeldahl Nitrogen	1.62	Spike	P	0 - 20

Reference Method: EPA 353.2 Rev. 2.0
Batch ID: P322717

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884628	NO2NO3-N	0.0	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0
Batch ID: P322673

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884630	Total-P	3.94	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322535

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884516	O-Phosphate-P	1.12	Spike	P	0 - 20

Reference Method: EPA 365.1 Rev. 2.0 dissolved
Batch ID: P322536

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884633	O-Phosphate-P	1.40	Spike	P	0 - 20

Reference Method: SM 2120 B
Batch ID: P322523

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884623	Color (true)	4.57	Sample	P	0 - 20

Quality Assurance Report Precision

Reference Method: SM 2320 B-97
Batch ID: P323003

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884504	Total Alkalinity	0.300	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P323004

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1885134	Total Alkalinity	0.0234	Sample	P	0 - 4.8

Reference Method: SM 2320 B-97
Batch ID: P323074

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884625	Total Alkalinity	0.172	Sample	P	0 - 4.8

Reference Method: SM 2540 C-97
Batch ID: P323100

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884625	TDS	2.51	Sample	P	0 - 10

Reference Method: SM 4500 F-C-97
Batch ID: P323006

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884504	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 4500 F-C-97
Batch ID: P323007

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1885134	Fluoride	0.0	Spike	P	0 - 3.0

Reference Method: SM 5310 B-00
Batch ID: P322583

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1884616	Organic Carbon	0.841	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 350.1 Rev. 2.0

Run ID: A75470

Included Lab Sample IDs: 1884627, 1884628, 1884629, 1884630, 1884631

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

Reference Method: SM 2120 B

Run ID: A75477

Included Lab Sample IDs: 1884622, 1884623, 1884624, 1884625, 1884626

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Color (true)	102	104	P/P	85 - 115

Reference Method: EPA 365.1 Rev. 2.0 dissolved

Run ID: A75479

Included Lab Sample IDs: 1884632, 1884633, 1884634, 1884635, 1884636

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
O-Phosphate-P	99.6	99.7	P/P	90 - 110
O-Phosphate-P	99.8	99.8	P/P	90 - 110

Reference Method: EPA 180.1 Rev. 2.0

Run ID: A75482

Included Lab Sample IDs: 1884622, 1884623, 1884624, 1884625, 1884626

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

Reference Method: SM 5310 B-00

Run ID: A75496

Included Lab Sample IDs: 1884627, 1884628, 1884629, 1884630, 1884631

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Organic Carbon	97.6	97.2	P/P	90 - 110

Reference Method: EPA 351.2 Rev. 2.0

Run ID: A75533

Included Lab Sample IDs: 1884627, 1884628, 1884629, 1884630, 1884631

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Kjeldahl Nitrogen	98.5	101	P/P	90 - 110
Kjeldahl Nitrogen	99.6	99.7	P/P	90 - 110

Reference Method: EPA 353.2 Rev. 2.0

Run ID: A75553

Included Lab Sample IDs: 1884627, 1884628, 1884629, 1884630, 1884631

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
NO2NO3-N	98.5	98.5	P/P	90 - 110

Quality Assurance Report Calibration Verification

Reference Method: EPA 365.1 Rev. 2.0

Run ID: A75554

Included Lab Sample IDs: 1884627, 1884628, 1884629, 1884630, 1884631

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

Reference Method: SM 2320 B-97

Run ID: A75665

Included Lab Sample IDs: 1884624, 1884625, 1884626

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	104	107	P/P	90 - 110
Total Alkalinity	107	104	P/P	90 - 110

Reference Method: SM 4500 F-C-97

Run ID: A75665

Included Lab Sample IDs: 1884622, 1884623, 1884624, 1884625, 1884626

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

Reference Method: EPA 300.0 Rev. 2.1

Run ID: A75672

Included Lab Sample IDs: 1884622, 1884623, 1884624, 1884625, 1884626

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Chloride	103	104	P/P	90 - 110
Chloride	104	103	P/P	90 - 110
Sulfate	102	97.9	P/P	90 - 110
Sulfate	97.9	104	P/P	90 - 110

Reference Method: SM 2320 B-97

Run ID: A75710

Included Lab Sample IDs: 1884622, 1884623

Component	% Rec.1	% Rec.2	Pass/Fail*	Control Limits
Total Alkalinity	101	104	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				0.692	
EPA 300.0 Rev. 2.1	Chloride	103	103	102	0.409	
	Sulfate	101	101	101		
EPA 350.1 Rev. 2.0	Ammonia-N	106	106	103		2.39
EPA 351.2 Rev. 2.0	Kjeldahl Nitrogen	98.0	102	94.7		3.86
	Kjeldahl Nitrogen	99.2	102	100		1.62
EPA 353.2 Rev. 2.0	NO2NO3-N	100	103	103		0.0

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery	MS % Recovery		Precision	
					LCS	MS
EPA 365.1 Rev. 2.0	Total-P	103	100	105		3.94
EPA 365.1 Rev. 2.0 dissolved	O-Phosphate-P	98.2	97.6	98.7		1.12
	O-Phosphate-P	99.2	99.0	100		1.40
SM 2120 B	Color (true)				4.57	
SM 2320 B-97	Total Alkalinity	104			0.300	
	Total Alkalinity	105			0.0234	
	Total Alkalinity	104			0.172	
SM 2540 C-97	TDS				2.51	
SM 4500 F-C-97	Fluoride	96.4	101	101		0.0
	Fluoride	97.4	98.9	98.9		0.0
SM 5310 B-00	Organic Carbon	99.4	98.1	97.2		0.841

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 180.1 Rev. 2.0 / E31780	Turbidity in aqueous matrices	1884622, 1884623, 1884624, 1884625, 1884626
EPA 300.0 Rev. 2.1 / E31780	Chloride in aqueous matrices	1884622, 1884623, 1884624, 1884625, 1884626
EPA 300.0 Rev. 2.1 / E31780	Sulfate in aqueous matrices	1884622, 1884623, 1884624, 1884625, 1884626
EPA 350.1 Rev. 2.0 / E31780	Ammonia in aqueous matrices as mg N/L	1884627, 1884628, 1884629, 1884630, 1884631
EPA 351.2 Rev. 2.0 / E31780	Total Kjeldahl Nitrogen in aqueous matrices	1884627, 1884628, 1884629, 1884630, 1884631
EPA 353.2 Rev. 2.0 / E31780	Nitrite/Nitrate in aqueous matrices as mg N/L	1884627, 1884628, 1884629, 1884630, 1884631
EPA 365.1 Rev. 2.0 / E31780	Total Phosphorus in aqueous matrices as mg P/L	1884627, 1884628, 1884629, 1884630, 1884631
EPA 365.1 Rev. 2.0 dissolved / E31780	Ortho-phosphate, dissolved, in filtered, aqueous matrices as mg P/L	1884632, 1884633, 1884634, 1884635, 1884636
SM 2120 B / E31780	True Color measured at 450 nm	1884622, 1884623, 1884624, 1884625, 1884626
SM 2320 B-97 / E31780	Alkalinity in aqueous matrices as mg CaCO3/L	1884622, 1884623, 1884624, 1884625, 1884626
SM 2540 C-97 / E31780	Total Dissolved Solids in aqueous matrices	1884622, 1884623, 1884624, 1884625, 1884626
SM 2540 D-97 / E31780	Total Suspended Solids in aqueous matrices	1884622, 1884623, 1884624, 1884625, 1884626
SM 4500 F-C-97 / E31780	Fluoride in aqueous matrices, without distillation (not valid for NPDES monitoring)	1884622, 1884623, 1884624, 1884625, 1884626
SM 5310 B-00 / E31780	Nonpurgeable Organic Carbon in aqueous matrices	1884627, 1884628, 1884629, 1884630, 1884631

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	03/30/2017			03/30/2017 15:54	Blanca Fach	1884622, 1884623, 1884624, 1884625, 1884626
EPA 300.0 Rev. 2.1	03/30/2017			04/08/2017	Ping Hua	1884622, 1884623, 1884624, 1884625, 1884626
EPA 350.1 Rev. 2.0	03/30/2017			03/30/2017	Julie Michelle Frank	1884627, 1884628, 1884629, 1884630, 1884631
EPA 351.2 Rev. 2.0	03/30/2017	03/31/2017	Adrian Shelby	04/03/2017	Joseph Suarez	1884627, 1884628, 1884629, 1884630, 1884631
EPA 353.2 Rev. 2.0	03/30/2017			04/04/2017	Beverly Y. Sanders	1884627, 1884628, 1884629, 1884630, 1884631
EPA 365.1 Rev. 2.0	03/30/2017	04/03/2017	Vijayalakshmi Reddy	04/04/2017	Lipi Saha	1884627, 1884628, 1884629, 1884630, 1884631
EPA 365.1 Rev. 2.0 dissolved	03/30/2017			03/30/2017 15:46	Anthony C. Onicha	1884633
	03/30/2017			03/30/2017 16:24	Anthony C. Onicha	1884632
	03/30/2017			03/30/2017 16:25	Anthony C. Onicha	1884634
	03/30/2017			03/30/2017 16:26	Anthony C. Onicha	1884635, 1884636
SM 2120 B	03/30/2017			03/30/2017 19:24	Julie Michelle Frank	1884622
	03/30/2017			03/30/2017 19:26	Julie Michelle Frank	1884623
	03/30/2017			03/30/2017 19:27	Julie Michelle Frank	1884624, 1884625
	03/30/2017			03/30/2017 19:28	Julie Michelle Frank	1884626
SM 2320 B-97	03/30/2017			04/07/2017	Dale L. Simmons	1884624, 1884625, 1884626
	03/30/2017			04/10/2017	Dale L. Simmons	1884622, 1884623
SM 2540 C-97	03/30/2017			04/03/2017	Sima Feizi	1884622, 1884623, 1884624, 1884625, 1884626
SM 2540 D-97	03/30/2017			04/03/2017	Sima Feizi	1884622, 1884623, 1884624, 1884625, 1884626
SM 4500 F-C-97	03/30/2017			04/07/2017	Dale L. Simmons	1884622, 1884623, 1884624, 1884625, 1884626
SM 5310 B-00	03/30/2017			03/31/2017	Julie Michelle Frank	1884627, 1884628, 1884629, 1884630, 1884631